Track 4: FDI in and from emerging market economies

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Complex and Difficult – The Effects of the Institutional Environment on Firm Performance in Emerging Markets

Abstract

Many different facets of institutional obstacles have been shown to influence firm performance in emerging markets. Previous literature thereby mostly focused on individual or small sets of obstacles. In this study, we pursue a holistic perspective of the institutional environment in emerging markets. Therefore, we propose measures of institutional complexity and the firm specific ability to control complexity. To test our assumptions we used data from the World Bank Enterprise Survey on 9,424 firms from 25 different emerging markets. Our results confirm that increasing institutional complexity negatively affects firm performance, both for domestic and foreign firms. While their firm specific advantages allow foreign firms to outcompete domestic firms on low and medium levels of complexity they lose their competitive advantage in highly complex environments. Our results also show that firms can mitigate some of these negative effects and improve their ability to control the complexity by cooperating with local suppliers and sales agents.

Complex and Difficult – The Effects of the Institutional Environment on Firm Performance in Emerging Markets

1 Introduction

Investments in and from emerging markets have attracted extensive research by International Business scholars. Thereby, many different aspects of these markets have been studied. Topics that are persistently addressed by scholars are the comparison between firms from developed and emerging markets, location choices, effects of distance, or spill-over and linkage effects.

Very recently Awate, Larsen and Mudambi (2014) analyzed for instance differences regarding knowledge acquisition between multinational enterprises (MNEs) from developed and developing economies. Cuervo-Cazurra and Genc (2008) investigated in how far the institutional background of an investing firm moderates its ability to deal with institutional deficits in least developed markets. Among other issues, the effects of political risk (Holburn & Zelner, 2010; Puck, Rogers, & Mohr, 2013), corruption (Brouthers, Gao, & McNicol, 2008; Cuervo-Cazurra, 2006), or a lack of intellectual property rights protection (Khoury, Cuervo-Cazurra, & Dau, 2014) were analyzed. The occurrence or prevention of knowledge-transfers between foreign and domestic firms (i.e. spill-over or linkage effects) are also subject to ongoing research (see for example Aghion, Blundell, & Griffith, 2009; Aitken & Harrison, 1999; Amendolagine, Boly, Coniglio, Prota, & Seric, 2013; Javorcik, 2004).

Despite their different topics, the studies mentioned above share some commonalities in their findings. First, the different facets of the institutional environment were found to significantly influence firm behavior and performance. Second, firms from developed economies are usually assumed to control superior firm specific advantages (FSAs) compared to those from developing economies. With regard to the literature on spill-over and linkage

effects, the findings indicate that investing firms try to limit or even prevent knowledge transfers and thereby keeping the contractual relationships with incumbent firms at a minimum.

In contrast to this, Hennart (2009) brought forward the argument that in emerging markets assets needed by investing firms to make full use of their FSAs are not freely available on the market. These assets instead are bundled within incumbent firms and can only be accessed by contractual means or joint ventures.

Taking together the assumed dominance of foreign investors and the limited scope of interconnections between foreign and domestic firms as demonstrated in the literature, gives raise to the question to what extend the institutional environment within emerging markets is indeed hindering firms to exploit their FSAs. To address this question a holistic view of the institutional environment is needed. However previous studies mostly focused on individual or rather specific sets of institutional deficits. Thereby, these studies lack the ability to take the institutional complexity and the firm specific ability to control this complexity into account (Greenwood, Raynard, Kodeih, Micelotta, & Lounsbury, 2011).

In this study, we propose measures for both aspects (i.e. institutional complexity and complexity control). We argue that foreign and domestic firms in emerging markets differ in the extent to which they are affected by institutional complexity. Furthermore, we question the moderating role of interconnections with up- and downstreaming partners on the effects of institutional complexity and the ability to control this complexity. To test our propositions, we analyzed a sample of 9,424 firms in 25 developing countries drawn from the World Bank's Enterprise Survey Manufacturing Sector Module. The main findings of this study confirm that foreign firms are more negatively affected by institutional complexity compared to domestic firms. But only in markets that are characterized by comparably high level of complexity foreign firms fully lose their dominance over incumbent firms. Moreover, we find evidence that

local partners can help firms to mitigate some of the negative effects of institutional complexity as well as to increase their ability to control the environment.

The remainder of this paper is organized as follows: Next, we discuss institutional complexity and the ability to control complexity. Thereafter, the interactions of firm origin, embeddedness and performance are presented. Based on this, we develop our hypotheses, followed by the empirical analysis. We conclude with a discussion of the results and limitations of the study.

2 Institutional Complexity and Complexity Control

Following North understanding, "institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction" (North, 1990; p. 3). These rules form the institutional environment that, in turn, provides the structure for exchange in a given area (ex. a specific country). What North termed "rules", can also be described as institutional logics. According to Thornton and Ocasio (1999; p. 804) institutional logics are defined as "the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality." These patterns provide guidance on how to interpret reality, describe how participants are expected to behave appropriately (Thornton, 2004) and are manifested in practices and structures (Friedland & Alford, 1991). Organizations within a given institutional environment usually face different logics at the same time. Within the field of management science it is generally acknowledged that organizations are exposed to different, often conflicting, institutional logics (Pache & Santos, 2010). The multitude of incompatible institutional logics constitutes a system of patterns that defines institutional complexity (Greenwood et al., 2011).

The institutional environment, and thereby its complexity, is shaped by multiple actors. National, international and local governments (Greve, Palmer, & Pozner, 2010) exert a strong influence via state regulations (Dobbin & Dowd, 1997) and enforcement mechanisms (Trank & Washington, 2009). Moreover, the media and professional associations also influence the institutional logics (Deephouse & Heugens, 2009; Greenwood, Suddaby, & Hinings, 2002; King, 2008; Purdy & Gray, 2009). From a dynamic perspective, every organizational response to the institutional environment is influencing the institutional logics in turn. The changing logics than require adjusted responses that again result in adjustments of the logics. Hence, the institutional environment and all actors co-evolve over time (Greenwood et al., 2011). Organizations are the "agents of institutional change" (North 1990; p. 5). Yet at a certain point in time, the institutional environment is strictly exogenous from an actor's perspective. Over time it becomes endogenous to some extent.

The process of co-evolution is most important when institutional complexity is high. A highly complex institutional environment is characterized by a very low predictability. This promotes the importance of organizational responses in order to reduce the degree of uncertainty, leading to increased co-evolution to work out more stable or predictable solutions. In more mature environments, institutional complexity is lower compared to emerging environments because much of the tensions constituting the complexity has already been worked out by the actors (Déjean, Gond, & Leca, 2004; Garud, Jain, & Kumaraswamy, 2002; Lawrence & Phillips, 2004).

The notion of mature versus emerging environments resembles the situation in developed and emerging markets. The latter can be characterized by highly dynamic and rather unstable or underdeveloped institutions (Dunning & Lundan, 2008). Extensive research has been conducted by International Business scholars concerning investments in and, more recently, also from emerging markets.

One field that emerged is focused on questions if and how domestic firms can benefit from inward foreign direct investment (FDI) through spill-over or linkages (Aghion et al., 2009; Aitken & Harrison, 1999; Amendolagine et al., 2013; Javorcik, 2004). Among others, Alfaro, Chanda, Kalemli-Ozcan and Sayek (2010) analyzed in how far FDI stimulates economic growth in emerging markets. Corredoira and McDermott (2014) deal with non-market organizations and their influence on spill-over and linkage effects.

With respect to the institutional complexity in emerging markets, studies dealing with the facets of institutional deficits are of particular interest here. Many IB scholars investigated these deficits in great detail. Holburn and Zelner (2010) for instance analyzed the interplay of policy risk and FDI in the electric power generation industry. They find that policy risk is influencing FDI location choice. This influence is moderated by the firms' political capabilities which can help to assess and manage this kind of institutional shortcoming. In the same vein, it was shown that firms differ in their strategies to deal with political institutions in emerging markets. These political strategies directly influence firm success due to the ability to reduce political risk (Puck et al., 2013). Focusing on corruption, a persistent institutional deficit in emerging markets, Brouthers, Gao and McNicol (2008) dealt with the question how investment motives (i.e. market vs. resource seeking) influence the trade-off between market attractiveness and corruption. By asking the question "Who cares about corruption?", Cuervo-Cazurra (2006) finds that corruption is reducing FDI inflows from countries where corruption is efficiently controlled. While FDI inflows from countries with high levels of corruption are less sensitive to high levels of corruption in the host country. The author concludes that investors who have been exposed to corruption in their home countries are less afraid of this deficit. Hence, they possess the competence to control corruption. The importance of home country experience with institutional deficits was further analyzed by Cuervo-Cazurra and Genc (2008). In their research, the authors analyzed firms from developed and developing countries investing in least

developed markets. Their results imply that when facing the same, weakly developed institutional environment, investors from developing countries are better prepared to deal with poor regulatory quality and corruption. But they also face severe difficulties when they are confronted with a weak rule of law and insufficient property right protection. More recently, it was found that institutional out- and insiders do react differently to the same set of intellectual property right protection mechanisms in developing countries (Khoury et al., 2014).

Many more scholars investigated other facets of the institutional environment of emerging markets. This includes the within-country location choice of MNEs (Ma, Delios, & Lau, 2013; Ma & Delios, 2010), the role of marketing capabilities (Wu, 2013) or the strategic alignment of MNEs in emerging markets (Luo & Park, 2001), to name a few.

Comparing the studies mentioned above, one distinctive pattern can be observed. In a given institutional environment, firms face the same institutional deficits but differ in their ability to handle them. And moreover, controlling the institutional environment is a firm specific capability (Greenwood et al., 2011). Hence, we can conclude that to a large extend firm performance in emerging markets depends on two dimensions: The institutional complexity of the market and the firms' ability to control complexity.

A second observation from our literature review concerns the way in which the institutional environment was incorporated into previous research. The majority of studies focused either on a single aspect of institutional deficits or a limited group of specific aspects. The complexity of the institutional environment as such was yet not questioned. Based on this, we argue that besides the importance of specific institutional deficits like political instability, corruption or a lack of intellectual property right protection, the overall complexity of the institutional environment directly influences firm performance in emerging markets. Institutional complexity can be described by the number of logics and, from a dynamic

perspective, the interplay among them (Greenwood et al., 2011). Increasing complexity implies increasing institutional demands paired with a decreasing predictability of the institutional environment (see for example Déjean et al. (2004)). Hence, institutional complexity creates uncertainty. This in turn aggravates the problem of bounded rationality (Rugman & Verbeke, 2005) by increasing the difficulties of information gathering and processing. As a consequence of this firms are more prone to inefficiencies and management mistakes. Moreover, firms have to invest in coordination and protection measures to reduce the uncertainty (North, 1990). Inefficient, potentially wrong decisions paired with increased costs negatively influence firm performance.

Based on the above discussion, we derive the following baseline hypotheses:

H1: Increasing institutional complexity negatively affects firm performance in emerging markets.

H2: The firm specific ability to control institutional complexity positively affects firm performance in emerging markets.

3 Firm Origin, Embeddedness and Performance

The extent to which institutional complexity negatively affects firm performance depends on how predictable and demanding the environment is for a specific firm. As was shown for example by Khoury et al. (2014), domestic firms in emerging markets perceive this as less challenging compared to foreign firms. The predictability of the institutional environment, therefore, can be assumed to be higher for domestic firms that are more experienced in deciphering it. In contrast to this, foreign firms will face increased liability of foreignness (Eden & Miller, 2004). This imposes higher transaction costs as well as increased costs of transformation on foreign firms. At the same time, it is broadly acknowledged that foreign firms in emerging markets possess superior firm specific advantages compared to the

domestic firms (see among others McGahan & Victer (2009)). These advantages make foreign firms more productive than their domestic counterparts (Aitken & Harrison, 1999). Taking both arguments into consideration, we can assume two opposing effects for foreign firms:

H3: The performance of foreign firms is superior to the performance of domestic firms in emerging markets.

H4: The negative effect of institutional complexity on firm performance is higher for foreign firms than for domestic firms in emerging markets.

Following the notion of Greenwood et al. (2011), another moderator of the importance of institutional complexity on firm performance is the firm's embeddedness. Embeddedness determines the exposure of a firm to the institutional environment. We suggest that the embeddedness of a firm in an institutional environment is subject to the degree of localization of its inputs, production and sales. Taken the production location as fixed (that is within the particular environment), a firm's embeddedness depends on the question to what extend inputs are sourced locally and to what extend outputs are sold locally. Whereby locally means within the same environment where the production takes place. With an increasing amount of localization of either sourcing or sales the degree of embeddedness should increase. The increased embeddedness in the undeveloped institutional environment of emerging markets might thereby affect firm performance negatively. But even if this seems likely at a first glance, we do not expect the effects to be negative per se. With regard to the influence of institutional complexity and complexity control, we base this assumption on the nature of both localization dimensions.

Sourcing activities are usually based on rather stable contractual interactions between the firm and a limited amount of suppliers. The details of the exchange process (e.g. nature, quality, and quantity of the goods that are supplied as well as terms and conditions) are defined

and will be repeated between the same firms. This stability helps to build trust and enables the involved parties to establish routines. Both trust and routines can reduce transaction costs. In addition to this, manufacturing firms face local content regulations in many countries (Li, Lim, & Rodrigues, 2007; Munson & Rosenblatt, 2009). By localizing sourcing activities, these tariffs can be avoided. We assume that business relations with local suppliers, which are built on trust and established routines, increase the ability of a firm to control the institutional complexity. Moreover, local supplier might directly reduce the institutional demands and uncertainty a firm faces. By sourcing locally a firm is less exposed to import regulations and potential corruption issues with customs authorities. Both aspects contribute to the overall complexity. Consequently, the negative effect of the institutional complexity is mitigated. Concerning the localization of sourcing we derive the following hypotheses:

H5a: Localization of sourcing increases the firms' ability to control institutional complexity in emerging markets.

H5b: Localization of sourcing decreases the negative effect of institutional complexity on firm performance in emerging markets.

Sales activities on the other hand take place in a marketplace environment. The seller is competing for clients. To succeed, the selling firm needs to access the market. Its offerings have to meet the needs and requirements of potential clients. Therefore, the firm needs to gain insights into these needs and requirements and has to implement them in its offerings. This requires a firm to deeply embed all its downstream activities in the local environment. The selling firm has to overcome the market constraints which are often present in emerging markets (Luo & Tung, 2007). Localizing sales in emerging markets therefore imposes additional costs compared to exporting. As for the localization of sourcing, a firm can contract for downstreaming partner in order to gain market access. Hennart (2009) emphasized that assets

needed to gain market access are often bundled within specific firms and are not freely available on the market. The firms owning these assets can be expected to be relatively more experienced in controlling the institutional uncertainty in their business sectors. Thereby, they cope with some facets of the institutional complexity. Hence, accessing these assets through contractual relations mitigates the institutional demands and uncertainty (that is the institutional complexity) for the manufacturing firm. In contrast to the market for suppliers, the manufacturing firm can be assumed to be in a relatively weaker position in the market for downstreaming partner. Here, the manufacturer is confronted with a highly fragmented market and is forced to compete with other manufactures for market access. Hence, contractual relations with downstreaming partner will be less stable and subject to frequent renegotiations. This hinders the establishment of trust and routines. As a consequence, we do not expect a significant improvement of complexity control when sales are localized in emerging markets.

H6: Localization of sales decreases the negative effect of institutional complexity on firm performance in emerging markets.

4 Sample and Measures

To test our hypotheses, we make use of the World Bank Enterprise Survey Manufacturing Sector Module 2007. After carefully controlling for incomplete and flawed responses a sample of 9,424 individual firms was used for our analysis. 1,020 of these firms were foreign firms and 8,404 domestic firms. A firm was classified as foreign if 10 or more percent of that firm was owned by a foreign individual, company or organization (*Foreign*). The firms in our sample originated from 25 different emerging countries out of four regions. The sample composition is summarized in Table 1. The regions follow the geographic definition of the World Bank and include Sub-Saharan Africa (AFR), East Asia and Pacific (EAP) and South Asia (SAR), Europe and Central Asia (ECA), and Latin America and Caribbean (LAC).

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All of our hypotheses concern firm performance. The concept of performance, thereby, can be defined in different ways. To provide a more holistic perspective, we employ two different measures of firm performance. First, we calculated the log annual profits in US-$ (*Prof*) for each firm in our sample. The benefit of this measure is that it measures the annual profits on the subsidiary (rather than corporate) level before taxes, depreciation or profit shifts within firm networks. Next, we calculated the relative costs of transformation (*RCT*) by dividing the costs of transformation of a specific firm by its sales. While *Prof* can be considered as a measure of market performance *RCT* is more focused on productivity.

Following the concept of institutional logics from a non-dynamic perspective, institutional complexity can be measured by the number of logics a firm is exposed to simultaneously in a given environment. To construct a proxy measure of the institutional complexity (*Comp*) individually for each of the 25 countries in our sample, we assumed that institutional complexity in emerging markets is mostly reflected by the institutional flaws present in the markets. The World Bank Enterprise Survey contains information on various institutional obstacles. For 14 of these obstacles full information was available in our sample. Table 2 provides an overview of the obstacles. To estimate the number of logics, we applied exploratory factor analysis following the approach of Nardo, Saisana, Saltelli, Tarantola, Hoffmann, and Giovannini (2005) on the 14 obstacles using the Kaiser criterion for factor extraction. A similar approach was recently used by Villaverde and Maza (2015) to determine factors influencing inward FDI. Following this approach, we reduced the 14 original items for each country in our dataset down to the country specific underlying structure, which is represented by the factors we found. We assume that the more factors are present in a country market the higher the institutional complexity is. For our analysis we only used the number of factors without referring to the actual factor composition. The content-related information, ex.

whether a factor covers political or infrastructural items, are of no interest for the purpose of this study given that we argue that the sheer amount of institutional facets (or logics) is already meaningful on its own.

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Next, we estimated a measure for the firm specific ability to control institutional complexity (*CCont*). To do so, we used the firm specific factor loadings from the exploratory factor analysis above. These loadings represent the extent to which a factor is hindering a firm. A high loading indicates severe difficulties of a firm to cope with a factor. Low loadings indicate weak or no difficulties. For all firms we used the mean of the loadings of all factors found for the firm. We assume that a high mean value represents a lack of ability to control the institutional complexity a firm is facing. Nevertheless, by using the mean values *CCont* is not reflecting situations in which a firm only lacks the ability to control parts of the institutional complexity while the remaining part is not hindering the firm. To take this into consideration we added a variable measuring the variance of the factor loadings (*CCont_Var*). A high variance indicates a situation where a firm strongly differs in its ability to control the different facets of institutional complexity.

To measure the degree of local sales (*LocSales*) the percentage of the firm's sales that were national sales and not exported (either indirectly or directly) was used. In the same way local sourcing (*LocSource*) was measured as the percentage of material inputs and/or supplies of domestic origin.

In addition to these direct effects, we included interaction terms in our models to test for the more complex interactions we assumed in our hypotheses. To test if foreign firms are stronger affected by institutional complexity (H4), we included the term *Foreign x Comp*. The interplays between complexity control and localization of sourcing (H5a) and complexity and

localization of sourcing (H5b) are tested by *LocSource x CCont* and *LocSource x Comp*. The interaction of complexity and localization of sales (H6) is tested by *LocSales x Comp*.

Finally, we included a set of control measures for firm characteristics (firm age in years (*Age*), experience of top-management in years (*TopExp*), firm size in employees (*Size*)) as well as country and industry dummies.

Table 3 provides an overview of the summary statistics of the variables. In Table 4 the correlation matrix is displayed. The highest correlation equals .368 between *Age* and *TopExp*.

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5 Results

To test the hypotheses, we used robust regression analysis for firm i in ISIC sector j in country k. For all estimates heteroscedasticity-corrected covariance matrices (HCCME) were used. We estimated a total of four models. Whereas, Model 1 is our baseline model focusing on the direct effects as well as on the interaction between foreign firms and institutional complexity. Model 2 and 3 separately test for effects of the localization of sales and sourcing. Model 4 combines both localization dimensions. Each model was estimated for our two dependent variables *RCT* and *Prof*. The results for *RCT* are reported in Table 5, those for *Prof* in Table 6. Standard errors are given in parentheses.

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Concerning our hypotheses most of our assumption are supported by the empirical results. Next, the results are discussed in more detail.

In H1 we assumed that increasing institutional complexity negatively affects firm performance in emerging markets. In all four models and for both performance measures H1 is supported. All results show significant effects with correct signs. Hence, we can conclude that

the sheer amount of different institutional facets a firm is exposed to affects firm performance negatively in emerging markets.

H2 was focusing on the firm specific ability to control institutional complexity. To measure control we employed two measures of the degree of difficultness. The first variable (*CCont*) measured the average degree of difficultness. Here, we only found weak support of our hypothesis. Only Model 3 and 4 in Table 5 support H2 with regard to *CCont*. In contrast to this, our second control-ability measure (*CCont_Var*) is supported in all models. *CCont_Var* measured the variance of the factor loadings of *Comp*. A high variance indicates a situation where a firm strongly differs in its ability to control the different facets of institutional complexity. The strong empirical support for *CCont_Var* combined with the lack of support for *CCont* might indicate that the particular inability of a firm to cope with some facets of the institutional complexity is more of an obstacle for a firm than the average level of the ability to control institutional complexity. Hence, the inability to deal with a very difficult facet overrules the average ability of a firm. In other words, a single institutional aspect a firm is unable to control is sufficient to seriously harm its performance.

In our third hypothesis (H3) we stated that the performance of foreign firms is superior to the performance of domestic firms in emerging markets. We found strong support for this assumption in all models. In addition to this, H4 assumed that the negative effect of institutional complexity on firm performance is higher for foreign firms than for domestic firms in emerging markets. H4 is also supported in all models. Taking both hypotheses together, we can conclude that foreign firms indeed control superior firm specific advantages compared to domestic firms in emerging markets but are less capable to deal with institutional complexity. An increasing level of complexity therefore erodes their ability to exploit these firm specific advantages up to a level where domestic firms are superior to foreign firms. In Figure 1 we plotted the effect of an increasing institutional complexity on *RFC* for domestic and foreign firms to illustrate this

interaction based on the results of Model 2 in Table 5. In this example domestic firms are superior to foreign firms as soon as the complexity measure exceeds a value of 4.66.

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In H5a and H5b we assumed that localization of sourcing is increasing the firm's ability to control institutional complexity (H5a) and decreasing the negative effect of complexity itself (H5b). For both hypotheses we only found partial support. While H5a is only significantly supported for *RCT*, H5b is only supported for *Prof*. Yet, in all models all estimates show the correct sign. These results imply that local suppliers effectively reduce the costs of transformation, for example by being more prepared to organize local transportation or more general by establishing trust and routines. But this ability is not as effective for the more market oriented performance of our profit measure. The market oriented performance, on the other hand, benefits more clearly from a complexity reduction realized by the localization of sourcing. A comparison of the composition of both performance measures implies that the complexity reduction effect of local supplier might be related to a firm's ability to increase the price or quantity of its production output. The increase of the ability to control complexity seems to be more related to the actual costs of production.

In our final hypothesis H6 we assumed that localization of sales decreases the negative effect of institutional complexity on firm performance in emerging markets. With the exception of Model 4 in Table 5, our results strongly support H6. Therefore, we find support for our assumption that local downstreaming partner help to reduce the complexity of the institutional environment. The results of our empirical analysis are summarized in Table 7.

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6 Discussion and Limitations

Institutional deficits are a core characteristic of many emerging markets. The ability to deal with different facets of weakly developed institutional environments, therefore, was subject to a wide variety of empirical studies. By focusing on individual or a limited amount of institutional deficits these scholars greatly improved our knowledge about the effects of institutional flaws on firms doing business in emerging markets.

Nevertheless, focusing on individual deficits ignores the overarching complexity of the institutional environment. As we argued, the concept of institutional complexity goes beyond the individual components such as political stability or corruption. By measuring institutional complexity, at least from a non-dynamic perspective, we were able to demonstrate empirically that increasing complexity negatively affects firm performance in emerging markets. Moreover, our results allowed us to shed more light on the perceived superiority of foreign firms over domestic competitors. According to our findings, the ability of foreign firms to exploit their firm specific advantages is moderated by the institutional complexity present in a given environment. While foreign firms are still superior under low or medium levels of complexity, they become inferior in environments that are characterized by high levels of complexity.

Moreover, we found evidence that the ability to control institutional complexity is only efficient if a firm is able to control all facets of the institutional environment. A lack of control of parts of the institutional flaws present in a country significantly harms firm performance. To mitigate the harmful effects of institutional complexity as well as to improve the ability to control this complexity, we found localization decisions of up- and downstreaming activities to be effective to some degree. Following our theoretical arguments, we interpret this finding in a way that local partners on both sides of the value-chain are able to support firms in coping with institutional complexity.

Taken together, our findings yield some managerial implications for firms doing business in emerging markets. First of all, our measure of institutional complexity can be used to further improve location choice and market entry decisions. Multinational firms can use this information either to choose which markets they enter or to assess the need for local partners. Even if we omitted the information of how the factors of institutional complexity are composed in our study, firms can use this information to assess their ability to control all relevant aspects in a given country. Thereby, they can improve staffing decisions and training programs in order to close these gaps more efficiently.

In addition to the managerial implications, our findings open different avenues for further research. First, we highlighted the importance of a more holistic analysis of the institutional environment. While previous studies mostly focused on certain aspects of institutional shortcomings we were able to demonstrate that the complexity that emerged from these individual facets is also moderating firm performance. Moreover, our findings demonstrate that external institutional complexity is not equal to the firm specific ability to control the institutional environment. Both elements can be implemented in future research projects and can help to advance our understanding of business activities in and from emerging markets. While the actual composition of institutional complexity was beyond the scope of our study, we believe that our approach might also help to shed more light on the mechanisms that generate this kind of complexity. This information might help policy makers to improve the institutional environment of their home countries and to promote economic growth.

The main limitation of our study lies in the way we had to derive the measures of institutional complexity and the ability to control complexity. By using exploratory factor analysis we were able to model the multi-faced nature of institutional complexity in a rather simple way. But due to the strictly cross-sectional nature of our dataset, we were not able to include the interactive nature of complex systems. These interactions can be considered as

another important aspect of institutional complexity (Greenwood et al., 2011). Ultimately, these interactions shape institutional complexity over time. The limited depth of our data also forced us to measure the ability of complexity control on a highly aggregated but still firm specific level. Nevertheless, the aggregation bears the risk of including some external effects as well.

Although the World Bank Enterprise Survey dataset offers many benefits, its use is also subject to further limitations. The sample constitutes only a small percentage of all manufacturing firms, and it is not representative of the population of firms in a given country. However, for our purposes, this limitation should not bias the results very strongly, since we are using a broad sample and do not focus on specific countries. Another important limitation of the data is that most information is self-reported, which might bias the results. Although we used multiple items to construct our performance measure, they might share a common bias. To the best of our knowledge, flawed observations were removed from our sample by removing all observations that were marked as not truthful or unreliable by the interviewer, and by manually removing odd observations.

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Tables and Figures

Regions	**# Firms**	**# Domestic Firms**	**# Foreign Firms**
AFR	1,870	1,576	294
EAP/SAR	873	776	97
ECA	850	789	61
LAC	5,831	5,263	568
Sum	*9,424*	*8,404*	*1,020*

Table 1: Sample composition - firms by region

Question	**Obstacle**	**Question**	**Obstacle**
C30a	Electricity	J30b	Tax administration
D30a	Transportation of goods, supplies and inputs	J30c	Business licensing and permits
D30b	Customs and trade regulations	J30e	Political instability
G30a	Access to land	J30f	Corruption
H30	Courts	K30	Access to financing
I30	Crime, theft and disorder	L30a	Labor regulations
J30a	Tax rates	L30b	Inadequately educated workforce
E30	*Practices of competitors in the informal sector (Not included due to lack of data)*		

Table 2: List of obstacles

Variable	**Mean**	**Std. Dev.**
Prof	17.762	21.175
RCT	.687	.399
Comp	3.526	.499
CCont	.007	.717
CCont_Var	.279	.320
LocSales	87.687	26.420
LocSource	69.141	35.285
Age	20.193	17.935
TopExp	19.243	11.791
Size	101.765	388.387

Table 3: Summary statistics

	Prof	***RCT***	***Comp***	***CCont***	***CCont_ Var***	***Loc Sales***	***Loc Source***	***Age***	***TopExp***	***Size***
Prof	1.000	-	-	-	-	-	-	-	-	-
RCT	.237	1.000	-	-	-	-	-	-	-	-
Comp	-.039	-.011	1.000	-	-	-	-	-	-	-
CCont	.024	.001	.001	1.000	-	-	-	-	-	-
CCont_Var	-.007	-.003	.163	.156	1.000	-	-	-	-	-
LocSales	-.054	.017	.016	-.028	.036	1.000	-	-	-	-
LocSource	-.027	.010	-.068	-.052	-.017	.169	1.000	-	-	-
Age	.054	.009	-.137	.027	-.038	-.021	-.055	1.000	-	-
TopExp	.041	.010	-.148	-.001	-.055	-.028	-.071	.368	1.000	-
Size	.054	.014	-.051	.018	-.028	-.164	-.051	.170	.034	1.000

Table 4: Correlation Matrix

Dependent Variable Relative Costs of Transformation (*RCT*)					
		Model 1	**Model 2**	**Model 3**	**Model 4**
Variable	**Hypotheses**	**Coefficient (Std. Error)**	**Coefficient (Std. Error)**	**Coefficient (Std. Error)**	**Coefficient (Std. Error)**
Const.		.0984*** (.1033)	.1295 (.1480)	.2981** (.1240)	.1095 (.1544)
Age		-.0007*** (.0002)	-.0009*** (.0002)	-.0008*** (.0002)	-.0008*** (.0002)
TopExp		.0008** (.0003)	.0006* (.0004)	.0008** (.0003)	.0008** (.0003)
Size		-.0001*** (.0000)	-.0001*** (.0000)	-.0001*** (.0000)	-.0001*** (.0000)
LocSales		-	.0028** (.0012)	-	.0018* (.0011)
LocSource		-	-	.0009 (.0008)	.0009 (.0008)
Comp	H1 (+)	.0984*** (.0199)	.1481*** (.0349)	.1237*** (.0269)	.1608*** (.0360)
CCont	H2 (+)	-.0037 (.0047)	-.0048 (.0051)	.0198** (.0097)	.0205** (.0097)
CCont_Var	H2 (+)	.0448*** (.0115)	.0518*** (.0132)	.0447*** (.0115)	.0442*** (.0115)
Foreign	H3 (-)	-.1706*** (.0595)	-.1534** (.0615)	-.1638*** (.0597)	-.1409** (.0610)
Foreign x Comp	H4 (+)	.0366** (.0166)	.0339** (.0171)	.0341** (.0167)	.0311* (.0169)
LocSales x Comp	H6 (-)	-	-.0006* (.0003)	-	-.0003 (.0003)
LocSource x CCont	H5a (-)	-	-	-.0004*** (.0001)	-.0003*** (.0001)
LocSource x Comp	H5b (-)	-	-	-.0003 (.0002)	-.0003 (.0002)
N		9,424	9,424	9,424	9,424
R^2		.0403	.0354	.0413	.0434
Root MSE		.3275	.3996	.3273	.3270
* p < 0.1; ** p < 0.5; *** p < 0.01					

Table 5: Empirical results – RCT

Dependent Variable Profit (*Prof*)					
		Model 1	**Model 2**	**Model 3**	**Model 4**
Variable	**Hypotheses**	**Coefficient (Std. Error)**	**Coefficient (Std. Error)**	**Coefficient (Std. Error)**	**Coefficient (Std. Error)**
Const.		17.0082*** (1.1350)	30.1684*** (2.0539)	21.8573*** (1.4655)	24.7069*** (1.9740)
Age		.0446*** (.0036)	.0446*** (.0035)	.0440*** (.0035)	.0448*** (.0031)
TopExp		-.0121*** (.0039)	-.0134*** (.0039)	-.0133*** (.0039)	-.0135*** (.0038)
Size		.0023*** (.0005)	.0021*** (.0004)	.0023*** (.0004)	.0021*** (.0004)
LocSales		-	-.1400*** (.00166)	-	-.1302*** (.0134)
LocSource		-	-	-.0514*** (.0107)	-.0416*** (.0103)
Comp	H1 (-)	-2.0995*** (.2035)	-5.2201*** (.4465)	-3.0730*** (.3136)	-2.7157*** (.5358)
CCont	H2 (-)	.3486*** (.0578)	.3101*** (.0570)	.1558 (.1248)	.1464 (.1217)
CCont_Var	H2 (-)	-.2888** (.1248)	-.2579** (.1230)	-.3072** (.1248)	-.2612** (.1199)
Foreign	H3 (+)	6.3358*** (1.1097)	4.7190*** (1.0271)	5.990*** (1.0807)	4.6822*** (.9966)
Foreign x Comp	H4 (-)	-.9938*** (.2967)	-.6920** (.2709)	-.9490*** (.2881)	-.7039*** (.2632)
LocSales x Comp	H6 (+)	-	.0319*** (.0043)	-	.0296*** (.0043)
LocSource x CCont	H5a (+)	-	-	.0024 (.0016)	.0015 (.0015)
LocSource x Comp	H5b (+)	-	-	.0109*** (.0028)	.0086*** (.0027)
N		9,083	9,083	9,083	9,083
R^2		.4288	.4472	.4355	.4649
Root MSE		3.8552	3.7930	3.8333	3.6569
* p < 0.1; ** p < 0.5; *** p < 0.01					

Table 6: Empirical results – Prof

	Hypotheses	***RCT***	***Prof***
H1	Increasing institutional complexity negatively affects firm performance in emerging markets.	Supported	Supported
H2	The firm specific ability to control institutional complexity positively affects firm performance in emerging markets.	Partly supported	Partly supported
H3	The performance of foreign firms is superior to the performance of domestic firms in emerging markets.	Supported	Supported
H4	The negative effect of institutional complexity on firm performance is higher for foreign firms than for domestic firms in emerging markets.	Supported	Supported
H5a	Localization of sourcing increases the firms' ability to control institutional complexity in emerging markets.	Supported	Not supported
H5b	Localization of sourcing decreases the negative effect of institutional complexity on firm performance in emerging markets.	Not supported	Supported
H6	Localization of sales decreases the negative effect of institutional complexity on firm performance in emerging markets.	Partly supported	Supported

Table 7: Overview results

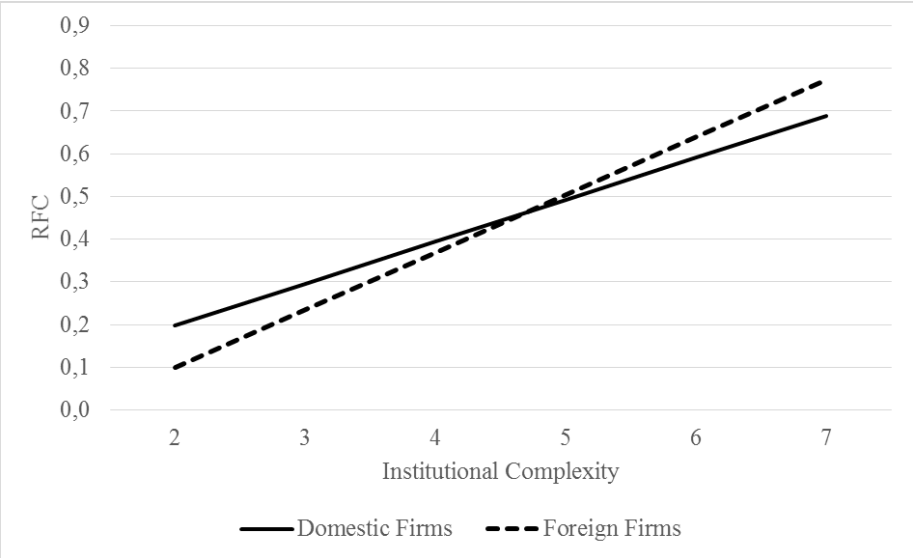

Figure 1: RFC depending on institutional complexity for domestic and foreign firms