THE SOCIAL IMPACT OF BUSINESS REGISTRATION COSTS

Christine Ferris

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ABSTRACT: Since the publication of the World Bank's first Doing Business project, the licensing and registration costs required to start a business have fallen drastically, particularly in developing countries. There is an existing body of research that seeks to explain to relationship between regulatory barriers to formalization, but no research that examines the cost alone and the distinct effects for varying levels of economic development. Using 10 years of data from the Doing Business project, this thesis uses fixed effects to examine the relationship between the cost of licensing, measured in relation to local per capita income, and various measures of social benefits: GDP per capita growth rates, natural log of GDP per capita, poverty rates, and income inequality. My results suggest that higher costs are significantly and negatively correlated with GDP per capita, and significantly and positively correlated with poverty rates and the Gini index. I find no statistically significant effect on GDP per capita growth rates. Furthermore, the effect of cost varies between OECD and Non-OECD countries, and there is a statistically significant different effect of cost in highly corrupt economies.

Introduction

Since the World Bank's *Doing Business Report* was first released in 2004, there has been a large increase in the amount of research examining the relationship between regulatory burdens and various measures of economic output, entrepreneurship, and market entry. Most of the research, however, has focused on indices that combine various measures of regulation, which are thought to establish barriers to the creation new firms and create an environment for government officials to extract rents. These regulations have been found to be particularly important in the areas of firm creation, job creation, and levels of productivity (Ayyagari 2014, Boedo and Mukoyama 2012, Divangbeigi and Ramalho 2015, Haidar 2009 and 2012 van Stel, Storey, and Thurik 2007), all important areas in for the study of economic development.

This thesis seeks to examine the effects of a single measure of regulation: the cost of licensing and registration on various measures of social benefit: the growth rate of GDP per capita, the natural log of GDP per capita, poverty rates, and the Gini index. By focusing on these four measures, I hope to gain a better idea of where the social benefits (or costs) of reducing one type of barrier to entry are going. It is possible, for example, that poverty rates and inequality could decrease, but there is no overall effect on GDP per capita growth rates, suggesting the benefits of cost reduction are going to those at the lower end of the income distribution. Furthermore, this analysis will separately examine the effects of registration cost in OECD and Non-OECD countries to better understand how the effects vary across levels of development.

Background

In 2002, Djanjov et al. embarked on a cross-country study that sought to explain why some countries maintained greater regulation around the creation of new, formal firms. Several years later, the project evolved in the World Bank's Doing Business project, which now spans across nearly 200 economies and covers eleven topics related to the overall business climate. After over a decade of data collection and hundreds of reforms aimed at improving the ease of starting a business (*Doing Business*, 2016), there is limited research on the effects of the reforms targeting the cost of registration only.

In the first 10 years of publication, the average worldwide cost of licensing or registration fell from 121% of income per capita to 34% (*Doing Business*, 2013). The variable itself is a composite of the flat cost, measured in local currency, divided by income per capital (total national income divided by the population). The variation in the composite variable is driven largely by a reduction in the flat cost (see Appendix Table 10 for details). Since the beginning of data collection and publication, 122 economies have implemented 231 reforms in the areas measured, and most reforms were made in low-income countries (*Doing Business*, 2016). Reforms include the creation and implementation of "one-stop-shops" to complete registration and licensing requirements and reduce the regulatory burdens around permits.

Literature Review

Entrepreneurship's function, as defined by Schumpeter (1950) is "to reform or revolutionize the pattern of production by exploring an invention or untried technological possibility… or producing a new commodity or producing an old one in a new way." Since then, research on the importance of entrepreneurship has developed. Van Stel, Carree, and Thurik (2005) suggest the role of entrepreneurship differs across levels of economic development. They find total entrepreneurial activity has a positive effect on GDP growth in rich countries, whereas it has a negative effect on GDP growth in poor countries. They believe having fewer, more productive firms could lead an economy from developing to industrialized, and therefore policies would be better to focus on efficiency and productivity gains vs. overall entrepreneurial activity. La Porta and Shleifer (2008), find similar evidence regarding entrepreneurship and informality. They note the informal sector is very large in developing countries, has lower levels of productivity, and is run by individuals with lower levels of human capital. As nations develop, however, their informal sectors decrease in size as formalization becomes more profitable for firms as levels of productivity increase.

However, not all entrepreneurial activity is the same. Schoar (2010) differentiates between transformational and subsistence entrepreneurs. Transformational entrepreneurs are those individuals that seek to grow a business beyond subsistence-level needs, whereas subsistence entrepreneurs engage in economic activity solely as a means to provide themselves with subsistence-level income. Her research shows very few individuals transition from subsistence entrepreneurs to transformational entrepreneurs, and both respond very differently to policies targeting entrepreneurship. She notes that

developing economies have a larger portion of smaller firms with fewer middle and large-sized firms. She notes that tighter labor and market entry regulations impede business growth, thus keeping firms smaller and less productive than in developed economies. Additionally, she suggests microfinance has added little to job creation, as most recipients are subsistence entrepreneurs who infrequently become transformational entrepreneurs. Focusing on microfinance, then, will likely have a limited effect on overall per capita growth because most microfinance recipients that stay close to subsistence-level rarely ever increase productivity.

Other important areas of research focus on the decision to formalize. La Porta and Shleifer (2008) highlight the three most common explanations for firms remaining informal: the romantic view, the parasite view, and the dual view. The first view they discuss is the "romantic view", which is based off the work of De Soto (1989, 2000), and believes productivity differences between formal and informal firms are due to unnecessary regulations, taxes and lack of access to finance. The "parasite view", however, believes that firms choose to stay small to avoid taxes and regulations and offer cheaper prices than formal firms. The authors, however, find evidence in support of the "dual view": that informal firms are inefficient, use inferior inputs, and have no access to finance or public goods and therefore stay informal. Nonetheless, Farrell (2004) finds evidence of the parasite view. The resulting cost advantage allows informal firms to maintain a market share and keep more efficient, formal firms from increasing their market share. This implies that most informal firms choose to stay informal to maximize profits, given regulations and institutions.

Other research finds that firms do formalize when regulations decrease. Mullainathan and Schnabl (2010) address the question of whether or not lowering the licensing procedure in Lima, Peru had an impact on entrepreneurial activity. The authors believe this reform represents many of the reforms nations have been implementing over the past decade. After a 60% reduction in the number of days to receive a license and 40% reduction in cost, the number of newly licensed firms increased from 1,758 to 8,517 the following year. Seventy-five percent of the new firms were operating informally before the reform. In their firm-level surveys, the most common reason for formalization was to avoid paying bribery and fines. This evidence supports the “parasite view” as firms will seek to maximize profits and decide to formalize accordingly.

In another study, de Mel, McKenzie and Woodruff (2012) conducted a field experiment among Sri Lankan informal firms. They offered to reimburse firms the cost of formalization and saw no impact on decisions to formalize. They then paid firms to formalize, initially one half of one month’s profit (of the median firm) and saw 20% of firms formalize. When they increased their compensation to two month’s full profit, 50% of firms formalized. Several months after formalization, a few firms saw a large increase in profits while most saw little to no increase. The authors propose that firms stayed informal because of the expected future taxes and fees. High taxes and fees would decrease profits after formalization, which could explain why only a few firms saw increased profits. Perry (2007) supports de Mel’s findings that firms will make the decision to formalize just as they would any decision, based on profit maximization. If the costs of registration and future tax payments are too high, small firms opt to stay informal and thus inefficient, slowing economic growth. Henrique de Adrade, Bruhn, and

McKenzie (2014) again find no evidence that firms will formalize when free registration costs are offered in an experiment in Belo Horizante, Brazil. Only firms that were forced to formalize did so, and the authors conclude that registration offers firms little to no benefits.

While firms to seek to maximize profits, they must make decisions according to the market in which they operate. For example, high levels of corruption are associated with higher levels of informality because public officials rent seek and accept bribes to avoid the excess costs. Djankov, La Porta, Lopez-de-Silanes, and Schleifer (2002) find such results. They also find stricter regulations are correlated with poorer quality products, poorer pollution records, poorer health outcomes, and less competition between firms. They find less democratic countries have higher levels of regulations and believe the primary beneficiaries of high regulation are politicians and bureaucrats who can rent seek. Djankov (2009) offers additional explanation on possible motivations for high regulation by distinguishing the Capture Theory from the Tollbooth theory. The Capture Theory explains high registration costs and barriers to entry as protection for incumbent businesses from new competition. In doing so, profits of existing businesses increase and productivity stays low without competition. The Tollbooth Theory explains high registration costs and barriers to entry exist because they allow officials to collect bribes in return for issuing permits, similar to the explanation in Djankov, La Porta, Lopez-de-Silanes, and Schleifer (2002). Boedo and Mukoyama (2012) find some evidence supporting the Capture Theory. They find high entry costs lower levels of productivity by keeping existing firms (incumbents) inefficiently large. Their research suggests that low-income countries could expect to increase their total factor productivity by 27-34%

(depending on capital adjustments) if they were to reduce their entry and firing costs to those of the United States. Herrendorf (2011) examined the effects of barriers to entry on agricultural and non-agricultural sectors. Employment in agriculture (in the form of subsistence-level farming) has no barriers to entry, whereas “insider groups” such as labor unions and professional associations keep barriers to entry higher in non-agricultural sectors. The authors find evidence that by removing entry barriers in economies with high levels of barriers to entry, it would remove half of the income gap between the distorted (high barriers to entry) and undistorted economies (low barriers to entry).

There is also research around the roles of corruption, institutional quality, and firm density and registration. Klapper, Amit, and Guillen (2008) also find the ease of starting a business and political corruption are statistically significant determinants of total firm registration, controlling for the level of economic development. Furthermore, they find business entry rates and density have a statistically significant relationship with the amount of informal firms in the economy. Other evidence differs. Van Stel, Storey and Thurik (2007) find no correlation between administrative regulations (costs, procedures, and time) require to start a business and the formation rate of nascent or young businesses. Their study included 39 countries, over half of which are OECD.

Chowdhury, Terjesen, and Audretsch (2014) cite the importance of institutional frameworks in a country in determining entrepreneurial activity. They find high levels of property rights are correlated significantly and positively correlated with new firm creation, whereas taxes and regulatory burdens are negatively correlated with new firm creation. Divanbeigi and Ramalho (2015) show similar findings. They find a 10-point

increase in their index score predicts an increase of 0.6 new businesses per 1000 adults in an economy. They find no evidence that higher quality regulations predict any effect on GDP growth. Addanga and Lusadi (2010) find evidence that high levels of regulation are correlated with higher rates of female entrepreneurs and lower rates of individuals with self-reported business knowledge of being entrepreneurs. Autio and Fu (2015) find similar evidence in the importance of economic and political institutions. They note that high quality institutions are positively correlated with the rate of formal entrepreneurship and negatively correlated with the rate of informal entrepreneurship.

Ayyagari (2014) finds evidence that small firms employ the smallest share of individuals in developing economies, however small firms have the fastest growth rate of new job creation and have shown the most *new* job creation. Furthermore, the share of small *and* medium employment is nearly equal to that of large firms. Large firms, however, are more responsible for productivity gains and contributions to economic growth.

Hasan (2007) conducted a study across 30 countries from 1990-1999, most of which were in Asia. The authors created aggregated variables that measure time, costs, and number of procedures to start a business and tested its effects on growth and poverty rates. The index showed a negative and statistically significant effect on growth, meaning as regulation and fees increased, growth rates decreased. However, the effects of the index become insignificant when government expenditures are introduced. They also find that labor-hiring regulations are statistically significant and negative. For example, if Pakistan, which has the highest number of hiring regulations, were to reduce their regulations to the level of Singapore, per capita growth would increase 1.25 percentage

points. Again, when government expenditure is introduced, hiring regulations become insignificant. Hasan also examined the business regulatory index on the poverty rate; he found it to be a statistically significant determinant of poverty. The results suggest that if Cambodia were to reduce the costs of starting a business to those of the US, it would see a 26-percentage-point reduction in the poverty rate.

The research paper will seek to expand on Hasan's dataset to include a more diverse group of countries (186 vs. 30), include more recent data (2004-2013), and examine four indicators of social benefit: GDP per capita growth rates, natural log of GDP per capita, poverty rates, and the Gini index. Furthermore, it will only analyze the cost of registration and licensing, not a composite index of registration regulations, which might include the necessary time in days to register a business and the associated number of procedures. To test these relationships, I will use the World Bank's *Doing Business* data from 2004-2013, which will have ten years of data. This study will also examine the effects of perceived bribery, tax rates, and labor costs, and examine whether countries with high levels of these constraints show differing effects of cost on the measures of social benefit.

Conceptual Framework

Since the World Bank began publishing the *Doing Business Report* annually, the worldwide average cost of registration, measured relative to income per capita has dropped precipitously – from 121.75% in 2003 to 30.54% in 2014 (*Doing Business*, 2014). I hypothesize that the overall decrease in costs will be correlated with various measures of social benefit through increased business activity leading to an increase in formal employment.

Based off previous research, I hypothesize that reducing the cost of business registration should have positive effects on GDP per capita growth rates and the natural log of GDP per capita as well as negative effects on the Gini index and poverty rates. Hasan (2007) provides evidence that composite regulation decreases are correlated with increased levels of GDP per capita growth and lower levels of poverty. This thesis will narrow in on the cost alone, as opposed to an index, and examine 186 economies all over the world, not primarily Asia. The conceptual framework is as follows.

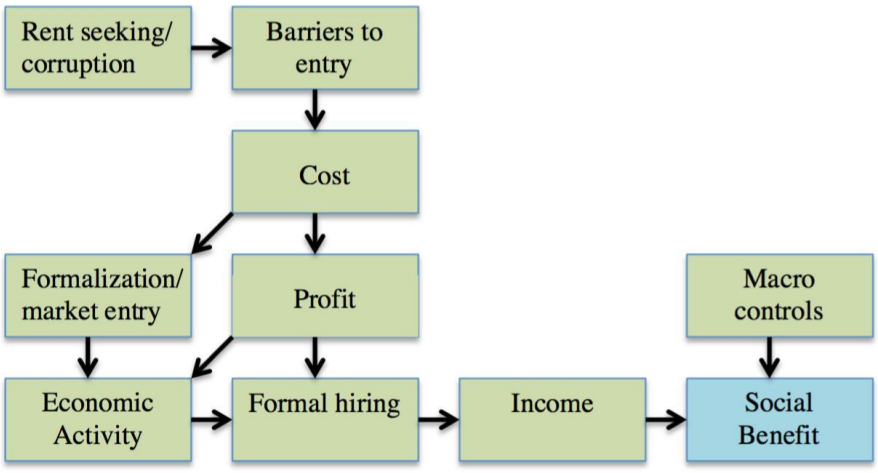

Figure 1 - Conceptual Diagram

The conceptual model illustrates several assumptions that I assume to be true. First, I assume high registration costs are a form of barrier to entry influenced by rent seeking behavior, more so in developing countries. This claim is supported by empirical evidence (Djankov et. al 2000, Djankov 2009, and Herrendorf 2011). I am assuming firms make decisions based on maximizing profits. Formalization or market entry decisions will be just like any others, and firms will decide to stay informal and not pursue licensing if the costs exceed the benefit. I am also assuming licensing leads to increased formal business activity. This assumption should not be too far of a stretch as with formalization comes new firms, increasing the measured level output of the economy. The increase in business activity should come with increased hiring in the formal sector, even if it is only former informal-sector employees. Finally, I am assuming that some of these new workers hired will be from the lower income distribution in an economy, and their increase income will reduce inequality and the poverty rate

Data

My data includes 186 countries over the years 2004-2013. I include all countries captured in the World Bank Doing Business project with the exception of countries with missing other data. North Korea was dropped from the sample due to concerns over the data quality. The full list can be found in Appendix Table 7 along with mean values of dependent variables and the cost variable. The main variables for analysis will be the cost of completing all necessary requirements to register a business and receive an operating license, measured relative to income per capita. The variable is equated as follows:

Cost is kept in decimal form and includes all official fees that are required by law. The World Bank Doing Business project collects data on company laws, commercial codes, and official fee schedules. If these sources are unavailable, a government official's estimates are taken. If this, too, is unavailable, incorporation lawyers' estimates are used, and the median value is reported when there is variation. The variable represents the cost of registration for a domestic company engaging in general industrial or commercial activity within the largest city, that has between 10 and 50 employees, and has start-up capital of 10 times per capita income. Although the data represent a very specific type of industry, it should reflect the regulatory climate of the economy. Most countries have one observation per year, but several large economies have their two largest industrial centers included. In these instances, only the largest city is included so each country has only one observation per year.

The Doing Business project has complete data beginning in 2003, though there are some data prior to that year which will not be included in this study.[1] All GDP per capita growth rates, GDP per capita, inequality and poverty data (for Non-OECD countries) are from the World Bank.[2] Poverty data for developed countries was unavailable from the World Bank. Instead, data for OECD member countries is from the OECD. This measure of poverty is the percentage of the population living below half of the median income.[3] The poverty rate for developing countries is set at the percentage of the population living below $3.10 per day (in 2011 dollars). If data was available from

1 Data can be downloaded at http://www.doingbusiness.org/data
2Data can be downloaded at http://data.worldbank.org/
3Data can be downloaded at https://data.oecd.org/inequality/poverty-rate.htm

both the World Bank and OECD, OECD data are used. The mean values for cost and the measures of social benefit (across all years) are summarized below.

Table1 – Mean Values of Dependent Variables and Cost Variable

Variable	Mean	Standard Deviation
GDPPC Growth Rate	2.5362	5.3481
Log GDPPC	8.1552	1.5778
Poverty Rate	19.6642	22.1551
Gini Index	37.6568	9.0573
Cost	0.5980	1.2960

Overall, there has been a major reduction in the cost of registering a business over the decade that data has been collected. Worldwide, the average cost of registering a business was 121.18% of per capita income in 2003. By 2014, the average was just over 30%. The graph below shows the trend.

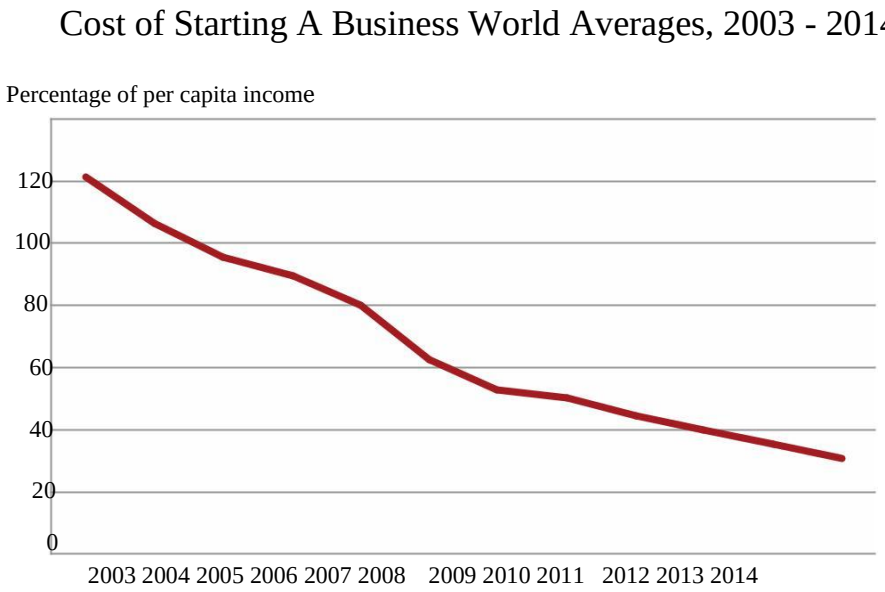

Figure 2 – Cost Trends, 2003 – 2014

I will be using a number of control variables as close to those utilized by Barro (1991) as possible. These variables include the percentage of secondary education

completion across the workforce, fertility rates, and the natural log of population. I was unable to attain data representing the investment to GDP ratio, and instead have opted to use gross capital formation a percentage of GDP, which I refer to as capital accumulation. The final controls are indices of democracy and rule of law. Population, informality, secondary education, and fertility data are all from the World Bank,[4] unless otherwise noted. I include one regression that includes several additional controls for robustness checks. These controls include the initial level of GDP per capita (lagged one year) for growth rates as well as government spending on education and public health as a percentage of GDP. These data are also from the World Bank. A detailed list of control variables from the main regressions follows. Data descriptions come directly from their respective source.

Table 2 – Variable Definitions and Sources

Variable	Description	Source
Poverty - OECD Countries	The percent of the population whose income is below half of the median income	OECD
Poverty - Non-OECD Countries	The percent of the population living on less than $3.10 per day.	World Bank Development Indicators
GDPPC Growth Rate	One year growth rate of gross domestic product, divided by midyear population	World Bank Development Indicators
Log GDPPC	Natural log of gross domestic product, divided by midyear population	World Bank Development Indicators
Gini	The area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line, ranging from 0 (perfect income equality) to 100 (perfect income inequality).	World Bank Development Indicators

[4] Data can be downloaded at http://data.worldbank.org/

Table 2 Continued

Cost	The associated costs and fees to register a business (in local currency) divided by the income per capita (in local currency), in decimal form	World Bank Doing Business Project
Democracy	Perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, originally ranging from approximately -2.5 to 2.5 but rescaled from 0 (lowest) to 1 (highest).	World Bank Development Indicators
Rule of Law	Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, originally ranging from approximately -2.5 to 2.5 but rescaled from 0 (lowest) to 1 (highest).	World Bank Development Indicators
Fertility	The number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates.	World Bank Development Indicators
Log Population	Natural log of the count of all residents regardless of legal status or citizenship	World Bank Development Indicators
Secondary Education	Share of the total labor force that attained or completed secondary education as the highest level of education.	World Bank Development Indicators
Capital Accumulation	Measures outlays on additions to the fixed assets of the economy plus net changes in the level of inventories	World Bank Development Indicators
Terms of Trade	The percentage ratio of the export unit value indexes to the import unit value indexes, measured relative to the base year 2000 (2000=100).	World Bank Development Indicators
Tax Rate Constraint	Percent of firms recognizing tax rates as a major constraint to operations in World Enterprise Surveys	World Enterprise Surveys
Gift to "Get Things Done"	Percent of firms expected to give gifts to public officials "to get things done" in World Enterprise Surveys	World Enterprise Surveys
Labor Cost Constraint	Percent of firms recognizing labor regulations in a major constraint in World Enterprise Surveys	World Enterprise Surveys

Detailed summary statistics can be found in the appendix in Tables 7 – 9. In my sample, 22.5% of countries are OECD countries, and 77.5% are Non-OECD countries. No weights are used.

Empirical Strategy

I use fixed effects to control for omitted variables that do not change over time that could impact the dependent variables. Because the fixed effects method includes high degrees of freedom, there is a concern of high standard errors. To account for this, random effects and OLS results are shown in Appendix Tables 12 and 13.

The relevant coefficients are those on the cost of starting a business, which I expect to differ between the dependent variables. For the poverty rate and Gini index, I expect the coefficient on cost of starting a business to be positive. I anticipate the opposite for GDP per capita and GDP per capita growth rates. The main equations will be as follows. In all equations, the magnitude and significance of the coefficient $_2$ will be of interest.

$$h \quad = {}_{0} \quad + {}_{1} \quad + {}_{2} \quad + = {}_{0} \quad + {}_{1} \quad + {}_{2} \quad + = {}_{0} \quad + {}_{1} \quad + {}_{2} \quad +$$

The four dependent variables were chosen purposefully to understand where the social benefits (or costs) of changing the cost of registration go. For example, if decreasing the cost of registration increases GDP per capita growth rates, Log GDPPC,

and the Gini index without an effect on poverty, there would be reason to believe the social benefits are going to the higher portions of the income distribution. I also review the effects of Non-OECD and OECD countries separately. I anticipate the effects on inequality and poverty to be much stronger in developing countries, as developed countries have more targeted, public anti-poverty programs that account for the changes in poverty. Furthermore, developed economies tend to have lower levels of informality and new firm creation is much less likely to be the result of informal firms formalizing.

In addition to my main regressions, I include several auxiliary regressions to gain additional insight. I use data from the World Enterprise Surveys to examine the perceived effects of tax rate and labor regulation constraints as well as the effects of the expectation of gifts to "get things done"[5] when meeting with a government official. The data are from firm-level surveys using stratified, random sampling, with replacement.[6] I create a binary variable equal to one if a country's observation falls in the top quartile of the percentage of firms recognizing tax rates as a major constraint, labor costs and regulations as a major constraint, or recognizing a need to give a gift to "get things done" when meeting with an official. I then interact the binary variable with the cost variable to determine if there are differing effects for countries whose firms are experience comparatively high levels of tax rates, labor costs, or bribery. I include the same controls as my main regression, however I use a pooled OLS model because of the limited number of observations with complete data. I use the same dependent variables, however, I examine the significance of $_4$ as well as an F test for joint significance of $_2$, $_3$, and $_4$. The models for tax rate

5Questionnaire can be downloaded at https://www.enterprisesurveys.org/~/media/GIAWB/EnterpriseSurveys/Documents/Methodology/ES_Manufacturing_Questionnaire.pdf
6Questionnaire can be downloaded at https://www.enterprisesurveys.org/~/media/GIAWB/EnterpriseSurveys/Documents/Methodology/ES_Manufacturing_Questionnaire.pdf

constraints are below, and identical in specification for labor regulation constraints and bribery expectations.

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Measurement error in the dependent variable remains a concern. Because the cost variable is *de jure*, there is concern that it may not reflect the actual business climate (Hallward-Driemier, Pritchett 2015). For example, costs may be much lower, if an individual can just pay the official half of the cost and then receive a license. High licensing costs, then, would not actually impede firm creation. To check the validity of the data, I compared them with the firm responses in from the World Enterprise surveys. Costs and the percentage of firms recognizing licensing procedures to be a major constraint are highly correlated. An additional percentage point increase of respondents indicating licensing to be a major constraint predicts a 0.38 percentage point increase in cost.[7]

Results

The main regression utilizes fixed effects to eliminate fixed unobserved variables. Random effects and OLS results are also included in the appendix, however their

[7] P-value=0.000

estimators may be biased due to omitted, fixed variables. Their estimated effects support those in the fixed effects model, with the exception of the effect of cost on growth with is positive in random effects and OLS, although none are statistically significant. All results include robust standard errors. Main regression results are broken down between all countries, OECD countries, and Non-OECD countries. This is done for several reasons. First, the poverty variable is measured differently for these two groups, which could bias estimators for the pooled groups. Second, for both poverty and GDP per capita growth rates, a Chow test supported that the models should be stratified, Fc=12.44, which indicates we would reject the null hypothesis at the 1% level in support of the alternative hypothesis that all coefficients for Non-OECD and OECD countries are not equal.

Table 3 – Full Sample Fixed Effects Results without Year Dummies

	GDPPC Growth	Log GDPPC	Poverty	Gini
Cost	-1.2414	-0.0703*	6.7153**	5.5877***
	(0.8877)	(0.0423)	(3.1703)	(2.0768)
Democracy	-4.5684	0.6358***	-84.0569**	-12.7057
	(8.6569)	(0.1978)	(33.1468)	(9.0277)
Rule of Law	-4.5663	0.7848***	4.2844	1.8716
	(1.9990)	(0.2231)	(3.4133)	(1.4202)
Fertility	-1.9175	-0.0338	-0.0338	-3.7375
	(5.3698)	(0.0453)	(0.0453)	(2.0932)
Log Population	1.1431	-0.2614	-19.1452	-2.1791
	(0.0786)	(0.2194)	(13.8988)	(6.1281)
Secondary Education	0.0427**	0.0005	-0.0441	-0.0140
	(7.7663)	(0.0009)	(0.0409)	(0.0201)
Terms of Trade	0.0030	0.0001	------	------
	(0.0029)	(0.0001)	------	------
Capital Accumulation	0.2756***	0.0075***	-0.2227***	-0.1175***
	(0.0203)	(0.0014)	(0.0550)	(0.0398)
Constant	-12.6447	12.2060	386.7872	88.1381
	(87.8444)	(3.5571)	(217.9289)	(101.5092)
R^2	0.5873	0.2926	0.5318	0.3140
N	559	559	364	431

***p<.01, **p<.05, *p<.1

Table 3 shows a 10 percentage point decrease in cost predicts a 0.12 percentage point increase in GDP per capita growth rates, a 0.03 percent increase in GDP per capita, a 0.67 percentage point decrease in poverty rates, and a 0.56 decrease in the Gini index, all else constant. The effects on GDPPC, poverty, and the Gini index are statistically significant at the 10, 5, and 1% level, respectively. Across the sample, higher levels of democracy predict lower levels of GDP growth, poverty rates, lower inequality, and high levels of GDPPC, although the effects on inequality and growth are not statistically significant. Capital accumulation, interestingly, is significantly correlated with higher growth and income and lower inequality and poverty, all at the 1% level of significance. Year dummies are included in full set of results in the Appendix Table 11, and years are measured relative to 2004.

An OLS specification, which uses several additional controls, can also be found in the Appendix Table 16. Government spending on education and health as a percentage of GDP is included in all models as well as the initial level of GDP per capita in the growth rate model. Results show the same qualitative effect as the above model. There is no statistically significant effect on GDP per capita growth rates, although the effect is still negative. Natural log of GDP per capita is negatively and significantly correlated with cost, whereas poverty and inequality are positively and significantly correlated with cost. OLS was used to minimize the loss of degrees of freedom with adding variables to the fixed effects model.

Table 4 – OECD Fixed Effects Results without Year Dummies

	GDPPC Growth	Log GDPPC	Poverty	Gini
Cost	7.7052**	-0.3433**	-4.1311	4.9793
	(3.7482)	(0.1582)	(4.4993)	(4.4484)
Democracy	-15.0760*	0.9572***	0.3817	-18.8226
	(8.4624)	(0.3199)	(9.1190)	(11.8742)
Rule of Law	-0.5258	0.7177**	-17.4420**	6.4848
	(9.8732)	(0.3163)	(6.7293)	(9.3739)
Fertility	-3.9310	0.0487	6.6472***	-2.6934
	(3.2197)	(0.0794)	(2.0075)	(2.9557)
Log Population	4.5975	-0.6557*	-9.5921	4.1811
	(8.3175)	(0.3423)	10.0625	10.5369
Secondary Education	0.0748	0.0008	0.1470*	0.0657
	(0.0528)	(0.0018)	0.0809	0.1422
Capital Accumulation	0.3617***	0.0069***	0.0883*	-0.0111
	(0.0707)	(0.0022)	0.0472	0.0696
Terms of Trade	0.0031	0.0000	----	----
	(0.0021)	(0.0000)	----	----
Constant	-66.3011	19.2611	157.2610	-24.6301
	(136.5265)	(5.3922)	(164.2966)	(169.1629)
R^2	0.7476	0.6099	0.2736	0.1785
N	249	249	160	222

***p<.01, **p<.05, *p<.1

The results for the stratified models show differing results. The full results for OECD countries are shown in Appendix Table 14. Cost is not significantly correlated to poverty rates or inequality. It is, however, significantly correlated to GDP per capita growth and GDP per capita. Interestingly, a 10-percentage point increase in costs predicts a 0.77 percentage point increase in growth rates and a 0.03 percent decrease in GDP per capita. It is also worth noting that democracy is highly correlated with higher levels of GDP per capita, but lower levels of growth. Capital accumulation remains highly positively correlated with growth rates and higher levels of GDP per capita, but also with *higher* levels of poverty in OECD countries. It is not significantly correlated with inequality.

Table 5 – Non-OECD Fixed Effects Results without Year Dummies

	GDPPC Growth	Log GDPPC	Poverty	Gini
Cost	-2.0701***	-0.0089	4.8913*	3.6664*
	(0.7288)	(0.0226)	(2.7669)	(2.1608)
Democracy	1.3937	0.1861	-89.6811**	-10.2725
	(11.9787)	(0.1630)	(38.5815)	(14.3927)
Rule of Law	-0.5746	0.4164*	31.3491	16.9249**
	(11.4391)	(0.2296)	(20.8813)	(8.2849)
Fertility	-2.0939	0.0288	-13.0659***	-4.6338**
	(2.7028)	(0.0573)	(4.5971)	(1.9854)
Log Population	3.0967	-0.2542	-29.6887**	-4.8121
	(7.2770)	(0.3028)	(14.4461)	(6.3690)
Secondary Education	0.0501	0.0000	-0.0240	-0.0072
	(0.0244)	(0.0007)	(0.0329)	(0.0175)
Capital Accumulation	0.2618***	0.0061***	-0.1783***	-0.1252**
	(0.1055)	(0.0015)	(0.0622)	(0.0492)
Terms of Trade	0.0022	0.0001	-----	-----
	(0.0052)	(0.0001)	-----	-----
Constant	-46.4689	11.5736**	553.1112**	127.4891
	(118.9174)	(4.8890)	(225.0804)	(103.4926)
R^2	0.5304	0.8035	0.6691	0.4929
N	310	310	204	209

***p<.01, **p<.05, *p<.1

Table 5 shows results for Non-OECD countries, which are closer to the full models' results. In this sample, cost is not significantly correlated with GDP per capita but is negatively correlated with growth, and positively correlated with poverty rates and inequality. A 10-percentage point decrease in cost predicts a 0.21 percentage point increase in growth rates, a 0.49 percentage point decrease in poverty, and a 0.37 decrease in the Gini index. Democracy is only significantly correlated with poverty. A 0.1 increase in the democracy index predicts an 8.9 percentage point decrease in poverty rates. Full results with year dummies can be found in Appendix Table 15.

My auxiliary data includes survey responses from the World Enterprise Surveys for the years 2005 to 2014. The methodology ensures that the sample of respondents is representative of country's business climate. The following results further explore the relationship between GDP per capita growth rates and poverty, and also explore the effects on the Gini coefficient and the log of GDP per capita. I introduce several dummy variables that represent whether a country was in the top quartile of the percentage of firm respondents indicating that labor costs or tax rates were impeding their ability to operate or whether or not a gift was expected to "get things done" when meeting with a government official. I interact these dummy variables with cost variable to explore the effects of costs when taxation rates or labor costs are considered high by a large portion of firms. I anticipate the results will elucidate the effects shown in the main regressions. All the following models are OLS, due to the limited number of observations, for all countries included in the sample. All covariates are included in the regression, and the full results are in the Appendix Table 17.

Table 6 – Auxiliary Regression Results without Control Variables

	GDPPC Growth	Log GDPPC	Poverty	Gini
Cost	0.976	-0.643*	16.225	11.168
	(2.268)	(0.333)	(17.835)	(11.155)
Top Tax Constraint	-1.592	-0.058	-7.956**	0.023
	(1.848)	(0.139)	(3.534)	(2.702)
Cost*Top Tax Constraint	2.916	0.055	0.469	-17.521*
	(5.259)	(0.339)	(16.549)	(10.367)
P(F>f)	0.682	0.035	0.006	0.007
N	81	81	52	57
R^2	0.803	0.803	0.345	0.579
Cost	2.983	-0.661**	3.955	-5.613
	(2.234)	(0.333)	(13.671)	(7.877)
Top Labor Constraint	1.067	-0.107	-5.162	2.731
	(1.748)	(0.131)	(3.321)	(2.574)
Cost*Top Labor Constraint	-2.054	0.114	12.285	-1.821
	(4.567)	(0.332)	(12.199)	(7.786)
P(F>f)	0.584	0.012	0.053	0.321
N	82	82	52	57
R^2	0.252	0.804	0.283	0.283
Cost	5.141**	-0.599**	0.789	-1.382
	(2.515)	(0.321)	(12.861)	(6.706)
Top Gift Expectation	5.701***	-0.544***	13.744	1.100
	(1.928)	(0.194)	(14.448)	(2.182)
Cost*Top Gift Expectation	-10.231***	0.231	7.025	-7.637
	(2.702)	(0.307)	(14.719)	(5.990)
P(F>f)	0.001	0.000	0.000	0.000
N	80	80	51	56
R^2	0.318	0.809	0.375	0.615

***p<.01, **p<.05, *p<.1

The results shown in Table 6 show a strong statistical relationship between GDP per capita growth rates and bribery. A 10-percentage point increase in cost predicts a 0.514 percentage point increase in GDP per capita growth rates for countries not in the top bribery quartile, but predicts a .518 (-10.231 + 5.141) decrease for countries in the top bribery quartile. Being in the top quartile alone increases growth rates by 5.7 percentage

points, but this is only the effect when cost is equal to 0. The positive effect would be overpowered by the negative interaction with cost. No other interaction variables are statistically significant at standard levels; however, this is unsurprising given the limited data and resulting higher standard errors. Furthermore, for all four models, the F test for joint significance supports rejecting the null at the 1% level suggesting joint significance for the three covariates. For the Gini index, the interaction between top tax constraint and cost is statistically significant at the 10% level, and highly economically significant. For a country not in the top quartile of tax restraint responses, a 10-percentage point decrease in cost predicts a 1.12 percentage point decrease in the Gini index. For countries in the top quartile, a 10-percentage point decrease predicts a 2.87 percentage point increase in the Gini index (-11.168+17.521). There is little evidence support joint significance with respect to GDPPC Growth, but there is evidence for joint significance at the 5% level for Log GDP per capita poverty, and the Gini index with poverty and inequality being significant at the 1% level. None of labor constraint and cost interaction terms are statistically significant determinants of the social benefit variables, but there is evidence of joint significance for Log GDP per capita and poverty rates. While the cost variable loses statistical significance in most models, it is likely do to the much smaller sample size with less variation in countries.

Discussion and Conclusion

Since the regular collection of data beginning over a decade ago, there has been a considerable decrease in the cost of business registration relative to income per capita. This thesis has examined the correlated social benefits of this decrease, controlling for a variety of variables, of all countries within the sample and stratified the sample between OECD and Non-OECD countries. There were several important similarities between the stratified sample, as well as key differences. In both groups, cost was negatively correlated with GDP per capita. Higher costs, relative to income per capita, predict lower levels of income. The economic impact is stronger in OECD countries and statistically significant. Higher costs are also correlated with higher levels of inequality measured through the Gini index in both OECD and Non-OECD models. The impact is stronger in OECD countries, although the estimator is not statistically significant. In both groups, democracy is positively correlated with higher levels of GDP per capita and lower levels of inequality, although only the effect on GDP per capita in OECD countries is statistically significant. The effect on the Gini index in OECD countries is very close to statistical significance.[8] In OECD countries, democracy is negatively correlated to growth, whereas it is positively correlated in Non-OECD countries. This difference suggests that higher levels of political participation and free speech may in fact impede growth rates for a variety of reasons including higher levels of redistribution or higher governmental procedures to enact policies. Democracy is positively correlated with growth in Non-OECD countries suggesting higher levels of political participation and free speech promote growth in less-developed countries. Cost also has different effects on growth on poverty in OECD and Non-OECD countries. Whereas cost is positively

[8] p-value=0.126

correlated with growth in OECD countries, it is negatively correlated with growth in Non-OECD countries. This is somewhat unsurprising as the mean starting cost in OECD countries for all years is about 6.9% whereas it is 72.2% for Non-OECD countries. The significantly higher mean in Non-OECD countries suggests formalization and firm registration costs are prohibitively high for many individuals in developing countries. The high costs stifle economic activity that could have created formal jobs and increased output. This idea is further supported by the fact that in Non-OECD countries, the Gini index is positively and significantly correlated with cost. As costs decrease, and formalization and registration presumably increase, inequality decreases. This decrease could be from increased formal hiring of individuals who may have been working in informal employment, supporting the research of Ayyagari (2014). The differing effects on poverty further support this idea. In OECD countries, decreasing the cost of registration is positively correlated with poverty rates, and the effect is not statistically significant. In Non-OECD, countries, however, decreasing the cost of registration is correlated with a decrease in poverty rates. These relationships further suggest increasing the ease of business registration could be an effective remedy to increase formal employment for individuals in developing countries, and in turn, reduce poverty and inequality. Once again, small firms have been shown to have the highest rate of job creation in developing economies (Ayyagari, 2014).

As previously mentioned, the cost of registering a business varies substantially between OECD and Non-OECD countries, which may be because countries with improved regulatory frameworks have improved business regulatory frameworks (Doing Business, 2014). Countries with high quality institutions generally have higher levels of

income. However, by controlling for rule of law and democracy, as well as by using fixed effects, institutional quality control should be accounted for.

As Djankov et al. (2002) discusses in great detail, higher levels of regulations in developing country are actually correlated with higher levels of bribery and informal sectors. These regulations largely benefit public officials who are able to extract rents from the high costs (Djankov, 2002). This suggests that Non-OECD countries would indeed have the predicted effects on poverty and inequality as the cost reductions are would not significantly decrease funding for other social benefit programs. A country like Mauritania where, in 2006, over 82% of firm respondents indicators gifts were expected when meeting with public officials to “get things done”, is less likely to have business registration fees allocated to public goods such as education and health care. Using Mauritania’s data from 2004 (due to missing data from 2006), the results indicate the following. Should Mauritania decrease its cost by 10 percentage points, there would be a predicted increase in GDP per capita growth rates from 2.64% to 2.84%, no significant impact on GDP per capita, a decrease in the poverty rate from 40.3% to 39.8%, and a decrease in the Gini index from 40.17 to 39.17. Colombia decreased its registration cost from 28% of income per capita in 2004 to 7.5% in 2013, roughly 20 percentage points. This should predict a 0.978 percentage point decrease in poverty per year, adding to a total of 9.78 percentage points over the 10 years. Colombia’s expected poverty rate would decrease from 26.51% in 2004 to 16.7%. The actual 2013 value was 13.8%, but 16.2% in 2012. Overall, countries with highest levels of corruption should expect to see the highest social benefits because the corruption extracts benefits from the economy. The increase in employment and formal business activity would counteract the loss in

government revenue that would have gone to public programs on health and education, for example.

OECD countries are unlikely to see the same net social benefits as Non-OECD countries because the lower levels of rent seeking (generally speaking) suggest most of the costs are actually being used for public goods. In OECD countries, the average cost is much smaller, and there is less social benefit associated with decreasing the cost five percentage points (from 6.9 to 1.9) in OECD counties, as there would be in Non-OECD countries (72.2 to 67.2) because the OECD costs are not prohibitively high. That is, a much larger proportion of the OECD population is able to start a formal business *if they want to*, whereas a much smaller proportion of individuals in Non-OECD countries are able to *even if they wanted to.*

This thesis aims to measure the social benefits, and in doing so, determine where the benefits have gone. In OECD countries, the evidence suggests lowering registration costs does little to improve poverty or income inequality. In fact, decreasing the cost in OECD countries would predict an increase in poverty, though the prediction is not statistically significant. This may be because OECD countries use the registration costs in a more efficient manner and fund public goods such as education and health.

My results support Hasan's (2007) findings that lower regulations are correlated with lower levels of poverty and high levels of growth. However, my results vary somewhat from Hasan's. His sample included 30 countries, 7 of which were OECD. This ratio compares similarly to my full sample in which 34 out 186 countries are OECD. While Hasan found evidence supporting decreasing regulations increases income per capita growth rates, I did not find a statistically significant relationship between cost and

GDP per capita growth rates, but did find a statistically significant relationship between cost and GDP per capita. My results also differ from Hasan's where I stratify the sample based on OECD status. While the number of observations drop, the results provide insight into the differing social benefits of registration cost reduction in high vs. lower-income countries.

This thesis finds strong evidence that capital accumulation plays an important role in both OECD and Non-OECD countries in terms of increasing GDP per capita, GDP per capita growth rates, and reducing poverty and inequality – all socially beneficial results. However, further research is necessary to determine what that role is and its relation to business registration costs. Another further extension of the results could include a similar study of US states. Such a study could provide insights on the effects of registration, as there would likely be fewer unobservable factors influencing state outcomes than international outcomes. Although I find evidence that the Doing Business data is credible, US state data may be more accurate due to better public record keeping.

Additionally, having quality data around the informal economy would clarify and support many of the hypotheses in this study, particular those around the Non-OECD results. It would be important to see the effect of cost reduction on informal employment rates, as poverty and inequality reduction as well as increases in GDP per capita growth rates may stem from increased formal employment associated with the decrease in costs.

Appendix

Table 7 – Summary Data by Country

Mean Values					
Country Name	**Cost**	**GDPPC Growth Rate**	**Log GDPPC**	**Poverty**	**Gini**
Afghanistan	0.478	4.760	5.792	---	---
Albania	0.335	4.523	8.105	7.563	29.847
Algeria	0.129	1.490	8.071	---	---
Angola	4.303	---	7.632	54.520	42.720
Antigua and Barbuda	0.110	0.912	9.424	---	---
Argentina	0.133	4.330	8.808	7.091	45.946
Armenia	0.043	6.007	7.599	20.491	32.052
Australia	0.012	1.422	10.488	14.000	35.285
Austria	0.054	0.974	10.599	9.367	30.249
Azerbaijan	0.069	10.458	7.844	0.000	16.435
Bahamas	0.101	-1.102	9.995	---	---
Bahrain	0.007	-0.200	9.766	---	---
Bangladesh	0.188	4.788	6.380	79.555	32.355
Barbados	0.073	0.604	9.586	---	---
Belarus	0.115	6.476	8.315	0.931	27.380
Belgium	0.069	0.741	10.540	9.713	28.954
Belize	0.516	0.366	8.283	---	---
Benin	1.643	1.198	6.423	75.630	43.440
Bhutan	0.105	5.321	7.392	21.185	38.370
Bolivia	1.238	3.210	7.077	22.271	51.988
Bosnia and Herzegovina	0.288	2.754	8.072	0.530	33.540
Botswana	0.052	3.132	8.711	35.740	60.460
Brazil	0.047	2.531	8.580	15.169	54.618
Brunei Darussalam	0.105	-1.186	10.148	---	---
Bulgaria	0.049	3.879	8.414	2.907	33.886
Burkina Faso	0.836	2.728	6.117	80.470	39.760
Burundi	1.542	0.621	4.989	92.170	33.360
Cabo Verde	0.274	4.095	7.816	39.260	47.190
Cambodia	2.266	6.159	6.371	49.366	34.607
Cameroon	1.164	1.105	6.850	54.270	42.820
Canada	0.006	0.948	10.513	11.622	33.820
Central African Republic	2.066	-2.326	5.773	82.270	56.240
Chad	2.981	5.235	6.513	64.820	43.320
Chile	0.075	3.090	9.060	---	51.270
China	0.019	9.428	7.851	33.987	42.390

Table 7 Continued

Colombia	0.165	3.622	8.274	22.199	55.927
Comoros	1.749	-0.277	6.397	32.260	55.930
Congo, Dem. Rep.	8.553	3.197	5.466	93.790	43.155
Congo, Rep.	1.155	2.170	7.522	62.335	43.745
Costa Rica	0.125	3.213	8.594	6.413	49.009
Cote d'Ivoire	1.260	1.262	6.863	55.140	43.180
Croatia	0.105	1.084	9.274	0.080	31.180
Cyprus	0.127	-0.599	10.101	---	31.646
Czech Republic	0.092	2.124	9.573	5.844	26.538
Denmark	0.000	0.191	10.789	5.600	27.903
Djibouti	2.326	3.298	6.954	36.980	45.130
Dominica	0.235	1.724	8.667	---	---
Dominican Republic	0.238	4.008	8.384	13.016	48.771
Ecuador	0.350	3.058	8.106	19.720	50.498
Egypt	0.378	2.329	7.222	---	30.750
El Salvador	0.736	1.551	8.022	16.775	45.079
Equatorial Guinea	0.992	3.786	9.519	---	---
Eritrea	0.941	-1.294	5.489	---	---
Estonia	0.035	3.429	9.319	12.778	32.844
Ethiopia	1.496	8.052	5.387	73.745	31.490
Fiji	0.259	1.109	8.199	17.040	42.780
Finland	0.011	0.572	10.593	7.140	27.746
France	0.010	0.475	10.475	8.050	32.074
Gabon	0.202	0.858	8.822	24.430	42.180
Gambia	2.330	0.287	6.086	---	---
Georgia	0.086	5.387	7.501	35.687	40.821
Germany	0.052	1.489	10.525	8.550	31.542
Ghana	0.406	4.497	6.397	49.040	42.770
Greece	0.224	-1.279	9.968	13.522	34.887
Grenada	0.280	1.125	8.778	---	---
Guatemala	0.533	1.368	7.698	26.227	52.657
Guinea	1.512	-0.139	5.709	74.930	36.545
Guinea-Bissau	2.677	0.697	6.028	83.590	50.660
Guyana	0.520	3.606	7.168	---	---
Haiti	2.894	0.111	6.157	70.990	60.790
Honduras	0.456	2.314	7.333	34.350	56.066
Hong Kong	0.024	3.680	10.318	---	---
Hungary	0.158	1.536	9.338	10.200	29.226

Table 7 Continued

Iceland	0.028	1.559	10.966	6.278	28.706
India	0.412	6.194	6.835	66.430	33.640
Indonesia	0.219	4.283	7.314	50.495	34.563
Iran	0.049	1.757	8.151	4.960	39.237
Iraq	0.743	7.343	7.667	---	29.540
Ireland	0.026	0.900	10.828	10.133	32.563
Israel	0.047	2.167	10.028	18.367	41.940
Italy	0.188	-0.904	10.341	12.411	34.171
Jamaica	0.091	-0.122	8.341	8.220	45.460
Japan	0.075	0.809	10.502	---	32.110
Jordan	0.502	3.045	7.885	2.843	33.363
Kazakhstan	0.053	5.276	8.428	3.704	28.727
Kenya	0.458	2.525	6.366	58.850	48.510
Kiribati	0.488	-0.189	7.017	34.670	37.610
Korea	0.159	3.298	9.967	14.600	---
Kosovo	0.254	3.163	7.822	4.161	30.076
Kuwait	0.015	-1.410	10.357	---	---
Kyrgyz Republic	0.073	3.143	6.312	30.513	32.427
Lao PDR	0.130	6.016	6.407	66.285	37.265
Latvia	0.039	4.461	9.047	0.499	35.938
Lebanon	0.846	3.118	8.762	---	---
Lesotho	0.349	3.385	6.722	77.280	54.180
Liberia	1.835	3.054	5.270	89.610	36.480
Libya	0.254	2.703	8.869	---	---
Lithuania	0.027	4.977	9.132	0.808	35.051
Luxembourg	0.049	0.871	11.314	8.067	31.761
Macedonia	0.058	3.245	8.165	7.493	41.193
Madagascar	1.034	0.252	5.629	91.385	39.755
Malawi	1.359	2.430	5.499	88.855	42.995
Malaysia	0.210	3.364	8.742	6.933	46.103
Maldives	0.106	3.867	8.403	16.465	37.075
Mali	1.293	0.853	6.092	76.920	35.985
Malta	0.117	1.434	9.665	---	---
Marshall Islands	0.177	1.004	7.919	---	---
Mauritania	0.859	3.046	6.660	36.405	38.825
Mauritius	0.055	3.580	8.699	3.000	35.745
Mexico	0.184	1.151	9.007	18.900	48.263
Moldova	0.113	4.818	6.869	11.728	32.942

Table 7 Continued

Mongolia	0.063	7.450	7.171	7.548	34.133
Montenegro	0.033	3.254	8.374	1.237	30.579
Morocco	0.163	3.077	7.710	15.530	40.720
Mozambique	0.442	4.488	6.078	87.540	45.580
Myanmar	1.532	9.193	---	---	---
Namibia	0.193	3.593	8.308	45.720	60.970
Nepal	0.582	3.196	5.890	48.380	32.750
Netherlands	0.078	0.731	10.673	7.550	29.434
New Zealand	0.003	0.991	10.252	9.850	.
Nicaragua	1.193	2.608	7.150	32.255	43.110
Niger	2.425	1.164	5.587	87.290	37.727
Nigeria	0.587	5.719	6.846	76.460	42.970
Norway	0.023	0.550	11.112	7.900	27.798
Oman	0.037	-1.096	9.453	---	---
Pakistan	0.104	2.179	6.629	53.345	31.508
Palau	0.052	0.544	9.101	---	---
Panama	0.117	6.329	8.708	13.386	52.905
Papua New Guinea	0.241	4.105	6.836	64.680	43.880
Paraguay	0.718	3.415	7.451	14.031	51.129
Peru	0.234	4.705	8.119	17.571	48.410
Philippines	0.224	3.743	7.223	38.240	43.383
Poland	0.175	4.006	9.165	11.567	33.800
Portugal	0.073	0.021	9.844	12.233	36.882
Qatar	0.056	1.734	10.971	---	---
Romania	0.045	4.040	8.618	5.424	30.771
Russian Federation	0.012	3.720	8.734	1.567	41.204
Rwanda	1.086	5.034	5.870	82.355	51.690
Samoa	0.293	1.038	7.889	8.350	42.690
San Marino	0.085	2.087	10.784	---	---
Sao Tome and Principe	0.885	2.992	6.847	69.240	30.820
Saudi Arabia	0.305	3.213	9.613	---	---
Senegal	0.873	1.004	6.669	66.025	39.750
Serbia	0.098	3.117	8.286	1.894	30.287
Seychelles	0.226	3.841	9.469	0.970	42.770
Sierra Leone	6.458	4.658	5.934	79.960	33.990
Singapore	0.008	3.527	10.414	---	---
Slovak Republic	0.037	3.971	9.540	7.656	27.488
Slovenia	0.053	1.304	9.859	8.256	25.398

Table 7 Continued

Solomon Islands	0.922	2.741	6.904	69.260	46.100
South Africa	0.054	1.683	8.671	37.510	63.727
South Sudan	2.822	-7.971	---	---	---
Spain	0.128	-0.111	10.174	14.400	34.487
Sri Lanka	0.392	5.583	7.352	17.507	38.250
St. Kitts and Nevis	0.151	1.506	9.318	---	---
St. Lucia	0.229	0.392	8.678	---	---
St. Vincent and the Grenadines	0.250	1.476	8.593	---	---
Sudan	0.524	4.120	6.692	38.940	35.390
Suriname	1.240	3.444	8.322	---	---
Swaziland	0.340	1.053	7.795	63.120	51.450
Sweden	0.006	1.225	10.707	9.350	26.892
Switzerland	0.039	1.145	10.960	9.667	32.930
Syria	0.281	2.936	7.377	---	35.770
Tajikistan	0.416	4.879	6.007	34.123	32.187
Tanzania	0.854	3.454	6.216	76.995	39.030
Thailand	0.075	3.331	8.095	3.414	40.035
Timor-Leste	0.411	4.251	6.410	80.050	31.560
Togo	2.053	0.958	5.975	75.615	44.115
Tonga	0.104	0.055	7.829	8.190	38.100
Trinidad and Tobago	0.009	2.678	9.534	---	---
Tunisia	0.075	2.617	8.192	10.830	36.770
Turkey	0.198	3.437	8.964	18.250	39.704
Uganda	0.945	3.383	5.946	69.577	43.170
Ukraine	0.087	2.858	7.605	1.107	26.693
United Arab Emirates	0.109	-3.851	10.321	---	---
United Kingdom	0.007	0.723	10.602	10.663	34.631
United States	0.012	0.909	10.707	17.750	40.973
Uruguay	0.393	5.135	8.761	3.255	45.227
Uzbekistan	0.094	6.390	6.560	---	---
Vanuatu	0.629	1.323	7.625	38.800	37.180
Venezuela	0.288	3.367	8.704	22.650	49.707
Vietnam	0.185	5.170	6.749	37.426	38.828
Yemen, Rep.	1.503	-0.868	6.668	---	35.890
Zambia	0.297	4.523	6.734	76.583	54.843
Zimbabwe	2.821	-0.562	6.017	---	---
Total	0.598	2.536	8.155	19.664	37.657

Table 8 – Summary Data by Region

Region	Cost	Democracy	Rule of Law	Fertility	Log Population	Education	Capital Acc.	Terms of Trade
East Asia & Pacific	0.221	0.522	0.566	2.536	15.434	41.319	26.505	113.414
Europe & Central Asia	0.091	0.619	0.613	1.715	15.634	49.842	24.145	116.360
Latin America	0.504	0.558	0.444	2.498	15.030	33.231	22.930	111.729
Middle East & North Africa	0.405	0.318	0.452	2.740	16.044	30.394	25.792	116.277
North America	0.035	0.711	0.708	1.811	15.256	49.768	20.521	104.303
South Asia	0.359	0.341	0.361	3.028	17.437	30.114	29.464	115.443
Sub-Saharan Africa	1.448	0.385	0.361	4.925	15.598	28.712	23.152	112.446
Total	0.598	0.490	0.485	3.001	15.630	43.560	24.220	113.865

Table 9 – Summary Data by Year

Year	Cost	Democracy	Rule of Law	Fertility	Log Population	Education	Capital Acc.	Terms of Trade
2004	1.0510	0.4916	0.4851	3.1349	15.5512	43.8102	22.8858	110.6458
2005	0.9207	0.4895	0.4842	3.1051	15.5669	41.8469	23.4645	108.3347
2006	0.8342	0.4904	0.4851	3.0765	15.5832	43.2485	23.9658	113.3647
2007	0.7914	0.4903	0.4861	3.0527	15.5996	44.0671	25.3421	112.3222
2008	0.7016	0.4899	0.4875	3.0246	15.6161	44.4080	25.8131	114.9183
2009	0.5479	0.4888	0.4852	2.9911	15.6319	44.7438	23.6252	113.3506
2010	0.4623	0.4881	0.4852	2.9591	15.6473	43.0273	24.0433	114.5102
2011	0.4408	0.4875	0.4840	2.9280	15.6619	44.2550	24.4537	112.8440
2012	0.3851	0.4877	0.4821	2.8846	15.6763	42.0039	24.6336	115.0634
2013	0.3443	0.4877	0.4823	2.8574	15.6906	42.9953	24.1192	119.0951
2014	0.3124	0.4951	0.4899	----	15.7046	45.3487	24.1177	119.7733
Total	0.5980	0.4897	0.4852	3.0014	15.6300	43.5599	24.2204	113.8654

Table 10 – Cost Component Variable Means by Year

Year	Cost (Income per Capita)	Cost (Local Currency)	GDPPC	Log Population
2004	1.051008	1414.885	9731.109	15.55119
2005	0.9206714	1447.082	9918.576	15.56687
2006	0.8342453	1405.621	10297.39	15.58321
2007	0.7913681	1345.806	10615.96	15.59958
2008	0.7015904	1251.268	10673.28	15.61611
2009	0.5478503	1078.868	9991.481	15.63192
2010	0.4623393	934.9337	10163.73	15.64727
2011	0.4407619	973.2702	10301.75	15.66194
2012	0.3851059	918.125	10416.47	15.67625
2013	0.3442816	837.2289	10485.38	15.69057
2014	0.3124162	781.3244	10732.61	15.70461
Total	0.5980235	1111.489	10300.63	15.62996

Table 11 – Full Sample Fixed Effects Results with Year Dummies

	GDPPC Growth	Log GDPPC	Poverty	Gini
Cost	-1.2414	-0.0703*	6.7153**	5.5877***
	(0.8877)	(0.0423)	(3.1703)	(2.0768)
Democracy	-4.5684	0.6358***	-84.0569	-12.7057
	(8.6569)	(0.1978)	(33.1468)	(9.0277)
Rule of Law	-4.5663	0.7848***	4.2844	1.8716
	(7.7663	(0.2231)	(3.4133)	(1.4202)
Fertility	-1.9175	-0.0338	-0.0338	-3.7375
	(1.9990)	(0.0453)	(0.0453)	(2.0932)
Log Population	1.1431	-0.2614	-19.1452	-2.1791
	(5.3698)	(0.2194)	(13.8988)	(6.1281)
Secondary Education	0.0427**	0.0005	-0.0441	-0.0140
	(0.0203)	(0.0009)	(0.0409)	(0.0201)
Terms of Trade	0.0030	0.0001	------	------
	(0.0029)	(0.0001)	------	------
Capital Accumulation	0.2756***	0.0075***	-0.2227***	-0.1175***
	(0.0786)	(0.0014)	(0.0550)	(0.0398)
Constant	-12.6447	12.2060	386.7872	88.1381
	(87.8444)	(3.5571)	(217.9289)	(101.5092)
2005	-0.6123	0.0473	-1.2627	0.0073
	(0.3238)	(0.0073)	(0.6567)	(0.3492)
2006	-0.0207	0.0862	-3.0678	0.2571
	(0.3742)	(0.0088)	(1.0258)	(0.5348)
2007	0.1454	0.1221	-2.5683	-0.0124
	(0.5689)	(0.0124)	(1.2665)	(0.5212)
2008	-3.3156	0.1406	-3.0925	-0.0858
	(0.5327)	(0.0139)	(1.4508)	(0.5447)
2009	-8.2421	0.1343	-4.5538	-1.0701
	(0.6398)	(0.0152)	(1.4021)	(0.5517)
2010	-1.9854	0.1625	-4.5163	-1.1699
	(0.6250)	(0.0170)	(1.4852)	(0.5323)
2011	-2.2096	0.1811	-5.1450	-1.4705
	(0.5948)	(0.0169)	(1.4546)	(0.5132)
2012	-4.2357	0.1925	-5.5834	-1.5673
	(0.6367)	(0.0198)	(1.5035)	(0.5833)
2013	-2.6720	0.2016	-7.8323	-3.0206
	(0.5824)	(0.0231)	(1.7770)	(0.6990)
R^2	0.5873	0.2926	0.5318	0.3140
N	559	559	364	431

***p<.01, **p<.05, *p<.1

Table 12 – Full Sample Random Effects Results with Year Dummies

	GDPPC Growth	Log GDPPC	Poverty	Gini
Cost	0.4259	-0.0881**	10.1920**	2.6946
	(0.5410)	(0.0416)	(4.1574)	(2.1728)
Democracy	-0.1529	0.9403***	-37.7509	-3.0352
	(2.2450)	(0.1906)	(23.1969)	(7.1823)
Rule of Law	-5.0291***	1.4761***	14.8472	-7.7303
	(1.7977)	(0.1966)	(14.7355)	(5.3439)
Fertility	0.6025	-0.1370***	2.3283	0.0984
	(0.3979)	(0.0485)	(3.7262)	(1.8295)
Log Population	-0.0460	0.0004	-0.0396*	-0.0183
	(0.1330)	(0.0009)	(0.0424)	(0.0250)
Secondary Education	0.0321***	-0.0934	1.3874	0.8327
	(0.0116)	(0.0774)	(0.8144)	(0.6090)
Terms of Trade	0.1968	0.0000	-----	-----
	(0.0442)	(0.0001)	-----	-----
Capital Accumulation	0.0040***	0.0065***	-0.2874***	-0.1335***
	(0.0026)	(0.0014)	(0.0718)	(0.0417)
Constant	0.7402	8.9744	10.4613	33.7210
	(2.5921)	(1.2959)	(21.1937)	(11.2333)
2005	-0.7006	0.0506	-0.9697	0.0722
	(0.3581)	(0.0079)	(0.7432)	(0.3585)
2006	0.2230	0.0929	-3.0641	0.1939
	(0.3409)	(0.0094)	(1.0359)	(0.5235)
2007	0.4691	0.1307	-2.8504	-0.1983
	(0.4742)	(0.0126)	(1.1811)	(0.5143)
2008	-2.9387	0.1479	-3.3546	-0.3627
	(0.4584)	(0.0139)	(1.2184)	(0.5595)
2009	-8.0376	0.1349	-5.3399	-1.5248
	(0.6070)	(0.0139)	(1.0441)	(0.5530)
2010	-1.7569	0.1586	-5.1791	-1.6071
	(0.5166)	(0.0166)	(1.1529)	(0.5418)
2011	-1.9601	0.1742	-5.4374	-1.6275
	(0.4386)	(0.0147)	(1.2349)	(0.5550)
2012	-3.7013	0.1854	-5.9748	-1.9509
	(0.4862)	(0.0171)	(1.2098)	(0.5808)
2013	-2.5737	0.1963	-8.3147	-3.1385
	(0.4201)	(0.0195)	(1.5050)	(0.7078)
R^2	0.5737	0.6796	0.5747	0.2747
N	559	559	364	431

***p<.01, **p<.05, *p<.1

Table 13 – Full Sample OLS Results with Year Dummies

	GDPPC Growth	Log GDPPC	Poverty	Gini
Cost	0.7624	-0.7361***	14.3126***	-5.2295***
	(0.5610)	(0.1037)	(2.0144)	(1.3921)
Democracy	-1.0032	1.3710***	-14.2410**	29.1138***
	(1.3569)	(0.2508)	(6.6613)	(4.5683)
Rule of Law	-4.3472***	3.9969***	7.7424	-41.6981***
	(1.1643)	(0.2152)	(5.0973)	(3.4824)
Fertility	0.6288**	-0.3337*	4.5122***	4.0053***
	(0.2482)	(0.0459)	(1.0868)	(0.7231)
Log Population	-0.0983	0.0313***	1.2048***	0.3441
	(0.0980)	(0.0181)	(0.3567)	(0.2365)
Secondary Education	0.0315***	-0.0090***	0.0602*	-0.1306***
	(0.0091)	(0.0017)	(0.0308)	(0.0207)
Capital Accumulation	0.1656***	-0.0212***	-0.1381	-0.2630***
	(0.0223)	(0.0041)	(0.0868)	(0.0598)
Terms of Trade	0.0046	-0.0004	-----	-----
	(0.0033)	(0.0006)	-----	-----
Constant	2.1865	7.0845***	-10.9119	43.0149***
	(2.2717)	(0.4198)	(8.8582)	(5.9946)
2005	-0.6913	0.0596	-0.3576	0.8944
	(0.6093)	(0.1126)	(2.1462)	(1.3342)
2006	0.3269	0.0133	-3.4101	0.7141
	(0.6082)	(0.1124)	(2.1743)	(1.3392)
2007	0.7086	0.1843	-2.8258	1.7928
	(0.5878)	(0.1086)	(2.1318)	(1.3279)
2008	-2.7484	0.1467	-5.7148	0.6324
	(0.5880)	(0.1087)	(2.1066)	(1.3086)
2009	-7.8769	0.0130	-4.9430	-1.1936
	(0.5898)	(0.1090)	(2.0582)	(1.3036)
2010	-1.6624	0.0222	-6.4282	-2.5135
	(0.5992)	(0.1107)	(2.1157)	(1.3442)
2011	-1.8266	0.0797	-3.6873	-0.4676
	(0.5861)	(0.1083)	(2.0251)	(1.3072)
2012	-3.4937	0.0252	-4.5071	-2.4783
	(0.5893)	(0.1089)	(2.0207)	(1.3315)
2013	-2.6622	0.0401	-7.4731	0.1156
	(0.6440)	(0.1190)	(3.1952)	(2.5209)
R^2	0.5190	0.8277	0.4993	0.5764
N	559	559	314	376

***p<.01, **p<.05, *p<.1

Table 14 - OECD Fixed Effects Results with Year Dummies

	GDPPC Growth	Log GDPPC	Poverty	Gini
Cost	7.7052**	-0.3433**	-4.1311	4.9793
	(3.7482)	(0.1582)	(4.4993)	(4.4484)
Democracy	-15.0760*	0.9572***	0.3817	-18.8226
	(8.4624)	(0.3199)	(9.1190)	(11.8742)
Rule of Law	-0.5258	0.7177**	-17.4420**	6.4848
	(9.8732)	(0.3163)	(6.7293)	(9.3739)
Fertility	-3.9310	0.0487	6.6472***	-2.6934
	(3.2197)	(0.0794)	(2.0075)	(2.9557)
Log Population	4.5975	-0.6557*	-9.5921	4.1811
	(8.3175)	(0.3423)	(10.0625)	(10.5369)
Secondary Education	0.0748	0.0008	0.1470*	0.0657
	(0.0528)	(0.0018)	(0.0809)	(0.1422)
Capital Accumulation	0.3617***	0.0069***	0.0883*	-0.0111
	(0.0707)	(0.0022)	(0.0472)	(0.0696)
Terms of Trade	0.0031	0.0000	----	----
	(0.0021)	(0.0000)	----	----
Constant	-66.3011	19.2611	157.2610	-24.6301
	(136.5265)	(5.3922)	(164.2966)	(169.1629)
2005	-0.5877	0.0377	-1.0044	-0.6773
	(0.2865)	(0.0090)	(0.3919)	(0.3741)
2006	0.0074	0.0761	-1.2940	-1.2288
	(0.4658)	(0.0127)	(0.5261)	(0.5477)
2007	-0.1542	0.1049	-1.7085	-1.1314
	(0.6711)	(0.0163)	(0.7314)	(0.7002)
2008	-3.3671	0.1095	-1.8732	-1.1831
	(0.6946)	(0.0193)	(0.7543)	(0.8452)
2009	-7.0965	0.0894	-1.4713	-1.5256
	(0.7582)	(0.0196)	(0.7686)	(0.8920)
2010	-0.4735	0.1023	-1.3302	-1.3277
	(0.9323)	(0.0215)	(0.7872)	(0.9188)
2011	-0.6786	0.1243	-0.7893	-1.4487
	(0.8120)	(0.0227)	(0.7607)	(0.8451)
2012	-2.6418	0.1208	-0.8937	-1.2590
	(0.8940)	(0.0228)	(0.7494)	(0.8504)
2013	-1.7640	0.1341	-0.4731	----
	(0.7072)	(0.0282)	(0.7732)	----
R^2	0.7476	0.6099	0.2736	0.1785
N	249	249	160	222

***p<.01, **p<.05, *p<.1

Table 15 – Non-OECD Fixed Effects Results with Year Dummies

	GDPPC Growth	Log GDPPC	Poverty	Gini
Cost	-2.0701***	-0.0089	4.8913*	3.6664*
	(0.7288)	(0.0226)	(2.7669)	(2.1608)
Democracy	1.3937	0.1861	-89.6811**	-10.2725
	(11.9787)	(0.1630)	(38.5815)	(14.3927)
Rule of Law	-0.5746	0.4164*	31.3491	16.9249**
	(11.4391)	(0.2296)	(20.8813)	(8.2849)
Fertility	-2.0939	0.0288	-13.0659***	-4.6338**
	(2.7028)	(0.0573)	(4.5971)	(1.9854)
Log Population	3.0967	-0.2542	-29.6887**	-4.8121
	(7.2770)	(0.3028)	(14.4461)	(6.3690)
Secondary Education	0.0501	0.0000	-0.0240	-0.0072
	(0.0244)	(0.0007)	(0.0329)	(0.0175)
Capital Accumulation	0.2618***	0.0061***	-0.1783***	-0.1252**
	(0.1055)	(0.0015)	(0.0622)	(0.0492)
Terms of Trade	0.0022	0.0001	-----	-----
	(0.0052)	(0.0001)	-----	-----
Constant	-46.4689**	11.5736**	553.1112**	127.4891
	(118.9174)	(4.8890)	(225.0804)	(103.4926)
2005	-0.6209	0.0691	-0.6885	0.9196
	(0.6372)	(0.0149)	(1.1899)	(0.6405)
2006	-0.2400	0.1177	-3.9375	2.0891
	(0.7053)	(0.0134)	(1.2505)	(0.8933)
2007	0.3165	0.1667	-3.3510	0.8961
	(0.9443)	(0.0156)	(1.4427)	(0.8160)
2008	-3.2921	0.2026	-4.4156	0.6894
	(0.8297)	(0.0171)	(1.4207)	(0.7643)
2009	-9.0138	0.2026	-6.0040	-0.7180
	(0.9640)	(0.0197)	(1.3471)	(0.7540)
2010	-3.0011	0.2427	-6.2183	-1.3368
	(0.8644)	(0.0223)	(1.3863)	(0.6840)
2011	-3.3431	0.2643	-7.4225	-1.8623
	(0.8292)	(0.0216)	(1.4108)	(0.7668)
2012	-5.3170	0.2879	-7.8667	-2.0495
	(0.8490)	(0.0262)	(1.5724)	(0.9050)
2013	-3.2668	0.3179	-10.0010	-2.9600
	(0.9103)	(0.0315)	(1.7922)	(0.9050)
R^2	0.5304	0.8035	0.6691	0.4929
N	310	310	204	209

***p<.01, **p<.05, *p<.1

Table 16 – Full Sample OLS Results with Additional Controls

	GDPPC Growth	Log GDPPC	Poverty	Gini
Cost	-1.2414	-0.1366***	16.0089***	3.6110**
	(0.8877)	(0.0299)	(2.5148)	(1.4207)
Democracy	-4.5684	0.4874**	-18.9398**	3.2162
	(8.6569)	(0.2467)	(9.4201)	(5.2384)
Rule of Law	-4.5663	2.7018***	21.3599***	-10.5683**
	(7.7663)	(0.2464)	(8.3540)	(4.7426)
Fertility	-1.9175	-0.1860***	1.9773***	-0.6036
	(1.9990)	(0.0463)	(1.7459)	(1.0186)
Log Population	1.1431	0.0455	0.7619	0.5540
	(5.3698)	(0.0620)	(0.9606)	(0.6789)
Secondary Education	0.0427**	0.0009	-0.0074	-0.0217
	(0.0203)	(0.0009)	(0.0353)	(0.0188)
Terms of Trade	0.0030	0.0001	------	------
	(0.0029)	(0.0001)	------	------
Capital Accumulation	0.2756***	0.0080***	-0.2230	-0.0547**
	(0.0786)	(0.0012)	(0.0527)	(0.0267)
GDP Per Capita	-0.0002**	------	------	------
	(0.0001)	------	------	------
Government Spending	-0.5650*	0.0249***	-1.7428***	-0.4941***
	(0.3270)	(0.0059)	(0.2763)	(0.1348)
Constant	-57.4264	6.2584***	15.2141***	39.4012***
	(176.6137)	(1.0403)	(17.3002)	(11.9538)
R^2	0.6872	0.2951	0.3417	0.1183
N	344	354	258	321

***p<.01, **p<.05, *p<.1

Table 17 – Auxiliary Regression OLS Results with Control Variables

	GDPPC Growth	Log GDPPC	Poverty	Gini
Cost	0.9763	-0.6430*	16.2245	11.1682
	(2.2680)	(0.3332)	(17.8354)	(11.1553)
Top Tax Constraint	-1.5922	-0.0584	-7.9564**	0.0232
	(1.8476)	(0.1389)	(3.5341)	(2.7018)
Cost*Top Tax Constraint	2.9165	0.0549	0.4687	-17.5212*
	(5.2594)	(0.3387)	(16.5494)	(10.3668)
Democracy	23.3409**	3.1236***	-12.8349	28.6418**
	(10.2664)	(0.8719)	(24.8404)	(13.3010)
Rule of Law	-15.4884**	2.3775***	-4.1440	-16.2520
	(7.3415)	(0.6748)	(21.7637)	(13.5874)
Fertility	1.7152	-0.3086**	-0.0008	6.5902***
	(1.2047)	(0.1298)	(4.1206)	(2.1255)
Log Population	1.1304*	0.1693***	1.6020	0.1264
	(0.5795)	(0.0435)	(1.3136)	(0.9191)
Secondary Education	-0.0129	-0.0098**	0.0674	-0.1258**
	(0.0336)	(0.0038)	(0.1005)	(0.0524)
Capital Accumulation	-0.0043***	-0.0041	-0.3976	-0.2860
	(0.0170)	(0.0086)	(0.3637)	(0.1832)
Terms of Trade	0.3453	0.0006	-----	-----
	(0.0972)	(0.0022)	-----	-----
Constant	-0.0129	4.0915	1.3896	27.1810*
	(0.0336)	(1.1195)	(28.7933)	(14.6245)
N	81	81	52	57
R^2	0.803	0.803	0.345	0.579
Cost	2.9833	-0.6614**	3.9548	-5.6127
	(2.2339)	(0.3331)	(13.6710)	(7.8768)
Top Labor Constraint	1.0673	-0.1066	-5.1619	2.7310
	(1.7475)	(0.1313)	(3.3212)	(2.5741)
Cost*Top Labor Constraint	-2.0539	0.1135	12.2850	-1.8212
	(4.5666)	(0.3324)	(12.1986)	(7.7864)
Democracy	22.1880**	3.2877***	-0.8956	33.3912**
	(10.2078)	(0.8875)	(21.7754)	(14.2706)
Rule of Law	-15.9292**	2.2864***	-16.4634	-24.72184*
	(7.2063)	(0.6644)	(16.4354)	(13.9712)
Fertility	1.4240	-0.3028**	1.1323	7.334
	(1.1966)	(0.1331)	(4.6205)	(2.0614)
Log Population	0.9295	0.1751***	1.1250	-.2970
	(0.5703)	(0.0418)	(1.4531)	(0.7223)
Secondary Education	-0.0142	-0.0101***	0.0350	-0.1459
	(0.0325)	(0.0037)	(0.1169)	(0.0379)

Table 17 Continued

Capital Accumulation	0.3537***	-0.0030	-0.2352	-0.249
	(0.1028)	(0.0089)	(0.3538)	(0.1739)
Terms of Trade	-0.0116	0.0006	---	---
	(0.0154)	(0.0022)	---	---
Constant	-27.3384	3.9517***	4.8591	34.9429***
	(12.4115)	(1.1652)	(32.3701)	(11.7632)
N	82	82	52	57
R^2	0.252	0.804	0.283	0.3213
Cost	5.1411**	-0.5993**	0.7889	-1.3817
	(2.5145)	(0.3209)	(12.8613)	(6.7059)
Top Gift Expectation	5.7011***	-0.5437***	13.7437	1.0997
	(1.9276)	(0.1939)	(14.4485)	(2.1816)
Cost*Top Gift Expectation	-10.2308***	0.2308	7.0247	-7.6372
	(2.7019)	(0.3075)	(14.7191)	(5.9899)
Democracy	25.7809	3.4325	-9.0560	46.4683***
	(10.3267)	(0.9222)	(24.7185)	(9.3458)
Rule of Law	-17.5907	1.9683	-7.4969	-37.0573***
	(7.5270)	(0.7095)	(17.4691)	(10.6005)
Fertility	0.8108	-0.2933	2.6128	6.6519***
	(1.1357)	(0.1342)	(4.8753)	(2.1134)
Log Population	0.9540	0.1630	1.1139	-0.2618
	(0.5550)	(0.0425)	(1.0589)	(0.7374)
Secondary Education	-0.0400	-0.0084	0.0377	-0.1660***
	(0.0324)	(0.0039)	(0.1118)	(0.0361)
Capital Accumulation	0.3503	-0.0018	-0.1810	-0.1991
	(0.0990)	(0.0088)	(0.2833)	(0.1692)
Terms of Trade	-0.0130	0.0002	---	---
	(0.0156)	(0.0021)	---	---
Constant	-26.6433	4.1371	-0.4567	34.4548*
	(11.9352)	(1.1386)	(26.8977)	(13.3876)
N	80	80	51	56
R^2	0.318	0.809	0.375	0.615

***p<.01, **p<.05, *p<.1

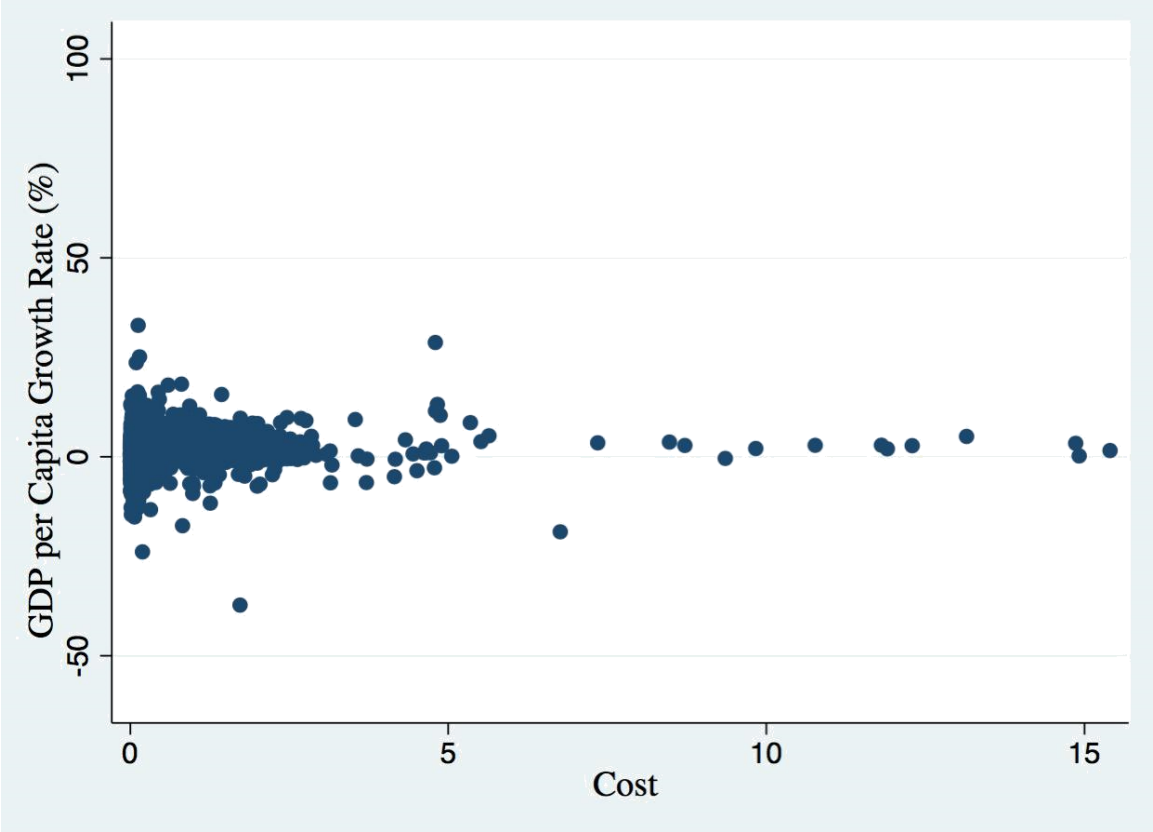

Figure 3 – GDP per Capita Growth Rates and Cost

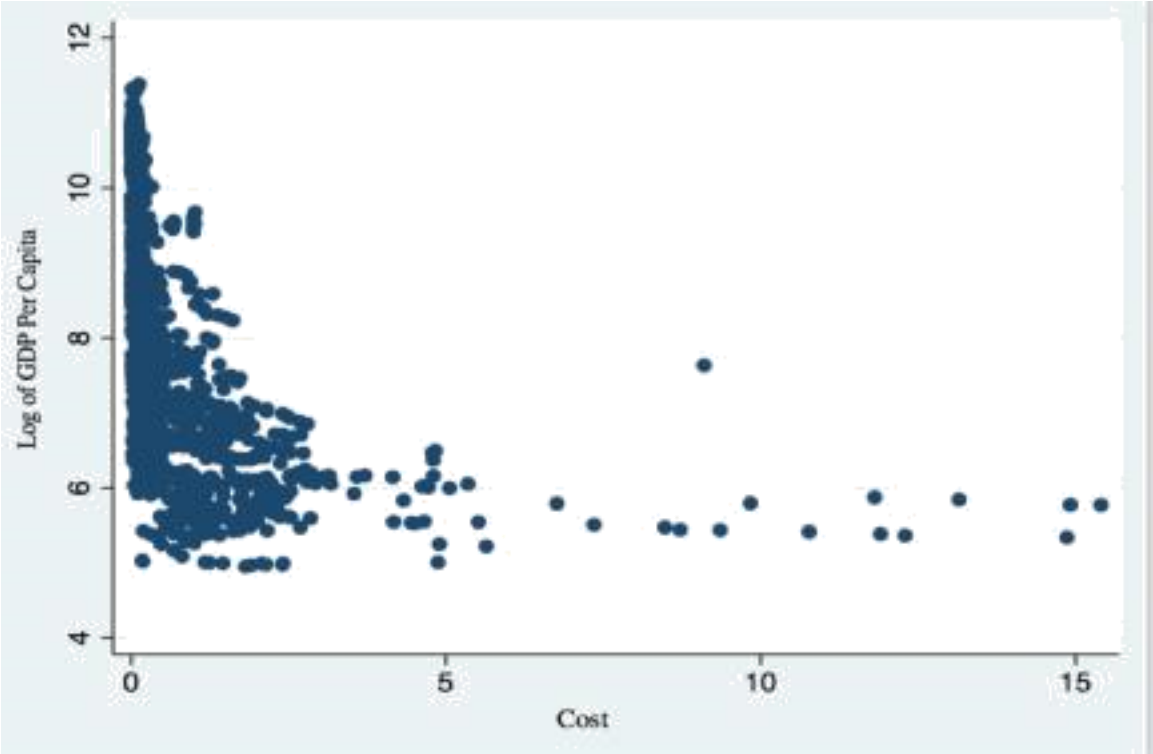

Figure 4 – Natural Log of GDP per Capita and Cost

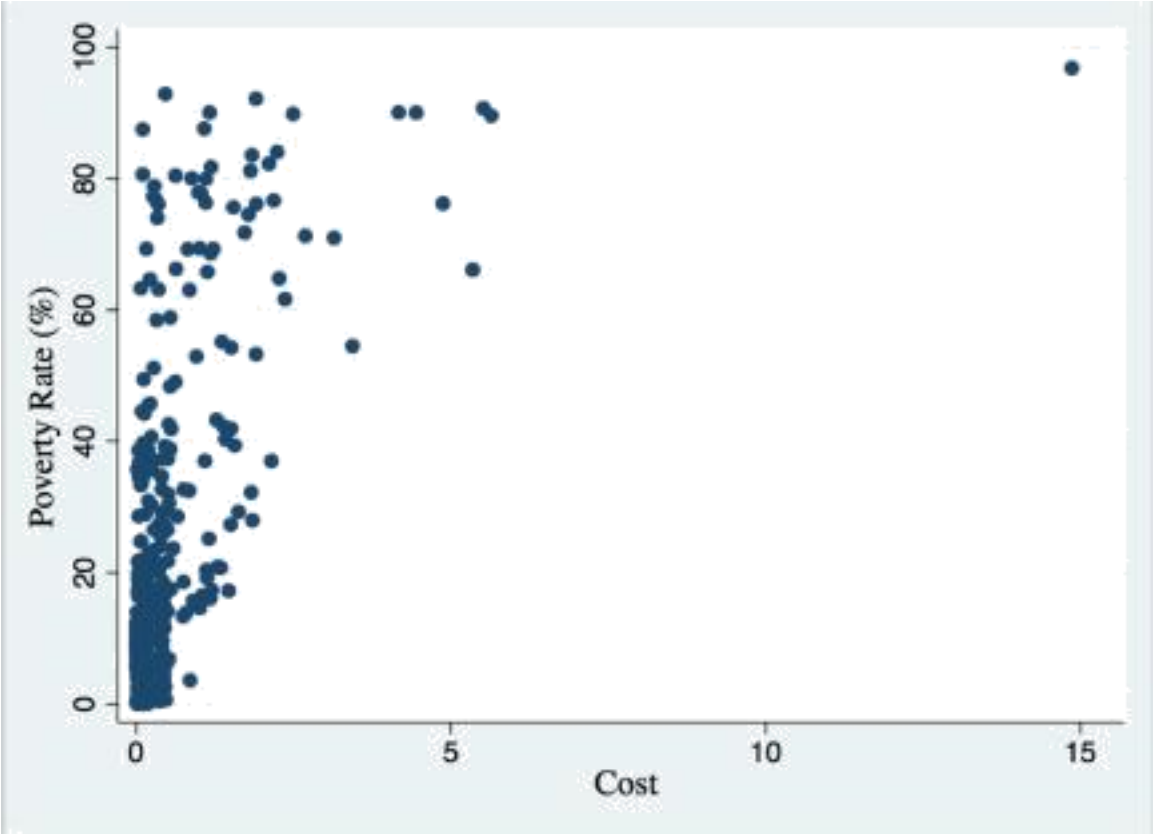

Figure 5 – Poverty Rates and Cost

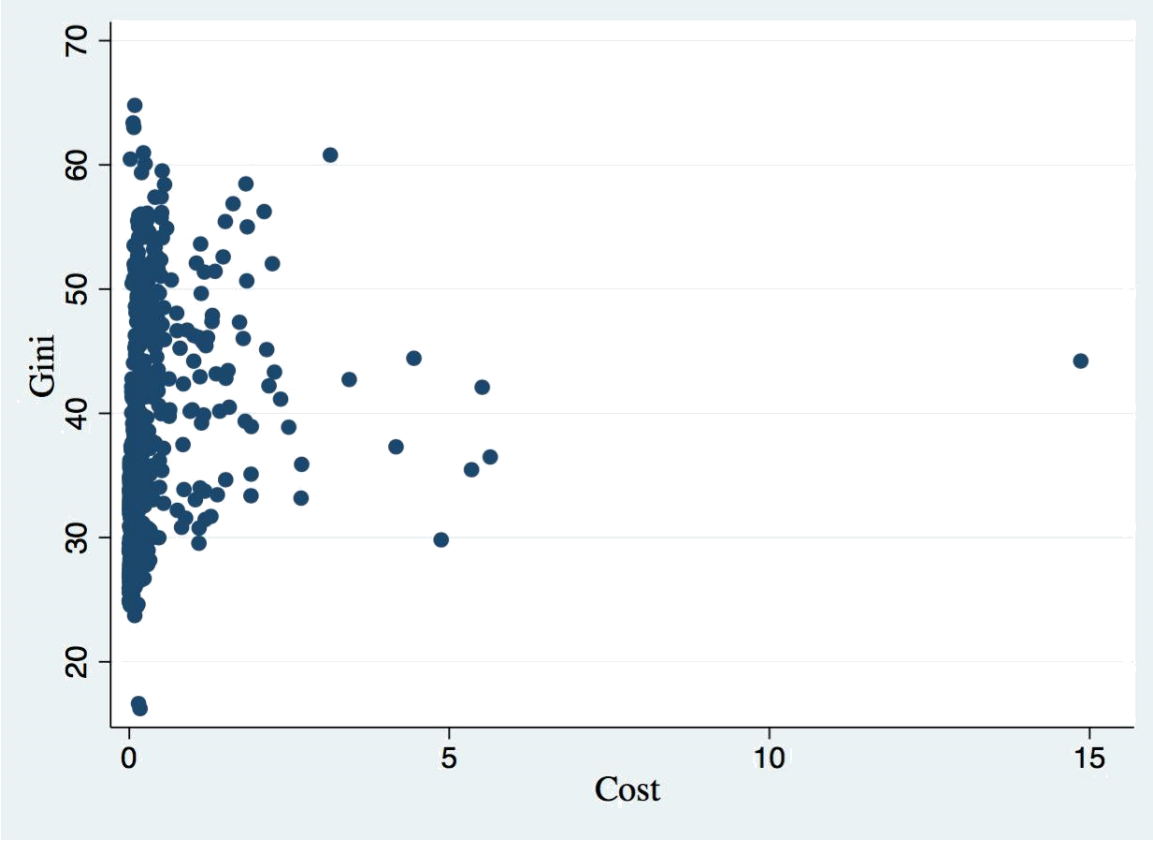

Figure 6 – Gini Index and Cost

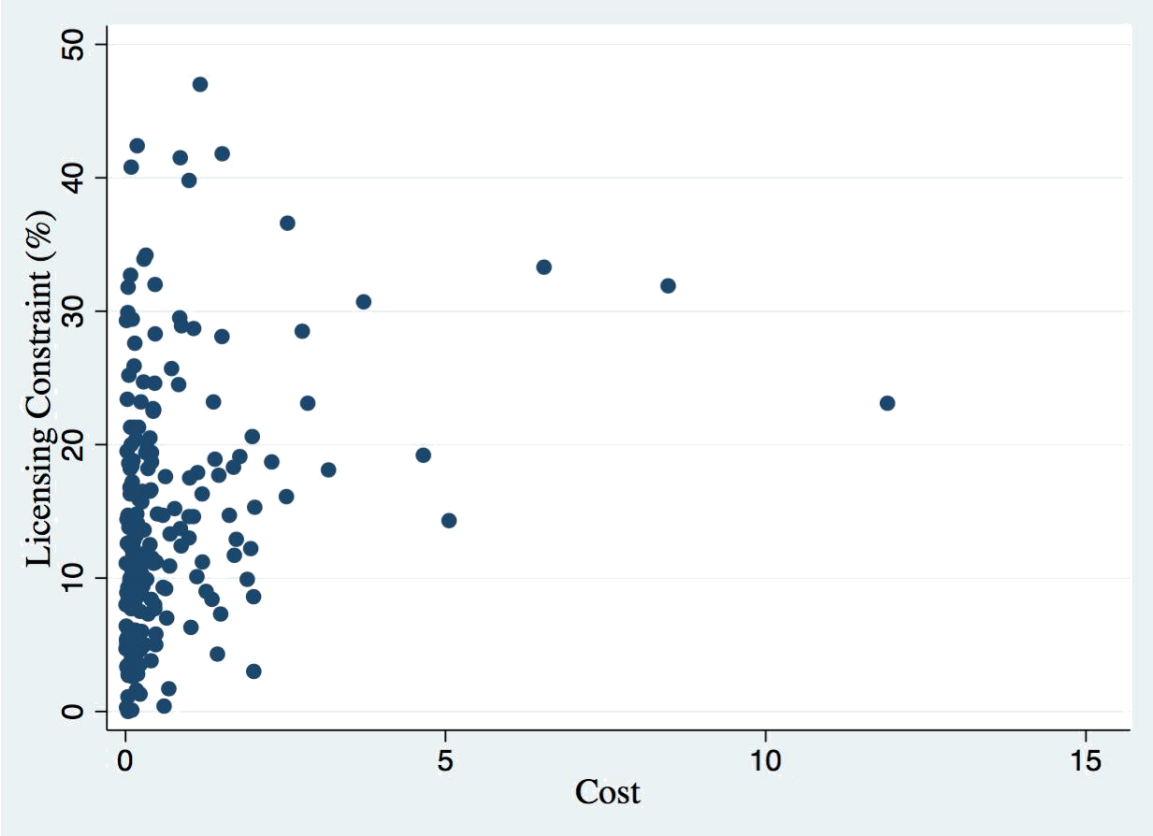

Figure 7 – Percentage of Firms Indicating Licensing To Be a Major Constraint to Operating and Cost

References:

Amin, M., and Haidar, J., (2012). The cost of registering property: does legal origin matter?. *Empirical Economics*, Volume 42, Issue 3, Pp 1035-1050.

Amin, M., and Haidar, J., (2014). Trade Facilitation and Country Size?. *Empirical Economics*, Volume 47, Issue 4, Pp 1441-1466.

Ayyagari, M., Demigiruc-Kunt, A., Maksimovic, V., (2014). Who Creates Jobs in Developing Countries? *Small Business Economics*. Volume 43. Pp. 75-99

Autio, E., and Fu, K. (2015). Economic and Political Institutions and Entry into Formal and Informal Entrepreneurship. *Asia Pacific Journal of Management*. Volume 32. Pp. 67-94

Barro, R. (1991). Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics*. Volume 106, Issue 2. Pp 407-443

Barro, R. (2000) Inequality and Growth in a Panel of Countries. *Journal of Economic Growth*. Volume 5, Issue 1. Pp 5-32.

Belayachi, Karim and Haidar, Jamal. 2008. "Competitiveness from Innovation, not Inheritance," In World Bank, Celebrating Reform 2008. Washington, DC: World Bank Group and U.S. Agency for International Development.

Braunerhjelm, P., Desai, S., Eklund, J. (2015) Regulation, Firm Dynamics, and Entrepreneurship. *European Journal of Law Economics*. Volume 40. Pp. 1-11.

Bruton, G., Ahlstrom, D., Si, S. (2015). Entrepreneurship, Poverty, and Asia: Moving Beyond Subsistence Entrepreneurship. *Asia Pacific Journal of Management*. Volume 32. Pp. 1-22.

Chowdhury, F., Terjesen, S., Audretsch, D. (2015). Varieties of Entrepreneurship: Institutional Drivers Across Entrepreneurial Activity and Country. *European Journal of Law Economics*. Volume 40. Pp. 121-148.

de Mel, S., McKenzie, D., Woodruff, C. (2012). The Demand for, and Consequences of, Formalization among Informal Firms in Sri Lanka. World Bank Policy Research Working Paper 5991. Impact Evaluation Series No. 52.

Divanbeigi, R., and Ramalho, R. (2015). Business Regulations and Growth. World Bank Global Indicators Group. Policy Research Working Paper 7299.

Djankov, S. (2009). The Regulation of Entry: A Survey. *The World Bank Research Observer*. Volume 24, Issue 2. Pp. 183-203.

Djankov, S., McLiesh, C., Ramalho, R. (2006). Regulation and Growth. The World Bank Research Group. Working Paper.

Djankov, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A. (2002) The Regulation of Entry. *The Quarterly Journal of Economics*. Volume 57, Issue Pp 1-37.

De Soto, H. (1989). *The Other Path: The Invisible Revolution in the Third World*. New York, New York. Basic Books.

De Soto, H. (2000). *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York, New York. Harper & Row.

Doing Business 2004: Understanding Regulations. The World Bank Group (2004).

Doing Business 2014: Understanding Regulations for Small and Medium-Size Enterprises. The World Bank Group (2013).

Doing Business 2015: Going Beyond Efficiency. The World Bank Group (2014).

Doing Business 2016: Measuring Regulatory Quality and Efficiency. The World Bank Group (2015).

Dreher, A., and Gassebner, M. (2013). Greasing the Wheels? The Impact of Regulations and Corruption on Firm Entry. *Public Choice*. Volume 155. Pp. 413-432.

Farrell, D. (2004). The Hidden Dangers of the Informal Economy. *McKinsey Quarterly* 2004, Issue 3.

Haidar, J., (2012). The Impact of Business Regulatory Reforms on Economic Growth. *Journal of the Japanese and International Economies*, Volume 26, Issue. Pp 285-307.

Haidar, J., (2008). Egypt: How to Raise Revenues by Lowering Fees. In World Bank, Celebrating Reform 2008. Washington, DC: World Bank Group and U.S. Agency for International Development.

Haidar, J., (2009). Protecting Investors and Economic Growth. *Economics Letters*, Volume 103, Issue 1, Pp. 1-4.

Haidar, J., (2007) How Efficiently is Capital Created? Evidence from Property Registration Reform in Egypt, in Smart Lessons in Advisory Services, International Finance Corporation.

Haidar, J. and Larbi, H., (2016). Going Beyond Doing Business to Foster Job Creation in Arab Countries. Economic Research Forum Policy Brief.

Haidar, J. and Hoshi, T., (2016). Implementing Structural Reforms in Abenomics: How to Reduce the Cost of Doing Business in Japan. Harvard University Working Paper.

Hallward-Driemeir, M., and Pritchett, L. (2015). How Business Is Done in the Developing World: Deals versus Rules. *Journal of Economic Perspectives.* Volume 29, Number 3. Pp.121-140

Hasan, R., Devashish, M., Ulubasoglu, M. (2007). Institutions and Policies for Growth and Poverty Reduction: The Role of Private Sector Development. *Asian Development Review*, Volume 24, Issue 1. Pp 69-116.

Henrique de Adrade, G., Bruhn, M., and McKenzie, D. (2014). A Helping Hand or the Long Arm of the Law? Experimental Evidence on What Governments Can Do to Formalize Firms. *The World Bank Economic Review*. Volume 30, Number 1. Pp. 25-54.

Herrendorf, F., and Teixeira, A. (2011). Barriers to Entry and Development. *International Economic Review.* Volume 52, Number 2. Pg. 573-602.

Klapper, L., Amit, R., Guillen, M. (2010). Entrepreneurship and Firm Formation across Countries in Lerner, J., Schlar, A. *International Differences in Entrepreneurship*. Pp 129-158. University of Chicago Press. Chicago, IL.

La Porta, R., Shleifer, A. (2008) The Unofficial Economy and Economic Development. Brookings Papers on Economic Activity, Economic Studies Program, The Brookings Institution, Volume39, Issue 2. Pp 275-363.

La Porta, R., and Shleifer, A. (2014). Informality and Development*. Journal of Economic Perspectives*. Volume 28, Number 4. Pp. 109-126.

McKenzie, D., Sakho, Y. (2007) Does It Pay Firms to Register for Taxes? The Impact of Formality on Firm Profitability. IZA Discussion Paper Series. IZA DP No. 3179

Mullainathan, S., Schnabl, P., (2010). Does Less Market Entry Regulation Generate More Entrepreneurs? Evidence from a Regulatory Reform in Peru in Lerner, J., Schoar, A. *International Differences in Entrepreneurship*. Pp 159-177. University of Chicago Press. Chicago, IL.

Perry, G., Maloney, W., Arias, O., Fajnzylber, P., Mason, A, Saavedra, J. (2007). *Informality: Exit and Exclusion*. World Bank Latin America and Caribbean Studies: World Bank. Washington, DC.

Rand, J., Torm N. (2012). The Benefits of Formalization: Evidence from Vietnamese Manufacturing SMEs. *World Development*. Volume 40, Number 5. Pp. 983-998

Scholar, A. (2010). The Divide between Subsistence and Transformational Entrepreneur in Lerner, J., Schoar, A. *International Differences in Entrepreneurship*. Pp 57-81. University of Chicago Press. Chicago, IL.

Schumpeter, J.A., (1950). *Capitalism, Socialism and Democracy*. New York: Harper and Row.

Thanh Thai, M., Turkina, E. (2014). Macro-level Determinants of Formal entrepreneurship Versus Informal Entrepreneurship. *Journal of Business Venturing.*Volume 29. Pph 490-510.

van Stel, A., Carree, M., Thurik, R. (2005). The Effect of Entrepreneurial Activity on National Economic Growth. *EIM Business and Policy Research*. Working Paper.

van Stel, A., Storey, D., Thruik, A. (2007). The Effect of Business Regulations on Nascent and Young Business Entrepreneurship. *Small Business Economics.* Volume 28. Pp. 171-186.