

The determinants of export performance in BRIC countries: the role of firm resources and the institutional environment

Abstract

We posit that export performance of firms in emerging economies depends both on their firm-specific resource endowments and on the institutional environments within which they operate. Specifically, we argue that firms will be likely to export when political instability is high, they face more informal competitors, and are able to grease the regulatory system via bribes. Furthermore, firm export intensity will depend on access to critical resources such as skilled workforce, managerial talent and product quality. We test these conjectures using a dataset of 5,600 firms in the four largest emerging market economies (Brazil, Russia, China and India). Our results confirm that the institutional environments affect export propensity through political instability and bribery, whilst the export intensity of firms depends on the availability of skilled workers and adherence to international quality standards. These findings provide new insights into the export performance of emerging market firms (EMFs).

Keywords: *Emerging market firms; Exports; Resources; Institutions; Heckman model*

INTRODUCTION

The world economy has undergone significant changes in recent decades in response to economic restructuring and market liberalization in many countries; trade and investment liberalization; technological advances in transportation and information and communication technologies (ICT); and financial deregulation and the integration of world financial markets (Buckley & Strange, 2015). The world has become much more integrated economically (Allessandria & Choi, 2014), and this has brought both opportunities and challenges for many emerging market firms (EMFs). Many EMFs face new competitive threats from which they had previously been sheltered, including greater competition from foreign players in their domestic markets (Aulakh & Kotabe, 2008; Gaur et al, 2014). To survive in the long-run, many EMFs have looked to foreign markets in order to compensate for the lost ground in their home markets (Melitz, 2003).

Internationalization may be effected through foreign direct investment (FDI), licensing, or exporting (Root, 1994). Generally, exporting is favoured by firms in the early stages of their internationalization as it is the easiest and most flexible strategy, necessitates a lower level of resource commitment, and thus involves less firm-specific risk. There is a substantial literature on the determinants of firm exports (see, for example, Bernard et al., 2011 and Naudé et al., 2015, for excellent summaries), but most of these studies focus on firms from advanced economies and relatively few empirical studies have been undertaken of firms from emerging markets (Gao et al, 2010).

Notwithstanding the difficulties for all firms of internationalization, firms from advanced economies are typically blessed in their home economies with institutional environments where the obstacles to carrying out their business activities are relatively minor (World Economic Forum, 2014). Unfortunately, the same cannot often be said for many emerging economies, and many EMFs have begun to internationalize in recent years to escape institutional constraints at home (Witt & Lewin,

2007; Boisot & Meyer, 2008). One such constraint is the often dominant influence of the government in emerging markets, especially in largely planned economies, and a stifling regulatory burden as a consequence. The lack of incentives for entrepreneurial activity may also drive EMFs to search for other potential markets where entrepreneurs are given more room to operate (Wright et al., 2005). Another potential explanation for the internationalization of many EMFs is the opening-up to foreign competition of their home country economies. More intense competition in the industry by means of foreign entrants might push EMFs to search for alternative international markets (Gaur et al., 2014).

This paper draws upon both institutional theory (Peng et al, 2008) and the resource-based view of the firm to address how institutional factors and firm resources combine to determine the export performance of EMFs. We develop six hypotheses, and empirically test these hypotheses using data on EMFs from the four BRIC economies (i.e. Brazil, Russia, India, and China). These four economies together accounted for thirteen percent of world exports in the period 2006-2010 (UNIDO, 2012), and this percentage is steadily increasing. Our empirical analysis uses the Heckman two-stage estimation procedure in which we first model export propensity (i.e. whether or not firms export) as *inter alia* a function of the hypothesised home-country institutional variables, and then model export intensity (i.e. the value of the export/sales ratio) as *inter alia* a function of the hypothesised firm-specific resources.

We contribute to the literature in the following ways. First of all, we develop a theoretical framework combining institutional theory and the resource-based view within which the internationalization of EMFs can be studied. It is important to include both strands of literature when studying the internationalization of EMFs, since these have to operate under different circumstances than firms from developed countries. Exports are a way to escape the weak institutional context in many emerging markets. Hence, we offer an integrated approach to study resources, institutions, firm heterogeneity and the internationalization of EMFs.

Second, and related to the first contribution, we provide insights into the strategic actions

undertaken by EMFs. The literature acknowledges the relevance of firm resources as key determinants with regard to strategic change. However, in emerging markets resources available to firms are often constrained due to a lack of incentives to develop these. Moreover, the institutions surrounding the EMFs are less developed than in developed economies. We need to analyze what enables firms to change from one strategy to another, in this case shifting strategy from producing for the domestic market for the international market (Wright et al., 2005). The focus on the BRIC countries in this paper provides us the opportunity to dovetail this theoretical angle.

The rest of this paper is organized as follows. The next section gives an overview of the relevant literature and develops testable hypotheses for the roles of select firm resources and institutional factors on firm exports. Section three presents a description of the data and the methodology used in this study. The fourth section details the empirical results while the fifth section discusses them and provides conclusions.

THEORY AND HYPOTHESIS DEVELOPMENT

Countries differ considerably in terms of their institutions (North, 1990). Differences in the institutional architecture in turn have an influence on the strategic actions undertaken by firms and may thus impact on their performance. A common theme in the existing literature is that emerging economies are typically regarded as higher-risk and higher-regulated countries, and it is thus reasonable to conjecture that these institutional environments may provide incentives for EMFs to initiate exporting strategies to avoid and/or circumvent some of the institutional failures in their home economies (He et al, 2013). Three characteristics of the institutional environment in the home economy, in particular, merit consideration in relation to the decision to start exporting or not: political instability, the size of the informal sector and the level of corruption.

A well-established stylized fact in the literature is the negative relationship between the degree of political instability and economic growth (Jong-A-Pin, 2009). Allard et al. (2012) show that innovations are most likely to flourish in politically stable countries. Moreover, Arráiz et al. (2013) reiterate the point that political stability strongly favours enterprise development. Furthermore, political instability leads to greater uncertainty, especially in countries where political patronage and/or government regulation are important features of the business context, and this too provides an obstacle to business at home and an incentive for EMFs to venture overseas. Thus, firms in politically unstable economies are likely to look to other faster-growing markets where they can profitably sell (Guillaumont, 1999). Our first hypothesis is thus:

H1: There will be a positive relationship between political instability in the home country and the export propensity of EMFs.

In many emerging economies, substantial amounts of activity are undertaken in the informal sector and not recorded in official GDP statistics (London & Hart, 2004). Many entrepreneurs do not engage in the formal economy because it is simply too costly and/or complicated to do so, and instead participate in the informal sector. Many scholars agree that a large informal sector negatively influences the optimal allocation of resources (see e.g. Webb et al., 2013; Hsieh & Klenow, 2009), and the literature also shows that there is a strong negative correlation between informality and productivity of firms in developing countries (see, for example, Steel & Snodgrass, 2008; Gelb et al., 2009). Formally-registered firms are on average more productive than informal firms, and this has been attributed to unequal access to public services (Steel & Snodgrass, 2008), rule enforcement (Gelb et al, 2009), and preferential access to inputs (including human capital) and scale economies (La Porta & Shleifer, 2006).

Notwithstanding the greater productivity of the formally-registered firms, it is often the case in countries with significant informal sectors that the law is not fully enforced and that informal firms are able to restrict competition by setting additional entry barriers in a strategic fashion (London & Hart, 2004). Many formal EMFs find that they cannot defend their brands, patents or contracts due to a lack of formal sanction mechanisms. Formally-registered firms thus search for overseas markets where they can enjoy more level playing fields, and can exploit their competitiveness (Buckley et al, 2007). Thus, our second hypothesis is:

H2: There will be a positive relationship between the influence of the informal sector in the home country and the export propensity of EMFs.

Unfortunately, corruption is still a widespread phenomenon in many emerging economies where the legal systems are less developed (Lee & Weng, 2013). Many authors have pointed out that corruption has a strong and direct negative effect on firm performance and also influences the economic and social development of countries (see, for example, Chadee & Roxas, 2013; Wang & You, 2012). On the one hand, high levels of corruption constrict firms to be more focused on their home markets (Hundley & Jacobson, 1998), and diverts their attention away from potentially profitable overseas markets. On the other hand, those firms with the best export prospects may benefit from the assistance of corrupt government officials and, from this perspective, bribes might be seen as a strategic resource that improves the competitiveness of the EMF (Martin et al, 2007). However, the extant empirical research suggests that the former effect dominates (Lee & Weng, 2013). Our third hypothesis is thus:

H3: There will be a negative relationship between the level of corruption in the home country and the export propensity of EMFs.

Our first three hypotheses above relate different home country institutional characteristics to the export propensity of EMFs. We now develop three additional hypotheses which relate important firm-specific resources to the export intensity of EMFs: these resources are the quality of the workforce, the experience of the top management, and the possession of an internationally-recognised quality standard.

Human capital is an essential input to the production process, and a prerequisite for innovation and the discovery of new technologies (Abbas & Foreman-Peck, 2007; Miller & Upadhyay, 2002). Furthermore, the interaction between human and physical capital fosters investment in both types of capital, thereby acting as an additional factor which encourages productivity at the firm-level (Yamauchi, 2010). The quality of the workforce is thus an important determinant of the long-run competitiveness of the firm, and will have an impact not just upon labour productivity but also upon the ability of the firm to overcome the liabilities of foreignness in overseas markets (Greenaway & Yu, 2004; Wakasugi et al, 2008). Our fourth hypothesis is thus:

H4: There will be a positive relationship between the quality of the workforce and the export intensity of EMFs.

In addition to the skills of the workforce, it is also important to consider the experience of the senior management in the firm. Many authors have suggested that management practices are crucial in explaining differences in firm performance (Van Reenen, 2011). That is, different management practices lead to firm heterogeneity both between and within countries, and better management practice has been robustly associated with better firm performance (Bloom et al., 2012). Drawing upon the resource-based view of the firm, experienced managers bring deep knowledge of the industry and of export possibilities (Sapeinza et al, 2006), and also the ability to manage the personnel

effectively to create and sustain competitive advantage (Yiu et al, 2007). Our fifth hypothesis is thus:

H5: There will be a positive relationship between the experience of the top management and the export intensity of EMFs.

An important issue for many EMFs, particularly when exporting to advanced economy markets, is that their products are often viewed as low quality and lacking in sophistication (Wright et al, 2005). A suitable quality signal is useful “when a supplier’s capability to design and supply conforming products needs to be demonstrated” (Clougherty & Grajek, 2008), as it sends a clear message to potential buyers about the sophistication of the exporters and their production processes. The possession of an internationally-recognised quality standard (e.g. ISO9000 or ISO14000) lowers information-related transaction costs (Nadvi, 2008), helps to overcome the information asymmetries between buyers and sellers (Leland, 1979), and thus facilitates exports. Thus, minimum quality standards, such as ISO 9000, can significantly reduce transaction-related costs (Blind, 2004). Our sixth and final hypothesis is therefore:

H6: There will be a positive relationship between the possession of an internationally-recognised quality standard and the export intensity of EMFs.

METHOD

In this section, we describe the dataset used, explain how the dependent, independent and control variables are operationalised, and provide a brief overview of the Heckman methodology used to estimate the parameters. We finish with some descriptive statistics. Detailed definitions of all the variables are provided in Table 1.

Data and Sample

The data are collated from the World Bank's Enterprise Surveys of firms in Brazil, Russia, India and China. The surveys collect information about the countries' business environments, and the perceived constraints to firm performance and growth. The surveys use standardized survey instruments and a uniform sampling methodology to minimize measurement error, hence the data are comparable across countries. The data are collected through interviews with the top managers of each establishment, and the answers are quality-checked by the local interviewers. In each country, the surveys covered all firms with more than five employees in the non-agricultural economy – i.e. firms in the manufacturing, construction, services, retail, transport, storage, communications, and IT sectors, but excluding firms in the financial intermediation, real estate and renting, public and utilities sectors. The surveys are undertaken in different years - Brazil (2009), Russia (2012), India (2005), and China (2012) and cover 11,008 firms from these countries. However, after omitting firms for which some of the relevant data were missing, we are left with a total sample of 5,596 firms: 924 of these firms were from Brazil (16,5 %); 1883 from Russia (34,6 %); 756 from India (13%); and 2006 from China (35,8). 768 of these firms reported some export sales, whilst 4,801 only sold to their domestic markets. This is in line with previous literature, as exporting often is a rare phenomenon (e.g. Singh, 2009).

The Dependent Variables

Following the extant literature (Estrin et al, 2009; Gao et al, 2010), we measure the export performance of the EMFs by reference to two measures: export propensity and export intensity. *Export propensity* is a categorical variable (EXPRO) that equals one if a firm has overseas sales; and zero otherwise. *Export intensity* is calculated from the survey question (“In the last fiscal year, what percent of this establishment's sales were direct exports?”), and is a continuous variable

(EXPINT) with values between zero and one hundred percent.

The Independent Variables

There are three variables related to the institutional environments in the home countries of the EMFs. The first institutional variable (POL) relates to *political instability*. The managers were asked the following question (“To what extent is political instability an obstacle to the current operations of this establishment?”), and were provided with five possible responses ranging from no obstacle (0), to minor (1), to moderate (2), to major (3), and to very severe obstacle (4).

The second institutional variable (INF) captures the extent to which the existence of the informal sector affects business operations. The managers were asked the following question (“To what extent are the practices of competitors in the *informal sector* an obstacle to the current operations of this establishment?”), and were provided with five possible responses ranging from no obstacle (0), to minor, to moderate, to major, and to very severe obstacle (4).

And the third institutional variable (CORR) captures the extent to which *corruption* affects business operations. The managers were asked the following question (“On average, what percentage of total annual sales, or estimated total annual value, do establishments like this pay in informal payments or gifts to public officials to “get things done?””), and the data were provided as percentages.

There are also three variables related to the firm-specific resources of the EMFs. The managers were asked the following question (“Is an inadequately educated workforce an obstacle to the current operations of this establishment?”), and were provided with five possible responses ranging from no obstacle (0), to minor (1), to moderate (2), to major (3), and to very severe obstacle (4). These scores were then inverted, so the interpretation is more intuitive. Accordingly, the first resource variable (WORK) measures the *quality of the workforce*, and a high value of

WORK corresponds to a workforce with the requisite skills and capabilities. We would expect the estimated coefficient to have a positive sign.

The second variable (MAN) captures the *experience of the top manager*, and is a proxy for greater managerial capabilities. The managers were asked the following question (“How many years working in this industry does the top manager have?”), and the data were provided in years. The third variable (ISO) is a dummy variable taking the value of one if the EMF holds internationally-recognised quality certification (e.g. ISO9000, ISO14000), and zero otherwise.

The Control Variables

We also include several control variables which have been found to be important in the extant literature on the determinants of exports. The first control variable is *firm size* (SIZE) as larger firms tend to internationalize faster and to a greater extent than smaller firms (Bernard et al, 2007).

The second variable is *firm age* (AGE). In the emerging economy context, we expect older firms – and especially those that were established in the pre-reform period – to be more risk-averse (Yiu et al, 2007) and to be both less likely to export and to have a lower export intensity.

The third variable is a dummy variable (FWOS) that takes the value of one if the EMF is a *foreign wholly-owned subsidiary* - meaning that foreign private individuals, companies or institutions own 100% of the common stock – and zero otherwise. We expect such firms to be export platforms for their parent companies taking advantage of lower production costs in emerging economies (Zeng & Rosetti, 2004). Of the 5,596 firms in our sample, 99 are foreign wholly-owned subsidiaries, while 5,345 firms reported that 0% of the common stock is in foreign hands.

The fourth variable is another dummy variable (MANUF) which takes a value of one if the main activity of the EMF is in *manufacturing*, and zero otherwise. We expect such firms to be

more involved in exporting than firms in the other sectors (e.g. construction, services, retail, transport, storage, communications, and IT) where the products are often non-tradable (Riedl, 2010). Within our sample, 60% of the EMFs are active in the manufacturing industry.

Finally, there is a set of three *country-specific dummy variables* (INDIA, BRAZ, RUSS) to capture the effects (relative to Chinese EMFs) of any idiosyncratic elements not elsewhere included. As noted above, the estimated coefficients will also include year-effects due to the different years of data collection. The MANUF and country dummy variables are not reported in the tables, but were included throughout all estimations. In the tables they are reported as country fixed-effects (CFE) and industry fixed-effects (IFE).

Estimation Methodology

Our empirical analysis uses the Heckman two-stage estimation procedure to deal with possible sample selection bias, in which we first use probit estimation to model export propensity (i.e. whether or not an EMF exports), and then OLS to model export intensity (i.e. if the EMF exports, then how much does it export). The probit estimation – see equation (1) - incorporates the three institutional variables (POL, INF, CORR) and various control variables, and is estimated using the full sample of observations. The OLS estimation – see equation (2) – incorporates the three firm-specific resource variables, various control variables, and the Inverse Mills Ratio (IMR) obtained from the probit regression.

The IMR is calculated from the truncated mean of the first stage probit estimation, which in turn is obtained by the generalized residuals for the EMFs reporting non-zero exports. The IMR corrects for the fact that the sample of exporting EMFs is not random (Hill et al, 2011), as the OLS estimation only includes the 768 observations EMFs which actually export. The estimated coefficient of the IMR is a function of the correlation between the error terms of the two models.

Hence, if significant, it indicates the existence of a sample selection problem and the direction of this correlation. On the other hand, if not significant, it rules out the possibility of a non-random subsample. The models to be estimated are thus:

$$EXPPRO_i = \alpha_1 + \alpha_2 POL_i + \alpha_3 INF_i + \alpha_4 CORR_i + \delta_1 X_i + \varepsilon_{1i} \quad (1)$$

$$EXPINT_i = \beta_1 + \beta_2 WORK_i + \beta_3 MAN_i + \beta_4 ISO_i + \beta_5 IMR_i + \delta_1 X_i + \varepsilon_{2i} \quad (2)$$

Descriptive Statistics

Table 1 provides definitions and descriptive statistics for the dependent, independent and control variables, whilst Table 2 shows the correlation matrix for all included variables. The dependent variable EXPINT has a relatively low mean of around 5.5%. This can be explained by the fact that a lot of EMFs in the data do not export at all (around 14% of the EMFs report a positive value for exports), which in turn drives down the mean of this variable¹. This confirms prior literature, where only a small fraction of all firms engage in international trade (Bernard et al, 2011). The EXPRO and EXPINT variables correlate highly with each other. However, since we use both variables in different models the effect of collinearity on our estimation results are mitigated. The other variables do not indicate that collinearity would pose a problem to our estimations.

***** *Insert Tables 1 & 2 about here* *****

¹ For exporting firms the mean of export intensity is 40.35 percent, while the standard deviation is 36.04.

RESULTS

Two-step estimation

As explained in the hypotheses development section, we distinguish between variables influencing the decision whether or not EMFs export and variables determining the share of exports. For the model to be identified, we need at least one variable which does affect the decision to start exporting (i.e. propensity) but which does not influence the amount of exports (i.e. intensity). Hence, in the first step of the model we include the three variables related to the institutional environments in the EMFs' home countries, whilst in the second step we include the three firm-specific variables related to the resources of the EMF.

The results of the probit estimation (equation 1) are reported in table 3. The dependent variable is export propensity (EXPRO).

***** *Insert Table 3 about here* *****

The first model in Table 3 only includes the control variables, the second model includes the POL variable, the third model includes the INF variable, the fourth model includes the CORR variable and, finally, the fifth model includes all institutional-based variables. Two control variables seem to have a statistically significant impact on the decision to export or not, these being SIZE and FWOS. Hence, bigger firms and firms which are a foreign wholly owned subsidiary are more likely to be engaged in exporting, confirming prior literature (Bernard et al. 2007; Zeng & Rosetti, 2004). The variable AGE on the other hand does not have a statistically significant impact on export propensity, although the variable does have its expected sign.

Model (5) shows that a higher degree of political instability in the home market leads

EMFs to have a relatively higher export propensity. In other words, the results support our first hypothesis and suggest that firms are more likely to be engaged in exporting if managers experience that political instability in the home market poses a constraint to the operations of the EMF. As Guillaumont (1999) puts it, political instability is often more intense in emerging markets than in developed countries and this poses a constraint to competitive EMFs. This in turn drives such firms in the former type of countries to search for alternative markets where they can profitably sell (Guillaumont, 1999).

Model (5) does not provide support for our second hypothesis. This hypothesis states that informal competitors pose a constraint to the operations of an EMF. That is, informal competitors do not seem to influence the export propensity of EMFs as it is not significantly correlated with the dependent variable indicating whether or not an EMF exports. However, this variable does have its expected sign. Finally, a higher level of corruption negatively affects the export propensity of EMFs, suggesting evidence for our third hypothesis. As corruption effectively ties EMFs to their home markets, it is more attractive for such firms to focus on this market, and are less likely to export. This confirms prior findings, as the attractiveness of serving foreign markets will be lower in such cases (Lee & Weng, 2013).

The results of the OLS estimation (equation 2) are provided in Table 4. Here the dependent variable is export intensity (EXPINT), and only those EMFs that report exports.

***** *Insert Table 4 about here* *****

In Table 4, the first model only includes control variables, the second model includes the WORK variable, the third model includes the MAN variable, the fourth model includes the ISO variable and, finally, the fifth model includes all three firm-specific resource variables. The IMR variable is

statistically significant which indicates that the error terms of the probit and OLS models are not independently determined and there is sample selection bias, hence the method applied here is the appropriate one. In other words, OLS estimation of the full sample of EMFs – including those EMFs which reported zero values for EXPINT would have produced biased estimates. The estimates would be downwardly biased since the IMR has a negative value. AGE, has a statistically significant negative impact on export intensity, as expected. That is, longer-established firms export a relatively lower share of total sales than recently established firms. This confirms the findings in the prior literature, as older firms are in general more risk-averse (Yiu et al., 2007). The variables SIZE and FWOS have different signs than expected, but both variables are not statistically significant.

In model (5), both ISO and WORK have positive and statistically significant effects on export intensity, suggesting evidence for our fourth and sixth hypotheses. Hence, EMFs holding quality certificates export more than those without, and confirms the findings in prior literature (Ying & Ouyang, 2014). Furthermore, the more capable the workforce the more likely the EMF is to export a high share of its total sales. This provides confirmation of the previous literature, as it is stated that a relatively well-equipped workforce acts like a strategic resource for the firm (Wagner, 2007). However, the variable MAN has a negative coefficient, contrary to expectations, but is small and statistically insignificant. We thus find no support for our fifth hypothesis relating export intensity to the experience of the top management.

As a robustness check we also estimated a Tobit model in the second stage of our model, following Gao et al (2010). The Tobit model can overcome the issue that many of observations are dropped in the second stage of our estimation, due to the fact that it can handle data of two sorts, limit observations ($y=0$) and non-limit observations ($y>0$). In other words, for all the observations it is known whether or not an EMF exports while for the EMFs that do, it is known how much

they export and no censoring takes place (Breen, 1996). Two important assumptions when using a Tobit model are that the standard errors are normally distributed and that the data is homoscedastic, as otherwise the estimates will be inconsistent (Lee & Maddala, 1985). Both criteria were not met, which leads us to conclude that our Heckman two-stage model is appropriate in this instance, especially since the IMR is significant as discussed above.

DISCUSSION AND CONCLUSIONS

This study has examined the export performance of EMFs, as major contributors to the explosive growth witnessed by emerging economies over the last decades. A mix of theoretical arguments from RBV and institutional theory were applied to analyse EMFs' behaviour in terms of export performance. In doing so, we have provided two distinct contributions to the extant literature.

First, we link institutional theory to the export behaviour of firms in emerging markets under the assumption that firm heterogeneity triggers different responses among exporting and non-exporting firms. This heterogeneity is also obvious from our dataset which indicates that exporting is a rare activity, confirming prior findings in the literature that bigger firms export a larger share of their total sales both in developed (Bernard et al., 2011) and developing economies (Chari & David, 2011). The latter are especially important considering their recent and sustained efforts to liberalize and open up to the global flows of goods and investments. Although these significant changes are perhaps even more conducive on the importance of market-based resources and capabilities, organizational behaviour does not occur in an organizational vacuum (Dacin et al., 1997) and institutional background is still representative for firm behaviour, especially in international interactions (Estrin et al., 2009). Hence, the existing institutional heterogeneity in emerging markets can only support the need for deeper understanding on how these forces impact firm behaviour in lower-quality institutional environments, such as the ones present in BRIC

countries (Meyer et al., 2009).

Second, this study contributes to a growing body of literature on the internationalization efforts of EMFs. While significant research has been undertaken on how MNEs and domestic firms in well-established markets behave and interact strategically with each other, EMFs remain relatively understudied (Sousa et al., 2008). By focusing on them, we shed some light on the activities of this type of organizations and the way they operate. Moreover, by examining EMFs in the context of BRIC countries we provide a unique perspective on the effects of firm- and country-specific factors on export performance of firms in the four biggest and most important emerging markets, namely Brazil, Russia, India and China. Together these four economies are responsible for nearly a quarter of the global GDP, and are set to overtake the G7 countries in terms of GDP by 2050 (UNIDO, 2013).

Our results indicate that both firm capabilities and the institutional environment affect export performance of EMFs. They confirm that IBV and RBV arguments should be considered and combined to explain export performance of firms in these markets. Consistent with our theoretical conjectures, we find that firm capabilities matter for EMFs' intensive margin (i.e., how much they export), while their institutional background affects their export propensity. Hence, although emerging markets have undertaken significant steps towards market-economies in which firm resources are more important, institutional elements are still acting as major enablers or barriers for internationalization via exports.

Thus, EMFs are still influenced by the institutional environment, as political instability, the degree of informal competitors and corruption all have an impact on their export performance. Accordingly, more instability and more informality in the home economy drive EMFs to search for alternative markets, while corruption in the home market makes it more likely EMFs focus on the country where they operate. The first and the third feature impact on the export propensity of

EMFs, thereby supporting calls in the literature to focus on the relationship between firms' assets and the changing nature of the countries' institutional infrastructure (Hoskisson et al. 2000). With this study we demonstrate that these institutional factors determine the international performance of firms, as proxied by exports. Thus, political instability drives firms outside their home markets in search of new and more lucrative opportunities. Likewise, a corrupt and non-transparent landscape which promotes pressures to focus more on the home country will force most EMFs to focus on their national market.

We hypothesized that EMFs with superior capabilities and resources will internationalize relatively more than firms who did not develop these sources of productivity and competitiveness. This holds in particular with respect to export intensity. As EMFs with more resources are commonly more productive, they can therefore incur the additional costs associated with exporting. Our hypothesis holds true with regard to EMFs having a relatively more capable workforce which are more likely to export a greater share of total sales. However, the above does not hold with regard to the variable ISO. On the contrary, EMFs holding such a quality signal export a smaller share of total sales than EMFs not holding such an internationally recognized certification. A possible explanation would be that an ISO standard has a positive impact on the decision to start exporting or not (i.e. export propensity) but it matters less for the amount of exports. This confirms our statement, namely that institutions and resources should be analyzed combined since both do not operate in a vacuum.

Limitations and future directions

While this work provides some interesting insights on the interplay between institutional elements and firms' internal resources on their export performance (as proxied by their propensity, and respectively intensity of exports), it also has shortcomings, which can serve as starting points for

future studies. First, perhaps the biggest limitation of this study is that only the BRICs were included. Future research could look at more countries than just the BRICs, as it could very well be that these countries are not representative for many other emerging economies. While our theoretical arguments are universal and can be tested empirically for a wider set of countries, this study takes a more focused approach and examines these effects only in the context of BRIC countries, which represent a significant and increasing portion of the global GDP

Second, another limitation of this study was that almost all Indian firms included in the sample were based in the manufacturing industry. Hence, this provides an explanation for the fact that Indian EMFs were found to be more likely to export and that they export a greater share of total sales relative to Chinese EMFs (not shown in the results). Manufactured products are most easily exported, thus giving an explanation for this surprising result. However, future research could look whether the results found here are confirmed when new data is available on Indian firms which provides relatively more information regarding to non-manufacturing firms.

Finally, the cross-sectional nature of our empirical set-up prevents us from controlling for other, time-variant firm-specific resources which may affect their export behaviour. To deal with this, we model export performance as an endogenous selection outcome. Following Heckman's (1979) procedure we correct for this endogeneity, and the empirical results support this line of thought. However, we realize that this is only part of the problem as export behaviour of firms may be driven by multiple other factors which are not explicitly modelled in this study. Thus, as more rounds of Enterprise Surveys will be developed by the World Bank, future studies may want to employ panel techniques to control for this unobserved heterogeneity. Such studies could validate our current conjectures and establish a more robust causal link between firm capabilities and institutional elements on one hand, and the export performance of firms on the other.

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Table 1: Description of the variables

Variable	Description of Variable	Mean	SD
EXPRO	Dummy variable, taking value 1 if EMF reports a positive amount of exports and 0 otherwise	0.14	0.34
EXPINT	Continuous variable ranging between 0 and 100, measuring the amount of exports in relation to total sales as a percentage	5.54	1.93
POL	Managers were asked to indicate on a five point scale (ranging from 0 to 4) whether political instability poses a constraint to the operations of the EMF.	1.03	1.33
INF	Managers were asked to indicate on a five point scale (ranging from 0 to 4) whether the informal sector poses a constraint to the operations of the EMF	1.07	1.25
CORR	Continuous variable ranging between 0 and 100, measuring the amount, expressed as a percentage of sales, EMFs need to pay "to get things done"	1.06	4.57
WORK	Managers were asked to indicate on a five point scale (ranging from 0 to 4) whether an inadequately educated workforce posed an obstacle to the current operations of this establishment.	2.65	1.36
MAN	Continuous variable measuring the years of experience of the top manager working in the industry in which the EMF is active.	15.89	9.85
ISO	Dummy variable, taking value 1 if EMF holds an internationally recognized certificate and 0 otherwise	0.67	0.47
SIZE	Continuous variable measuring the size of the firm in terms of the logarithm of the number of workers	3.54	1.39
AGE	Continuous variable measuring the age of the EMF (years)	14.38	11.64
FWOS	Dummy variable, taking value 1 if EMF is a wholly owned subsidiary and 0 otherwise.	0.017	0.132
MANUF	Dummy variable, taking the value 1 if EMF operates in the manufacturing sector, and 0 otherwise.	0.60	0.49
INDIA	Dummy variable, taking the value 1 if EMF operates in India, and 0 otherwise.	0.13	0.37

BRAZ	Dummy variable, taking the value 1 if EMF operates in Brazil, and 0 otherwise.	0.17	0.37
RUSS	Dummy variable, taking the value 1 if EMF operates in Russia, and 0 otherwise.	0.35	0.48
CHINA	Dummy variable, taking the value 1 if EMF operates in China, and 0 otherwise.	0.36	0.48
IMR	Inverse Mills Ratio, measuring the correlation between the error terms of the two models.	1.78	0.49

Table 2: Correlation Matrix

	1	2	3	4	5	6	7	8	9	10
1. EXPRO	1									
2. EXPINT	0.7211	1								
3. SIZE	0.3005	0.1825	1							
4. AGE	0.1102	0.0132	0.2981	1						
5. FWOS	0.1938	0.1228	0.1351	0.0231	1					
6. MANUF	0.1698	0.1027	0.2458	0.1880	0.0690	1				
7. INDIA	0.1437	0.2110	-0.0687	0.0842	-0.0540	0.1790	1			
8. BRAZ	0.0157	-0.0756	0.0338	0.2851	0.0571	0.2082	-0.1720	1		
9. RUSS	-0.1320	-0.1377	-0.2693	-0.1594	-0.0445	-0.3464	-0.2815	-0.3237	1	
10. CHINA	0.0181	0.0471	0.2893	-0.1217	0.0379	0.0570	-0.2891	-0.3324	-0.5441	1
11. POL	0.0170	-0.0293	-0.0860	0.1292	-0.0053	-0.0102	-0.0785	0.4451	0.1567	-0.4450
12. INF	0.0037	-0.0342	-0.0246	0.1117	-0.0154	0.0576	-0.1226	0.4103	-0.1051	-0.1274
13. CORR	-0.0164	-0.0101	-0.0774	0.0246	-0.0292	0.0382	0.2623	-0.0252	-0.0187	-0.1459
14. WORK	-0.0071	0.0611	-0.0162	-0.1431	-0.0307	-0.0796	0.0967	-0.5133	0.0019	0.3277
15. MAN	0.0615	-0.0139	0.2051	0.3485	0.0370	0.1007	-0.2469	0.2952	-0.0840	0.0279
16. ISO	-0.1905	-0.1097	-0.4387	-0.0940	-0.1097	-0.2050	0.0314	0.1169	0.3332	-0.4431
	11	12	13	14	15	16				
11. POL	1									
12. INF	0.3258	1								
13. CORR	0.0405	0.0057	1							
14. WORK	-0.4733	-0.3584	-0.0219	1						
15. MAN	0.1259	0.1275	-0.0476	-0.1477	1					
16. ISO	0.1941	0.0824	0.0546	-0.1268	-0.0766	1				

Table 3: *The Determinants of Export Propensity (Heckman procedure - Stage 1)*

Independent variables	EXPRO	EXPRO	EXPRO	EXPRO	EXPRO
	model 1	model 2	model 3	model 4	model 5
SIZE	0.322*** (17.81)	0.322*** (17.79)	0.323*** (17.86)	0.320*** (17.67)	0.321*** (17.65)
AGE	-0.00191 (-0.96)	-0.00211 (-1.06)	-0.00201 (-1.01)	-0.00182 (-0.92)	-0.00207 (-1.04)
FWOS	0.0115*** (9.86)	0.0116*** (9.95)	0.0116*** (9.94)	0.0115*** (9.84)	0.0116*** (9.97)
POL		0.0895*** (4.18)			0.0885*** (4.03)
INF			0.0349* (1.72)		0.0189 (0.90)
CORR				-0.0153*** (-2.63)	-0.0167*** (-2.82)
constant	-2.742*** (-30.05)	-2.773*** (-30.19)	-2.776*** (-29.70)	-2.734*** (-29.94)	-2.782*** (-29.64)
CFE	Yes	Yes	Yes	Yes	Yes
IFE	Yes	Yes	Yes	Yes	Yes
N	5596	5596	5596	5596	5596
Log Likelihood	-1855.7759	-1847.0653	-1854.3117	-1851.9374	-1842.2424
Pseudo R-squared	0.1708	0.1747	0.1714	0.1725	0.1768

t statistics in parentheses

* p<.10, ** p<.05, *** p<.01

Note: All models include controls for country (CFE) and industry fixed-effects (IFE).

Table 4: The Determinants of Export Intensity (Heckman procedure - Stage 2)

Independent variables	EXPINT	EXPINT	EXPINT	EXPINT	EXPINT
	model 1	model 2	model 3	model 4	model 5
SIZE	-0.459 (-0.18)	-4.530* (-1.81)	-0.751 (-0.29)	0.386 (0.15)	-3.782 (-1.49)
AGE	-0.465*** (-6.31)	-0.349*** (-4.84)	-0.437*** (-5.62)	-0.475*** (-6.49)	-0.347*** (-4.68)
FWOS	0.0107 (0.12)	-0.118 (-1.36)	-0.00238 (-0.03)	0.0283 (0.32)	-0.107 (-1.22)
IMR	-1.028 (-0.10)	-19.10* (-1.86)	-2.553 (-0.24)	0.148 (0.01)	-19.27* (-1.86)
WORK		5.148*** (5.81)			5.525*** (6.15)
MAN			-0.132 (-1.04)		-0.0359 (-0.29)
ISO				6.271** (2.32)	8.360*** (3.18)
constant	57.97* (1.95)	93.17*** (3.29)	64.11** (2.13)	49.59* (1.66)	86.26*** (2.96)
CFE	Yes	Yes	Yes	Yes	Yes
IFE	Yes	Yes	Yes	Yes	Yes
N	768	768	768	768	768
R-squared	0.1726	0.2056	0.1736	0.1789	0.2166

t statistics in parentheses

* p<.10, ** p<.05, *** p<.01

Notes: All models include controls for country (CFE) and industry fixed-effects (IFE). The IMR represents the Inverse Mills Ratio computed from the first stage which models the export propensity of firms.