

Does Institutional Quality Impact Firm Performance? Evidence From Emerging and Transition Economies

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Abstract

Using data on institutional quality from the QoG Expert Survey coordinated at the University of Gothenburg, and the Enterprise Survey collected by the World Bank, this paper draws inferences on the effect of better government institutions for the performance of 16,105 firms in 42 developing and transition countries. It is hypothesised that firms operating in economies with better government institutions will outperform firms in economies with weaker institutions, due to the assumed occurrence of economic opportunities that otherwise does not exist. Following Baumol's theoretical predications, an empirical research stream studying the effect of the business environment on firm-level performance have emerged over the past decade. This stream e.g. associates better property rights institutions to positively influence the performance of firms. Previous work however fails to address the underlying cause of institutional quality. In this paper I therefore use a more comprehensive index of institutional quality to more accurately estimate the effects of policy weaknesses for firms' in their daily operations. The results from the OLS regressions provide a tentative indication that government institutions exercising its power impartially indeed has a positive impact on firm productivity and growth.

Keywords: Institutional Quality, Impartiality, Determinants of Firm Performance, Emerging Economies, Transition Economies

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1. Introduction

Firms are in many ways fundamental for economic progress. They play an important role in developing new ideas and technologies, increasing demand by offering new services and products, and not least by creating new jobs. Whereas successful countries have millions of businesses, others are failing to promote entrepreneurial activity. According to North (1990) and Baumol (1990) one answer to such variation, are differences in institutional quality, through the practice of rule of law, and enforcement of property rights. Economic theory specifically suggests that such institutions provide innovators incentives to innovate, and investors to invest.

Existing empirical evidence additionally supports the view that economic and political institutions matter in achieving societal performance (Knack et al. 1995, LaPorta 1999). Achemoglu et al. (2008) for example conclude that “the main determinants in cross-country differences in income per capita are differences in economic institutions” (p. 25). In the light of this, Hernando de Soto (2000) discusses how poor institutional capacity in Peru results in low firm creation rates across the developing world, further supporting the view that the rules of the game indeed do affect the players of the game. For some time economists have thus recognized the business environment to be an important determinant of aggregate entrepreneurial performance, but how important are institutions for the performance of the individual firm?

Johnson et al. (2002) finds that better property rights institutions makes firms’ more likely to reinvest their profits in the business. Ward et al. (2010) similarly find that better property rights institutions have a positive impact on firm productivity. Nonetheless, existing evidence rests on proxies of institutional quality that may be undertheorized, and therefore fails to capture the underlying cause of why some institutions are better than others. Johnson et al. use the subjective perception of firm managers’ in their population sample, to build an index of institutional quality, based on their responses on e.g. court effectiveness and whether extralegal payments are assumed in transactions. Ward et al. moreover rely on an index of property rights from The Heritage Foundation which does not take into account that rule of law implies a public administration that exercise its power impartially (Rothstein et al. 2008). To more accurately measure the effects of policy weaknesses on firm-level performance one must thus proxy the quality of those that exercise authority, namely the public administration.

I address this by using a measure from the Quality of Government Institute of the University of Gothenburg on whether public administration acts according to this norm of impartial behaviour among civil servants, when studying the effects of variation in institutional quality on firm-level performance. This index more specifically aims at measuring whether “when implementing laws and policies, government officials shall not take into consideration anything about the citizen/case that is not beforehand stipulated in the policy or the law” (Rothstein et al, 2008, p. 170). My empirical framework uses ordinary least squares (OLS) controlling for firm-level, as well as country-level characteristics using data from the Enterprise Survey of the World Bank. Although my perspective on institutional quality offers a new perspective within this research stream, my starting point is similar to existing literature. I hypothesise that firms operating in countries with better institutions, as defined by a public administration that exercise its power impartially, will outperform firms operating in countries where institutional quality is lower. Intuitively, better institutions would result in less economic frictions, providing agents more, and otherwise not existing economic opportunities. In approaching this I use two performance metrics of firms; productivity, and employment growth. The empirical results in this paper are tentative in nature, but provide an indication that an impartial government exercising its power impartially do matter for both firm productivity and employment growth.

The rest of this paper is organized as follows: section two describes the theoretical background, and reviews the empirical literature on the relationship between institutions and entrepreneurship. Section three includes empirical analysis to test the hypothesis, followed by results in section four. Section five concludes.

2. Theoretical Framework and Previous Literature

2.1 Theoretical Background

A. The Role of Entrepreneurship in Economic Progress

The process of railroadization, electrification, and the internet all represent revolutionary innovations that throughout the history of capitalist society had the power to change the world economy. Following the work of Joseph Schumpeter (1935) (1942) such ground-breaking innovation strongly associates with economic fluctuations in the short-run as well as long-run overall structural changes. Economic progress is according to this view seen as a development in which new innovations replace yesterday’s technology, in a process known as “creative destruction”. The driving force of this process are entrepreneurs’ and large firms through what

Schumpeter calls “entrepreneurial spirit”. Firms’ and other economic organizations are assumed to have the resources to invest in new services and technologies, that contributes to raising standards of living.

Whereas Schumpeter means that an entrepreneur is someone who finds new combinations of inputs to create new products, and services, i.e. entrepreneurship comes from innovation, Kirzner (1973) differs in that he thinks that entrepreneurship is the process of discovering new profit opportunities, and act on them, i.e. entrepreneurship comes from arbitrage. According to Kirzner the market therefore reaches its long-run equilibrium when there no longer exist any plausible profit opportunities for entrants. The initial move made by the entrepreneur is thus the first step towards the market-equilibrium. In contrast, Schumpeter argues that one equilibrium is replaced by another when a new ground-breaking innovation such as electricity starts to develop, i.e. when new innovative firms displace firms in sectors where innovation has staggered.

In this sense firms’ constitute the foundation of economic growth. This approach can however be criticized for overemphasising market-solutions to solve various social and economic issues (Kirzner 1997). Rodrik (2007) moreover argues that without a sound institutional environment, such as a system of property rights, and a regulatory apparatus, markets will be characterized by anti-competitive behaviour, and moral hazard, hence functioning poorly. Without the presence of rule of law few incentives are in place to motivate entrepreneurs to act on opportunities.

B. How Institutions Influence Entrepreneurship

It is well-established in the literature that predictable institutions provide entrepreneurs with incentives to be innovate, and investors incentives to invest in new products and services. Boettke et al. (2003) who focus on how entrepreneurship can foster economic development therefore suggests that “economic growth driven by entrepreneurship” is irrelevant without “reference to existing institutions” (p. 3). In particular, they claim that if growth is to be driven by various entrepreneurial activities stable property rights must be in place. Bowen (2008) also highlights how the “the nature of a country’s institutions may contribute to economic growth, not only by creating conditions supportive of entrepreneurial activity, but also by helping to direct entrepreneurial efforts toward particular types of activity (p. 762).

In line with this view Baumol (1990) suggests that the institutional framework will influence the business community’s activities towards for society productive, unproductive or even

destructive ventures. According to Baumol, the “entrepreneurial spirit” is present in all societies, through all times, but proposes that the rules of the game determine the relative payoffs of different entrepreneurial activities. If an entrepreneur is defined as a person who are “ingenious in finding ways that add to their own wealth” they will therefore seek the opportunities’ that are the most profitable (p.897). A change in the set of rules from one time to another may thus influence the allocation of entrepreneurial resources. This allocation between productive and unproductive activities can have a profound effect on the innovativeness of the economy.

Unproductive ventures often take the form of rent-seeking activities such as litigation, takeovers of enterprises, and efforts to avoid paying taxes. A legal system that tends to favour these activities can therefore reduce the time entrepreneurs spend on achieving productive goals. The aggregate result can be a less innovative and productive economy. Vishny et al. (1993) establish two channels through which rent-seeking activities are costly to growth that is driven by entrepreneurship. First, private rent-seeking, taking the form of theft, piracy, litigation, and other forms of transfer between private parties, exhibit increasing returns that make rent-seeking more attractive relative to productive activities. For instance, if only a few people devote their time to theft they are more likely to get caught, and payoffs are low. The more people that devote their time to crimes, the harder it is to both prevent it, and put them into custody which may make such activities more attractive due to better payoffs. Secondly, public rent-seeking deals with redistribution between private actors and the state through taxation, or through the private sector and bureaucrats who can control the fortune of the private sector.

The existing economic and political institutions will according to North (2005) as a consequence influence what kind of organizations that come into existence. For instance, if organizations perceive that piracy will give the highest payoff, firms will direct their ventures towards piracy. Similarly, if productive activities are perceived as giving the highest payoff, ventures will be taken in this direction. Although firms’ short-run objective is to maximize profits, the long-run goal is to survive, and to continue operations in the market. Firms and other organization are moreover working in a world of scarce resources. In order to “survive” economic organizations therefore constantly need to acquire new skills and knowledge to be able to work as efficient as possible in a world characterized by competition of the existing resources. The skills and knowledge that will be learnt are however a perception of profit opportunities influenced by the existing institutional framework. When competition increases,

the incentives to acquire new skills for firms' increases the likelihood that the aggregate economy becomes more productive.

Overall, institutions constitutes the rules of the game, whereas economic organizations, such as firms, cooperatives, trade unions, and so on are the players of the game. This focus on formal rules and the government institutions, as proposed by North and Baumol, has however been criticized on the basis that it remains unclear why some agents follow the rules and others do not (Greif, 1994). The emphasis of rule of law as institutional quality also implies that the public authority's acts impartially, i.e. "be unmoved by certain sorts of considerations – such as special relationships and personal preferences" (Cupit 2000, p 11), an aspect nor North or Baumol takes into consideration.

C. A Perspectives on Institutional Quality: The Public Administration

The previous section establish that it may not necessarily be lack of entrepreneurial resources such as human and physical capital that hinders economic progress, but how government institutions implement laws and policies. This part will therefore discuss a perspective on what makes some government institutions better than others (Rothstein et al. 2008). This view suggests that institutional quality in government is based on a specific normative and behavioural criterion; namely an impartial public administration. According to this view the political systems consists of an input side which relates to the access to public authority, and "this is where we find rules about elections, party financing, the right to stand for office, and the formation of cabinets (p. 169). Second, the output side refers to the way political authority is exercised. In this view it is the actions taken by civil servants, professional bodies in public service, law enforcement personnel and the like that plays the main part in achieving stable and predictable institutions.

In modelling this argument Rothstein assumes four spheres of interests with different scopes of interests, *the state, the market, the interest organization, and the family*. In order to maintain certain standards, quality of government institutions specifically "implies that those who exercise public power needs to know and acknowledge the boundaries between what norms apply in different moral spheres. They also need to acknowledge the boundaries between what norms apply in the state sphere, and how they differ from what is considered legitimate in other spheres" (p. 174). The exercise of power within the state sphere should thus be in accordance with enacted laws and policies and should apply equally to all. That is, the impartial behavioural norm does not apply universally in all spheres but is restricted to the state-sphere. In the other

four spheres other norms apply. In the market e.g. it is perfectly normal to act according to selfish interests. According to this view agents act according to the norms of each sphere and understand that code of conduct in one sphere is not transferable to another sphere, meaning that norms within one sphere may be dysfunctional and unethical in others.

The impartial civil servant perspective has however been criticized for being an impossible ideal by du Gay (2000), and for being insensitive to the complexities and special needs of different cases by Olsen (2006). Finally, public choice theory, frequently used by economists to evaluate the public administration, also stand in some contrast. Mueller (1979) for instance suggests “that man is an egoistic, rational, utility maximizer” (p. 1). In this sense civil servants are more interested in promoting their own objectives, and it may for instance be rational to be corrupt if payoffs are higher than resisting according to Goel et al. (1989).

2.2 The proposition of this paper

Assume two economies A and B of the same market size, where the business environment is identical. That is, the financial system, infrastructure, openness to the rest of the world, educational attainment and other aggregate variables are the same. Economy A has a relatively strong institutional framework with an impartial public administration whereas economy B has a relatively weak institutional framework. Moreover, assume two firms, X of economy A, and, Y of economy B of the same size, and the same age. Firm performance will depend on all available inputs, assume therefore that they are the same for firm X and firm Y so that access to capital, technology, and talent are equivalent.

I hypothesis that the more impartial government institutions of economy A will cause less friction within its economic system relative B, all other things equal. For instance, not having to pay extralegal payments to officials, reliable/ predictable government, stable property rights enforcement, and reduced uncertainty in transactions resulting in more efficient markets. As a consequence, economy A provide firm X economic opportunities that does not exist for firm Y. More specifically, these economic opportunities translate into an overall greater likelihood of firm X being able to maximize the value of its inputs relative to Y. In doing so, X will be more productive, and create more new jobs. In conclusion, X will outperform Y.

3. Previous Empirical Research

A. The Role of Internal and External Factors on Firm Performance

One explanation of heterogeneity in the performance of firms are found internally through factors such as, size, adopted technology, human capital endowment, managerial skills, R&D investments, openness to international markets, and innovative capacity (Lasagni et al., 2012). In addition to the controlled decisions made by managers' and owners' in house, the literature also argues that the outside environment affects firms. Hernando de Soto (2000) shows that institutional barriers, and poor policy in Peru negatively impacts aggregate firm creation. Djankov (2002) is moreover able to confirm the importance of institutions in determining aggregate entrepreneurial performance, such as firm entry using data from some 80 countries. Hallward-Dreimer et al. (2006) do however note that although "the large steps of opening or closing a business inevitably involve the regulatory and administrative authorities, firms also deal with regulatory and administrative issues that affect the day-to-day operations" (p. 635).

To capture this effect several efforts to collect data by the World Bank was made in the 2000s, in which managers of firms across the world are surveyed with the overall objective to pick up obstacles in the business environment as perceived by firms. Using these surveys, among others, researchers' have been able to go down to the firm-level to examine how institutions and policy weaknesses actually affect firms in daily operations. In doing so it has become fashionable to argue that the overall business environment plays a central role in determining the overall strength of economies. In particular, through its impact on the performance of firms (Svejnar et al., 2011).

B. Property Rights Institutions

A central aim of this research stream thus is to study the channels through which institutions affect firms' performance. According to Dixit (2009) secure property rights are a central feature of well-functioning markets. From an entrepreneurial point of view Ward et al. (2010) therefore suggests that better property rights facilitate firms' ability to make performance enhancing business decisions. More specifically "firm's productivity and economic performance are expected to be augmented by higher quality institutions that are more supportive of firms' business strategies and competitiveness. In line with this Johnson et al. (2002a) approach this by building an index of property rights institutions based on managers responses on whether they would expect to make extralegal payments to obtain export/import licenses, or other government services, and perceived court effectiveness. Using this index, based on 1,400 managers' perception, this paper studies institutional differences in five European transition economies, and its impact of the likelihood that firms will reinvest their profits, in order to make

their business grow. Their data is based on surveys collected in 1997. According to this study the presence of secure property rights appears to be important for firms to take full advantage of opportunities to invest. More specifically, the results shows that the entrepreneurs with the least secure property rights reinvests 40 % less of their profits in their business than those with the most secure property rights.

Ward et al. (2010) however use two other dependent variables, namely labour productivity, and gross profits. Labour productivity is expressed as a ratio between firms' output and input, and gross profits equals total revenues minus cost of sold goods. A measure of the perception of the quality of property rights are incorporated in the analysis from The Heritage Foundation, together with firm-level survey data from the Investment Climate Survey (ICS) collected between 2000-05. This paper has access to approximately 17,000 observations allowing for more generalized inferences. Similar to Johnson, regression analysis suggests that better property rights are associated with better performing firms

Previous results that property rights institutions matter are however contested by Pisardies (2003) who examine a large spectra of potential business environment constraints as experienced by managers. Similar to theory this study finds that the main objective for firms indeed is to maximize profits. In achieving this purpose, however, managers in the sample, consisting of 400 firms in Russia and Bulgaria, did not identify property rights to be a problem in the sense that operations are not affected by costly extralegal payments for government surveys. Pisardies research instead indicates that access to external financing is a more severe obstacle to increasing profits for firms.

C. Government, and Court Effectiveness

To examine the effect institutions have on firms' productivity, Lasagni et al. (2012) proxy is also a ratio of firm revenues and inputs (employees and capital). This study moreover adopts a broader perspective on institutions beyond property rights enforcement, using the Institutional Quality Index (IQI). IQI aims at measuring institutional quality in different provinces in Italy along "the degree of freedom of press and association (Voice and Accountability), the quality of public service and the policies formulated and implemented by the (Government Effectiveness), the ability of government to promote and formulate effective regulatory interventions (Regulatory Quality), the perception concerning the law enforcement both in terms of contract fulfilment, property rights, police forces, activities of the magistracy and crime

levels (Rule of Law), the degree of corruption of those performing public functions both in terms of illegal gains and private proceeds acquired to the detriment of society (Control and Corruption)” (p. 8).

Lasagni et al (2012) hypothesis that higher institutional quality in Northern Italy can help explaining productivity differentials between firms located in North and the South respectively. In doing so data collected in The MET 2008 survey which contains information on e.g. employment, investments, innovation among others, is merged with data from AIDA, which collects financial information of private companies, resulting in a sample of 4,000 Italian firms. Overall, the OLS regressions shows that the differences in geographic institutional quality seems to impact productivity differentials between firms in Italy. In particular, indicators that relate to government effectiveness and voice and accountability turns out to be the most relevant external factors in determining differences in performance across Italy.

Similarly LiPuma et al. (2011) find that higher-quality institutions in terms of government intervention, impartial court system, and stable tax regulation increase the odds that a given firm will export. Johnson et al. (2002b) similarly find a positive effect if legal institutions are perceived as trustworthy. This study shows that the more effective courts are perceived, the higher is the trust in new relationships between firms and their customers. The main implication being an increased likelihood of entrepreneurs trying new suppliers. Ward et al (2010) furthermore examine how different legal systems effect firms’ productivity. There results for example suggests that if the legal system in the Philippines’ were of German origin, firm-level productivity would be improved by a couple of percentage points.

Beck et al. (2005) more elaborately study how legal institutional flaws impacts firms’ revenue growth rates. They use the World Business Environment Survey (WBES), also of the World Bank, in a sample consisting of 4,000 firms across 54 countries. The survey asks managers’ to evaluate if the interpretation of laws and regulation is perceived to be consistent, and if courts in business disputes would uphold various contractual obligations. Although firms find legal obstacles annoying they do find ways to work around them, and does in other words not necessarily impact firms’ revenue growth. The results from regression analysis indicate that the extent to which legal underdevelopment limit a firm’s growth depends very much on firm size, finding that improvements in such constraints mainly would impact the performance of smaller firms.

D. Business Environment, and Investment Climate

The scope of the investment climate is related, but complementary to institutions. According to Dollar et al. (2006) the scope is characterized by “low custom clearance times, reliable infrastructure and good financial services” (p. 1514). This paper moreover investigates the relationship between a better investment climate and the likelihood of a randomly selected firm to be internationally integrated. In doing so two probit functions examine whether a firm is an exporter or foreign owned. The sample consists of 6,000 firms in eight Asian, and Latin American countries collected by the 2006 Investment Climate Survey (ICS). A better investment climate appears to make firms more likely to export. Hallward-Dreimeier et al. (2006) furthermore use several firm-level performance proxies, namely sales growth, investment rate, productivity and employment growth. Their sample (1,500 observations) is however smaller and focus exclusively on China, using data from the Chinese National Bureau of Statistics. In particular it is found that firm performance is correlated with “regulatory burdens, corruption, technological infrastructure, and labour-market flexibility” (p. 646).

Finally, Svejnar et al. (2011) generally evaluates external factors influence on how well firms do. Their sample consists of survey data collected by the World Bank of some 15,000 firms based in 26 transition economies. In particular, Svejnar questions the importance of various institutional constraints on firms’ performance, finding that other aggregate variables such as school enrolment, market size, and the overall health of the population are far better indicators. According to this study no systematic relationship between various constraints and performance appears to exist. They speculate that a lack of detectable effect of institutions and other constraints in the data could reflect either that firms can get around various obstacles to doing business at a relatively low cost, or firms who face severe constraints compensate for the presence of these constraints and report lower severity than is actually the case.

E. Summary

In line with this paper, previous literature focus on developing and transition economies. The literature tends to distinguish between internal factors such as size and endowment of human capital, and external constraints such as operating in competitive markets with sound institutions. The literature does however not fully agree to what extent external factors influence performance. Svejnar et al. (2011) for instance advise policymakers not to rely on various indicators of business obstacles, when recommending that more research is needed to fully

grasp such effects on entrepreneurship. Some questions thus remain unanswered. Empirical papers have in many cases drawn inferences on formal legal institutions such as property rights, based on subjective conclusions of firm managers'. In this sense it appears to be the case that current empirical evidence is based on undertheorized institutional metrics.

As Lasagni et al. (2012) note institutional quality is broadly speaking meant to be a "fruitful combination of formal institutions, good rules and practises, cooperation among firms, researchers, and policymakers" (p. 3). To adequately address the effects of institutional weaknesses' in the ongoing interaction between firms' and government it is therefore essential to measure whether the public administration is perceived to be impartial in relations with the rest of society. High impartiality should according to this view thus reduce frictions in such relations, and increase economic opportunities for a broader group of entrepreneurs. The QoG institute offers such an index of impartiality. Teorell (2008) argues that this index indeed provide a better indicator of various societal effects than the more established index offered by World Governance Indicators (WGI).

Finally, if rule of law is a channel through which external factors affects the performance of firms, previous literature appears to systematically fail to address the underlying cause. For instance one reason for countries such as Sweden and the Netherlands' are perceived as having high institutional quality is through its impartial public administration/civil servants that put society's need before personal. More specifically, this paper aims at answering a current blank space in the literature, that is how does an impartial government affect firms' performance?

4. Data and Empirical Methodology

3.1 Data Description

To study the effect of institutional quality on firm performance, I merge aggregate data on institutional quality from The QoG Expert Survey of the university of Gothenburg, with firm-level data from the Enterprise Survey, coordinated by the World Bank. Since this data only covers existing firms I cannot say whether institutional quality will impact firm creation. In this paper I thus focus on how institutions impact existing firms performance. The proxy for institutional quality is the main explanatory variable in the empirical analysis. I moreover take GDP per capita that has been PPP adjusted from Penn World Tables. Finally, estimates of the

share of skilled labour in the economy are taken from the World Bank. After matching aggregate data on institutional quality with firm-level data, and additionally cleansed the dataset (firms that have not reported any figures) the combined sample population include 16,105 firm-level observations, based in 42 developing, and transition economies, in Africa, Asia, Europe and Latin America.

The remaining part of this section briefly discuss the sampling strategy of the QoG Expert Survey and the Enterprise Survey. In order to develop a perception of the underlying institutional quality around the world, The QoG Expert Survey targets scholars in public administration, and ask various questions which aims to detect whether public authorities exercise power impartially. E-mails were sent out to potential respondents, i.e. members in international, and regional organizations of public administration, in three waves between 2008 and 2011, to ask participate in the web based questionnaire. In total 1053 experts participated. The result being data on quality of government from a total of 135 countries. If the expert chose to participate, (s)he would answer questions on the institutional climate in the country of residency, alternatively on a country (s)he have expert knowledge of (Dahlberg et al. 2013).

The Enterprise Survey moreover targets manufacturing firms and retail firm with more than five full-time employees, based in major urban centres. For firms deciding to participate the survey was conducted as face-to-face interviews with senior management, accountants or human recourses manager, and other relevant company staff. The survey ask generally about firm characteristics such as number of employees, and annual sales, but also on the perception of the business climate. For instance, access to finance, quality of transportation, business-government relations among other things (World Bank's Enterprise Survey, 2007).

As always some caveats follows. When it comes to responses by participating firms there is always going to be some concern regarding the accuracy of the financial figures. For instance, a small firm may not keep books. Some other concern may also include that the majority of respondents of the QoG Expert Survey are based in countries such as Sweden and USA rather than emerging economies of more importance for this study. A consequence also being that the number of countries in this paper are fewer resulting in a smaller sample.

3.2 Dependent Variables

In this section I discuss the two proxies for firm performance that are used in this study, namely *employment growth*, and *productivity*. They are all derived from responses given by managers in the Enterprise Survey on firms' total number of sales, and number of employees. These

proxies have in addition been used, and recognized by the literature in previous work. Financial figures are given in PPP adjusted US dollars derived from adjusted exchange rates averages in 2009, collected from Penn World Tables. I also present descriptive statistics.

The rate of *employment growth* is calculated for every firm as $((\text{Total number of Employees in 2009} - \text{Total Number of Employees in 2006}) / \text{Total Number of Employees 2009})$ if the firm was surveyed in 2009. Similarly if the firm was surveyed in 2006, the growth rate was calculated as $((\text{Total number of Employees in 2006} - \text{Total Number of Employees in 2003}) / \text{Total Number of Employees 2006})$. The single most important motivation for investigating the relationship between institutional quality and employment growth is because the literature shows that job creation is one of the central contributions of entrepreneurship to economic growth (Bowen et al. 2007). As seen in table 1, the mean growth rate in the sample was 11%, and the average firm had 48 employees. Firms that had negative or positive growth rates of more than 100 percentages point in the three-year period were removed from the population in the initial analysis to allow estimates to become more precise. Although businesses constantly change, volatility of this magnitude are removed from the sample. Some hundred observations are dropped in this procedure.

A well-established definition suggests that the ratio between output, and input provides an estimate of *firm productivity*. I therefore use total sales as an estimate of the output, and the number of employees as an estimate for inputs. That is, $\text{productivity} = (\text{Total Revenues} / \text{Total number of employees})$. Since I do not have access to data on the available capital of each firm I have to take out this from the input side of the ratio. Therefore, my approximation of productivity is more likely to be a better fit for firms in the service sector than for manufacturers, who should have a considerable amount of capital that additionally impact productivity. To better fit the data I moreover use the logged term of the productivity ratio. The theoretical literature frequently predicts that better institutions will influence entrepreneurs to direct their ventures towards becoming more productive (Baumol, 1990), Vishny et al. (1993). Table I shows that the mean productivity in the sample is 60,309 dollar per employee. To make the sample somewhat more homogenous, I drop firms' in the extremes, reporting revenues larger than USD 15,000,000 or below USD 1,000. This also reduced the sample with a few hundred firms. The standard deviation is however very large, suggesting that the variation of productivity within the population still is very high.

Some of the problems occurring using my definition of productivity, is first and foremost that my dataset consists of firms that produce manufactured goods, as well as service firms that do not. The productivity ratio are therefore likely to be biased towards service firms, since manufacturers are likely to be using more capital that additionally would impact productivity. In other words, other metrics may represent better indicators of firm performance.

3.3 Control variables

This section discusses the independent variables and present descriptive statistics. Since previous studies often also rely on firm-level data from surveys conducted by the World Bank, I end up using similar controls, with some variation due to available data. The main difference being new firm-level observations collected through The Enterprise Study, rather than the World Business Environment Survey (WBES) or the Investment Climate Survey (ICS). I also use a new proxy of institutional quality from the QoG Expert Survey. The QoG Expert Survey results in an *index of impartiality*, which aims at measuring to what extent government institutions exercise their power impartially. This view of institutional quality is the main explanatory variable in the study.

More specifically, Rothstein et al. (2008) defines the impartiality norm which this index aims at catching as “when implementing laws and policies, government officials shall not take into consideration anything about the citizen/case that is not beforehand stipulated in the policy or the law” (p. 170). It is moreover based on the responses of scholars in public administration participating in the survey. Responses on the following items in the survey are taken into account; 1) whether firms providing the most favourable kickbacks to senior officials are awarded public procurement in contract in favour of firms making the lowest bid, 2) whether public sector employees treat some groups in society unfair, when deciding how to implement policies in individual cases, 3) whether public sector employees favour applicants with which they have strong personal contacts when granting licenses to firms, 4) whether public sector employees consistently act impartially when deciding how to implement a policy in an individual case, and 5) whether when a typical public sector employee is to distribute 1000 USD to a project, that amount actually reach the proposed project. The index is constructed by adding each item, weighted by the variability of the responses, upon calculating mean values of all experts within the country (Dahlberg et al. 2012). The index measures between -2.0 and 2.0, where 2.0 is the highest. The population mean is fairly low at -0.38. Similarly to previous work I assume “institutional quality” to be constant, as institutions tend to change slowly over time (Nilsson et al. 2014).

To moreover capture the environment in which firms work, I additionally use country-level controls on GDP per capita, and share of skilled labour. *GDP per capita* can be seen as a proxy for economic development, market size, and the general productivity in the country. Secondly, I also use the *share of skilled worker* as a proxy for human capital. This measures the part of the population that is involved in tertiary education five years after finishing secondary education (i.e. high school). Tertiary education is more specifically referring to undergraduate studies at the university, or other formal training for a profession. Svejnar (2011) in particular shows its association with firm performance. This represent a reflection of the available workforce for firms, where more education can be understood as a more productive workforce. The GDP per capita population mean is below USD 10 000, but again variation within the population is large with countries as different as Czech Republic, and Malawi. The mean share of students going on to tertiary is one in three in the sample.

I moreover control for the following firm-level variables firm size, firm age, management experience, foreign ownership, exporting, and sector. Shinkle et al. (2010) note that *firm size* “may be indicative of market power, slack capability, market credibility, and scale economies” (p. 271). Size simply measures the number of people a firm employs. *Firm age* similarly has been widely used and is an accepted control in the literature in determining firm performance, and is measured as the number of years the firm has been operating. It has been argued that the age of the firm provide information on experience and skills that can only be developed over time, refined routines, ability to adapt over time, and not least market credibility (Ward et al. 2010). *Management experience* moreover refers to the number of years the top manager has in the industry the firm is working in which can be seen as a proxy for internal human capital. Foreign ownership has furthermore been shown to have a positive impact on firm performance. As suggested earlier, this may be because foreign investors chose to invest in what they perceive as competent and talented firms. More specifically thus, *foreign ownership* may be an indicator of the in-house talent a firm possess Hallward-Dreimeier et al. (2006). Finally, Kraay (1999) argues that firms who are *exporting* are more likely to be more productive than firms who are not. Foreign ownership, exporting, and sector are all binary variable indicating if the firm is foreign owned, exporting or if the firm is a manufacturer, or a service firm. Table 1 however shows how many percentages of firms’ that are foreign owned, and how much of total sales that firms’ export.

Table I: Descriptive Statistics

Variable	Obs	Mean	SD
Productivity	15,568	60,309.31	116,005
Employment Growth	15,568	0.11	0.33
Impartiality	15,568	-0.36	0.48
Firm Size	15,568	47.86	340.60
Firm Age	15,447	18.38	14.92
Manager Experience	15,241	18.92	11.09
Foreign Owner	15,139	6.49	23.66
Export	15,555	5.77	19.38
Human Capital	15,568	33.26	17.57
GDP per Capita	15,568	7354.81	4581.04

Notes: The table present means and standard deviation for the sample population after taking away firms that have revenues above USD15,000,000 and below USD 1,000.

3.4 Empirical Specification

To examine the effect of institutional quality on firm performance, I use the following baseline regression:

$$Y_{it} = \beta_1 + \beta_2 IQ_i + \beta_3 FS_{it} + \beta_4 CS_{it} + \beta_5 Year + \varepsilon_{it},$$

where Y_{it} represents firm performance in country i , in time period t . β_1 is the intercept of the model. IQ is the proxy of institutional quality in country i . FS refers to firm level controls and, CS refers to country-level controls. Finally, ε_{it} is the error term in county i , and time period t . Firms were surveyed in 2006, and 2009 respectively and this is represented by a year dummy. I assume institutional quality to be fixed, and use ordinary least squares (OLS) to empirically estimate the above relationship. Since OLS assumes that residuals are independent, I also adjust the standard errors for potential within-cluster correlations, using the clustered standard error option, as one may assume that there are similarities within countries (clusters), but differences between countries. More specifically, similarities within countries, may take the form of differences in e.g. prices on materials, and cost of labour. Prices and costs may however differ in a second country. In addressing this I hope to avoid biased standard errors. That is, I use robust standard errors clustered by country.

5. Results

4.1 Preliminary Analysis

I first examine whether there exists a linear relationship between productivity/employment growth and a government that exercise its power impartially (institutional quality). According to the first graph there does not appear to exist a clear linear relationship between firms' growth rates and better institutions. The second graph similarly shows that there does not seem to exist a clear linear relationship between the productivity of firms and better institutions. The graphs in other words potentially confirms that numerous internal and external factors affects the performance of firms beyond institutions. Other factors thus appear to be more important when predicting productivity and growth of firms.

It can also be seen that it appears to be the case that several firms performs very well, with productivity scores around USD 2,000,000. Take into account that I remove firms whose revenues are higher than USD 15,000,000 in the initial regressions. Some firms may of course be extremely successful but these high scores can also be a consequence of Penn World Tables takes each country's official exchange rate to the dollar, seems to be deviating from the actual exchange rate (e.g. Azerbaijan and Venezuela). At a first stage of the analysis I am however looking for a large sample, allowing for more generalizable inferences. Another explanation may be that firms' intentionally report incorrect figures, that makes these firms look good from a financial point of view.

Figure I: Relationship between firm growth and institutional quality

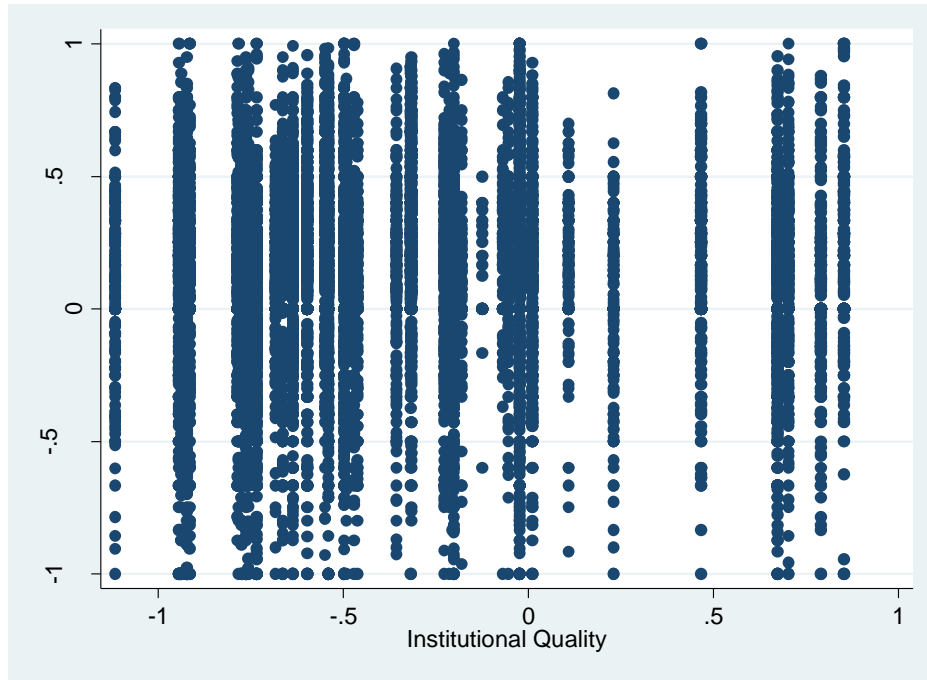
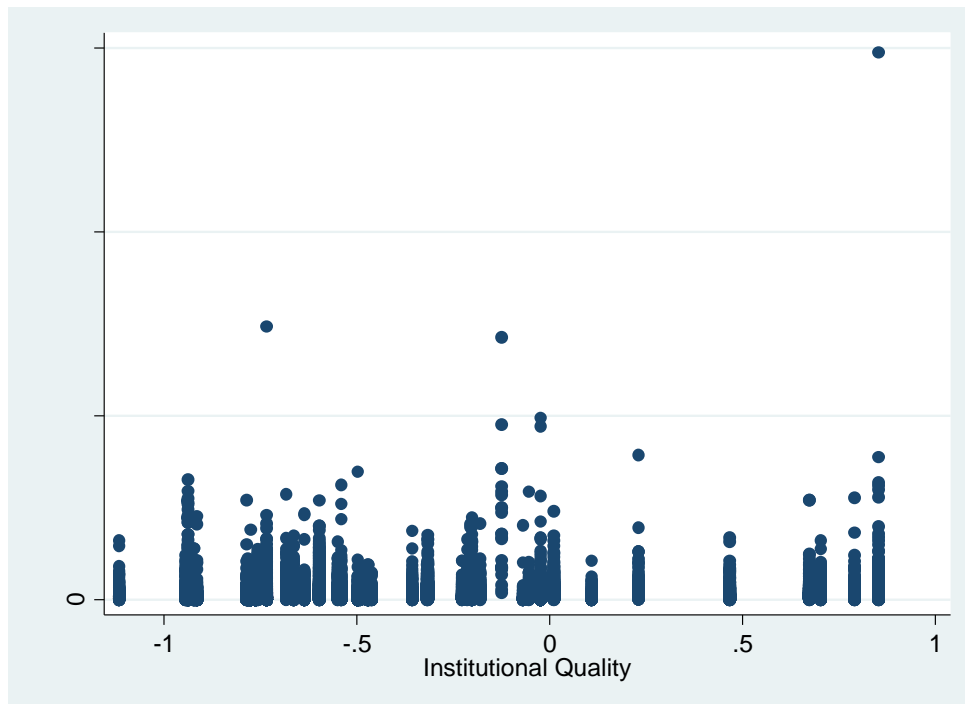


Figure II. Relationship between productivity and institutional quality



4.2 Baseline Results

Firm productivity: I first regress models using productivity as the dependent variable. As previously established, productivity is here defined as revenue per employee. I also use the logged term of productivity. Table II, shows that the F-test is significant implying that the

model do have explanatory power. It moreover suggests that the effect of government institutions exercising its power impartially is positively associated with higher firm-level productivity. When more determinants are included in the model, such as firm size, and market size, the estimates of this effect becomes more precise, with smaller standard errors. The first column shows that there seems to be a relationship between firm-level productivity and institutional quality. More specifically, a 0.1 increase in the quality of government index increases firm-level productivity by roughly 0.47 USD per employee, holding other estimators constant. This result is significant at the 5 percent-level.

The second column includes firm-level determinants of performance. This column further supports the view that institutions do matter for entrepreneurs. However, in explaining performance it appears to be the case that the effect on productivity is greater if the firm export its goods and services overseas. According to the proxy of productivity that I use, manufacturers additionally seem to be less productive than service firms, is in line with previous suggestions that this measure will be biased towards service firms. The results also emphasise the importance of internal factors firms to explain performance. For example, it is important to have an experienced top manager, but on the other hand firms become less productive when they grow bigger.

In the third column, I add country-specific determinants of firm performance. No statistically significant relationship between an impartial government, and productivity is now found. On the other hand, to determine revenue per employee it seems to be important that firms have access to a better educated workforce, and work in stronger economies. It also appears to be important to have international connections. Exporting overseas, and having international owners in other words enhance productivity. I also run a VIF test to make sure that the models do not suffer from collinearity. This test confirms that variables in the regressions are not multicorrelated with values below 10.

Overall, the results in Table II are somewhat ambiguous not least since standard errors are found to be relatively large, resulting in less precise estimates. Nonetheless, the estimates in column one and two do represent a tentative indication that results are in line with the hypothesis that higher institutional quality will impact firm performance positively. This effect is however relatively small per employee.

Table II

Variables	(1) Productivity (logged)	(2) Productivity (logged)	(3) Productivity (logged)
Impartiality	0.472* (0.19)	0.412* (0.14)	0.180 (0.14)
Year Dummy	0.510* (0.26)	0.552* (0.23)	0.727** (0.22)
Firm Size(logged)		-0.152** (0.06)	-0.152** (0.06)
Firm Age		0.003 (0.00)	0.004 (0.00)
Firm Age^2		-0.000 (0.00)	-0.000 (0.00)
Manager Experience		0.007** (0.00)	0.006* (0.00)
Foreign Dummy		0.174 (0.11)	0.384** (0.12)
Export Dummy		0.586*** (0.10)	0.435*** (0.07)
Industry Dummy		-0.706*** (0.15)	-0.618*** (0.12)
GDP per capita (logged)			0.095* (0.04)
Human Capital			0.022*** (0.00)
Constant	10.051*** (0.23)	10.560*** (0.27)	8.840*** (0.57)
Observations	15 567	15 132	15 132
F-test (p-value)	0.02	0.00	0.00
Adj. R-squared	0.054	0.126	0.206

Clustered (by country) standard errors in parentheses

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

Firm Growth: I also regress models on employment growth, i.e. do firms' create new jobs. Table III shows that if government institutions exercise its power impartially, this appears to have a positive effect on employment growth. With relatively small standard errors, estimates also appears to be precise across the three models. However, the goodness of fit is considerably smaller in the models of employment growth relative to previous models on productivity. Column 1 shows that a 0.1 increase in institutional quality increases the firms employment growth rate by roughly 0.01 percentages points.

In Column two, and column three firm-level as well as country-level determinants are included in table II. In column two, the number of observations reduces almost by half. I have not found an explanation for the occurrence of this. Including more explanatory variables obviously

allows the goodness of fit to increase in these models, and institutional quality remains significant. There thus seems to exist a relationship between an impartial government and employment growth rates. More specifically, a 0.1 increase in the index of institutional quality increases the growth rate between, 0.02 and 0.04 percentage points, holding all other variables constant. Column three furthermore sheds light on the importance of the business environment in which firms operate in for growth rates. A more educated share of the population that attends tertiary schooling interestingly appears to be negatively associated with firm growth. This may be a consequence of the fact that potential employees postpone labour market entry to invest in skills. Again, I also run a VIF test to make sure that the models do not suffer from collinearity. The test confirms that variables in the regressions are not multicorrelated with values below 10.

In line with the hypothesis that institutional quality impacts the performance of firms, the models in table III also indicate that better performing institutions will affect firm-level employment growth. Again, however, the results suggests that other firm-level, and country-level determinants (not surprisingly) appears to be just as important.

Table III

Variables	(1) Employment growth	(2) Employment growth	(3) Employment growth
Impartiality	0.015** (0.01)	0.040** (0.02)	0.026*** (0.01)
Year Dummy	0.035*** (0.01)	0.095*** (0.02)	0.051*** (0.01)
Firm Size (logged)		-0.094*** (0.01)	0.034*** (0.00)
Firm Age		-0.009*** (0.00)	-0.004*** (0.00)
Firm Age ²		0.000*** (0.00)	0.000*** (0.00)
Manager Experience		0.000 (0.00)	-0.001* (0.00)
Foreign Dummy		-0.015 (0.03)	-0.010 (0.01)
Export Dummy		0.044* (0.02)	0.017* (0.01)
Industry Dummy		0.047** (0.02)	-0.030*** (0.01)
GDP per capita (logged)			0.030*** (0.00)
Human Capital			-0.001*** (0.00)
Constant	0.099*** (0.00)	-0.816*** (0.03)	-0.060 (0.02)

Observations	15 567	8 294	15 132
F-test (p-value)	0.00	0.00	0.00
Adj. R-squared	0.004	0.068	0.043

Clustered (by country) standard errors in parentheses

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

4.3 Sensitivity Analysis and Robustness Check

This section intends to control the strength of the baseline results. I do this through a sensitivity analysis in which I remove obvious outliers from the models. I also use a second metric of productivity.

Sensitivity test: To address the heterogeneity in productivity among firms I run additional regressions where I reduce the number of observations further. More specifically, I now drop firms in the sample with productivity scores below 10,000 dollars per employee, and above 100,000 dollars per employee. This allows me to run regressions consisting of more homogenously performing firms, that moreover takes us closer to the average firm in this sample. Obvious outliers (see preliminary analysis) that in some cases have productivity levels that appears to be too good to be true are removed. In other words if productivity scores in the baseline results were reported incorrect, these are now excluded from the analysis.

Columns 1-3 in table IV shows the regressions of the reduced sample. Adjusted R-squared values are consequently lower. The F-test again establish that the models do have explanatory power. In addition, estimates of government institution's effect on the performance of firms also appears to be more precise reflected by the lower standard errors, in these regressions (0.04 compared to 0.15 approximately). Most importantly is that a government that exercise its power more impartially has a positive effect on the productivity of firms. The effect appears to be smaller than in previous regressions as suggested by the lower values of the coefficients, but are nonetheless significant in all models (estimates on about 0.10 compared to about 0.40). More specifically, a 0.01 change in the institutional quality index increases productivity with roughly 0.10 dollar per employee, holding all other variables constant. Overall, the reduced form regressions are in line with the hypothesis that institutions matters for the performance of firms.

In addition, I exclude firm size outliers to control the sensitivity of the results on employment growth. I exclude 34 outliers with more than 5,0000 employees in these regressions. Column

3 and 4 in table IV shows that the results are in line with the hypothesis that a government exercising its power impartially has a positive influence on firm growth rates. In other words the results do not change when excluding outliers.

Table IV

Variable	(1)	(2)	(3)	(4)
	Productivity (logged)	Productivity (logged)	Employment Growth	Employment Growth
Impartiality	0.123** (0.04)	0.077* (0.03)	0.038* (0.02)	0.026*** (0.01)
Year Dummy	0.021 (0.05)	0.079 (0.04)	0.096*** (0.02)	0.051*** (0.01)
Firm Size (logged)	-0.016 (0.01)	-0.022 (0.01)	-0.113*** (0.01)	0.032*** (0.00)
Firm Age	0.001 (0.00)	0.002 (0.00)	-0.009*** (0.00)	-0.004*** (0.00)
Firm Age ²	0.000 (0.00)	-0.000 (0.00)	0.000*** (0.00)	0.000*** (0.00)
Manager Experience	0.003* (0.00)	0.002* (0.00)	-0.001 (0.00)	-0.001*** (0.00)
Foreign Dummy	0.010 (0.02)	0.077** (0.03)	0.000 (0.03)	-0.005 (0.01)
Export Dummy	0.206*** (0.04)	0.175*** (0.04)	0.043* (0.02)	0.020* (0.01)
Industry Dummy	-0.151*** (0.02)	-0.143*** (0.02)	0.050** (0.02)	-0.030*** (0.01)
GDP per capita (logged)		0.018 (0.04)		0.008** (0.00)
Human Capital		0.006*** (0.00)		-0.001*** (0.00)
Constant	10.448***	10.056***	-0.856***	0.068**

	(0.06)	(0.29)	(0.03)	(0.02)
Observations	9 178	9 178	8 163	14 664
F-test (p-value)	0.01	0.01	0.00	0.00
Adj. R-squared	0.0041	0.068	0.067	0.042

Clustered (by country) standard errors in parentheses

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

Additional dependent variable: To check whether the significant results of productivity remains the same more generally, I also use a different but similar metric of productivity. Here productivity = sales revenue/cost of labour = output/input. To the best of my knowledge this metric has not previously been used as a proxy within this research stream. According to the summary statistics the sample mean of this view of productivity is 0.52 dollar/costs of labour, and the standard deviation is 1.56. To better fit the data I once again use the natural logarithm of productivity. Since standard deviation is relatively small, I use as many firm observations as possible. In these regressions I use all the available variables, including outliers.

Table V shows the results of the second view of productivity. The relationship between institutional quality and firm productivity remains significant. Better institutions are in others positively associated with higher productivity of firms. A 0.01 increase in the index of institutional quality from the Quality of Government Institute, increases revenues with about 0.65 per invested dollar in labour. The effect of better institutions thus appears to be somewhat stronger on firm-level productivity according to this proxy (previous b-coefficients of productivity found in the baseline results are between 0.18 and 0.47 revenues per dollar). These results are significant at the 10 % level.

Table V

Variable	(1) Productivity (logged)	(2) Productivity (logged)	(3) Productivity (logged)
Impartiality	0.686* (0.41)	0.713* (0.42)	0.642* (0.36)
Year Dummy	-0.08 (0.43)	-0.113 (0.43)	-0.275 (0.49)
Firm Size (logged)		0.049 (0.05)	0.049 (0.05)
Firm Age		-0.001 (0.00)	-0.001 (0.00)

Firm Age ²		0.000	0.000
		(0.00)	(0.00)
Manager Experience		-0.002	-0.001
		(0.00)	(0.00)
Foreign Dummy		-0.298*	-0.359*
		(0.12)	(0.15)
Export Dummy		0.089	0.137
		(0.08)	(0.11)
Industry Dummy		0.226**	0.184*
		(0.07)	(0.08)
GDP per capita (logged)			0.356
			(0.26)
Human Capital			-0.017
			(0.01)
Constant	-1.484***	1.689***	-4.151*
	(0.19)	(0.19)	(1.75)
Observations	16 092	15 564	15 564
F-test (p-value)	0.13	0.00	0.00
Adj. R-squared	0.04	0.050	0.067

Clustered (by country) Standard Errors in Parentheses

* p<0.1, ** p<0.05, *** p<0.01

6. Concluding Discussion

This is the first paper that studies the effect of a government that exercise its power impartially on firm-level performance. In comparison to other studies within this research stream, this view of institutional quality provides a theoretical clarification on the underlying cause to why some government institutions are better than others. In practise this means that I deviate from previous research's focus on property rights, as the natural proxy for institutional quality, and the propensity to base these results on business leader's subjective perception of government institutions more generally.

According to theory institutional quality will increase economic opportunities, also resulting in firms' performing better. In line with existing literature I assume that the channels for these effects are found in ongoing firm-government relationships, such as public investments in entrepreneurial, and research ventures among other dealings, that reduce friction in these interactions. I moreover draw inferences with data from the Quality of Government Institute on institutional quality, and firm-level data from the Enterprise Survey, collected by the World Bank. I have access to a total of 16,105 firms' in 42 developing and transition economies. The subsequent empirical tests shows that public authorities exercising its power impartially, indeed has a positive impact on firm productivity and growth.

The results seem to suggest that the theoretical literature tends to overemphasise institutions influence on the performance of the individual firm. Although institutional obstacles constrain firms, they can be worked around in various ways, for example by paying a bribe to the right official in order to get an importing/exporting license. Alternatively, by being incorporated in firms' decision-making processes. The aggregate effects of poor institutions do nonetheless appear to be more substantive. Better institutions potentially help foster economic growth through increased firm productivity, and through increased demand as firms becomes more likely to invest in new jobs. In this sense my empirical results are in line with the argument of this research stream. That is, institutions do have a real effect on the aggregate performance of economies through its small but positive impact on firms.

The overall interpretation of the results should however be interpreted with caution, not least by the relative simplicity of the empirical specification. A more sophisticated approach would be to specify various hierarchical models, that specifically take into account that firms are clustered into countries and industries. The index from the QoG Expert Survey on impartiality for some countries are moreover based on the mean value on the perception of the quality of government institutions by as few as three scholars. It would be desirable to have more scholars responding to the QoG Expert Survey in order to draw more accurate inferences.

Productivity, the dependent variable, also suffers from not including capital utilization on the input side which makes it harder to measure the productivity of manufacturers. As soon as one deviates from the assembly line productivity becomes harder to measure. How productive are doctors or engineers, and other people performing creative tasks? In other words I wish to emphasise that the performance metrics, are approximations and may not entirely capture actual performance levels. Further limitations also include the relative imprecise estimates in some models on productivity. The control variables can additionally not be seen as perfect. In particular, internal factors such as the talent, and motivation of a small group of in-house workforce may be more important to determine the performance of a firm than just size and age.

The conclusion that higher institutional quality fosters job creation, and productivity is tentative in nature. Nonetheless the OLS regressions in this paper provide an indication of the positive impact better institutions do have on the performance of firms in their daily operations. Many

questions also remain open for future research. For example, how do institutions influence corporate behaviour?

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