

## Increasing Tax Revenues: Do Start-up Cost, Time and Procedures Matter?

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**Abstract:** A competitive business environment is one of the major contributors in the advancement of economic growth. This is a business environment that encompasses competitive industries whose friendly entry regulations aim at encouraging enterprises to formalize their business in order to compete, grow, and ultimately attain sustainability. The government benefits from the competitiveness, growth, and sustainability of these players. The benefits are translated in terms of the increased tax revenues collected from registered enterprises. Little is known as to whether the entry regulations have any relationship with tax revenues. Literature confirms that the entry regulations are mainly defined in terms of cost of start-up procedures incurred, time spent, and procedures undertaken when establishing a new business. Therefore, this study sought to establish the contribution of cost, time, and procedures on tax revenues. The study relied on data from 100 countries, for a period of 2010 to 2017. The multiple regression analysis confirms that the number of procedures negatively relates with tax revenues. Similar relationships exist between cost and tax revenues for 2010 to 2012, but not 2013 to 2017. However, relationships between time and tax revenues do not exist. The study suggests that governments need to devise and adopt initiatives that seek to relax entry regulations particularly the reduction of cost and procedures in order to encourage more business registrations and eventually, increase employment and government revenues. It is also suggested that care should be taken when relaxing regulations in order to stimulate innovative entrepreneurship, and discourage entry of non innovative ideas in the markets.

**Keywords:** Entry regulations; cost; time; procedures; tax revenues

**JEL Classification:** H20; M13

### 1. Introduction

Entrepreneurship can be measured by new business creation (Munemo, 2015). The new created businesses play a vital role in advancing the socioeconomic development of the respective economy. The new businesses provide employment opportunities, bring new innovations in the industries, and are the major sources of government revenues. The collected tax revenues provide the government with power to fulfil its obligations to its people and accelerate economic growth.

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However, in order to realize more new business registrations in the economy, the simplification of doing business needs to be greatly advocated by the government. According to Asongu & Odhiambo (2019), the simplification of doing business allows entrepreneurs to pioneer innovations that ultimately impact the living standards of both business stakeholders and the relevant communities. The registration of more businesses positively impacts the development of physical and social infrastructures, employment growth, and improvement of private and public services. It also allows the match between idea generation and productivity, and attracts new capital in the economy. Since the registration of more businesses fosters job creation, these jobs are expected to increase both consumption and taxes (Asongu & Odhiambo, 2019). However, in order to enhance entrepreneurship and attract more business registration, research has already indicated that reforms in procedural or administrative requirements must be done. The suggestions inform that these reforms should consider the entry regulations, taxation issues, and how the regulations will be implemented (Audretsch, Belitski, & Desai, 2019). In this regard, it is worth asserting that there is a relationship between business regulations reforms and increased tax revenues. These regulations that are to a great extent characterised by procedural and administrative requirements need to be friendly in order to encourage entrepreneurs to start their businesses and ultimately contribute significantly in raising tax revenues. According to van Stel, Storey, & Thurik (2007), time, cost, and number of procedures to be undertaken when registering a new business are the major administrative considerations of starting a business. Therefore, reforms in business regulations need to devise mechanisms that will guarantee the friendliness of these requirements, particularly the time, cost, and number of procedures so that they can be used to influence more business registrations. The friendliness of the business regulations defines an economy's enhanced regulatory framework. This framework, that encompasses the cost, time, and procedures of starting a new business, plays a vital role in influencing entrepreneurs to create new businesses (Trifu, Gîrneală, & Potcovaru, 2015). Therefore, in order to influence entrepreneurs to formally operate their new enterprises, cost, time, and procedures can be defined in terms of reasonably short time spent in registering a business, affordable cost incurred in registering a business, and a considerably low number of procedures undertaken by a prospective investor before legally operating a business respectively. This study holds the view that the relationship between entry regulation framework and tax revenues can be established. Little research has been done on the relationship between business registration requirements and tax revenues. The aim is to find whether the friendliness of these requirements positively influence government revenues. Specifically, the study aimed at finding whether the cost of business start-up procedures, time spent, and the number of procedures undertaken in establishing business relate with the level of tax revenues. This study involves data from individual economies around the globe to establish these relationships. The

findings of this study play a vital role in deepening an understanding on the nature of the entry regulation framework and its contribution to economic growth particularly in influencing government financial power through increased tax revenues. The study aimed at developing knowledge on the interconnectedness between business registrations and tax revenues, so that this knowledge can be utilized by the relevant business registration players, tax practitioners, and the policy development bodies in devising strategies that foster the friendliness of the business registration environments in different economies around the globe.

## **2. Literature Review**

### **2.1. Competitive Business Environment and Entry Regulations**

Businesses grow in a friendly and a competitive business environment. This is an environment whose business regulations, administrative procedures, and the relevant policies seek to support the growth of enterprises and their corresponding sectors. This growth is characterised by the firms' ability to produce, sell, make profit, and attain sustainability. The growth should be defined in terms of ability to adopt the right technology, innovation, and capabilities to compete in both domestic and foreign markets. Asongu & Odhiambo (2019) argue that a competitive business environment needs to embrace the use of suitable technology, and enable players to sell beyond borders. They further claim that an enhanced business environment paves way for the improvement of investment, consumption, and exports that altogether foster an increased GDP. Kindsfaterienė & Lukaševičius (2008) add that a friendly business environment encompasses a friendly tax system that positively impacts business development and the creation of honest business. Generally, a friendly business environment encompasses both policies and practices that influence more business registrations. According to Antunes & Cavalcanti (2007), friendly policies should be instituted in the business environment in order to simplify the entry of new businesses and allow the formalization of their informal assets.

Friendly business regulations foster the creation of new firms and economic growth (Divanbeigi & Ramalho, 2015). They encourage smooth provision of licences and other related documents in an affordable manner (Keter, 2012). Friendly regulations attract the registration of new entrants. For example, when reforms are done in the entry regulations, they are likely to induce unregistered businesses to register and operate in the formal sector (Branstetter, Lima, Taylor, & Venâncio, 2014). Once friendly business regulations are instituted, the labour, land and capital will greatly be employed in the economy and ultimately improve government revenues and GDP (Asongu & Odhiambo, 2019). Friendly entry regulations influence a positive relationship between foreign direct investment and total

domestic investment, and ultimately foster economic growth. This relationship is of paramount importance due to the fact that through foreign direct investments, local business sectors get access to new knowledge and entrepreneurial competency that drive productivity and growth (Munemo, 2014). On the other hand, unfriendly entry regulations discourage new firm creation. Reforms in such regulations are needed in order to influence the massive creation of domestic enterprises and attract sizeable FDI in respective economies. Ultimately, entrepreneurship will be increased. This is because; the interconnectedness between FDI and entrepreneurship depends heavily on the fairness of the entry regulations (Munemo, 2015). These reforms should seek to create honest businesses in order to influence industry competitiveness. From a study that involved 172 economies, we find that reforms on business regulations stimulate economic growth (Haidar, 2012). The reforms in business regulations should also focus on costs pertaining to compliance. Keter (2012) argues that the costs related to compliance ought to be reduced in order to prevent unnecessary business failures. Favourable regulations need to foster compliance willingly. In some countries, and particularly based on the analysis that involved 85 economies, it was concluded that heavier regulations pose greater costs on business entry, and they also attract corruption and ultimately influence the creation of sizable unofficial economy (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2002). In most of the developing economies, there is enough evidence suggesting that some entrepreneurs have been embracing the informal sector in order to escape the burdensome business regulations (van Stel, Storey, & Thurik, 2007). However, when regulations are well designed, they are likely to become sources of innovation and new market opportunities particularly for small enterprises. These are regulations whose primary objective is not merely instituting compliance. Instead, they seek to support businesses and enable them to innovate and exploit opportunities that emanate from the regulatory framework (Kitching, Hart, & Wilson, 2015). It is argued that the regulatory frameworks should provide a friendly map in the regulation of businesses without posing any hindrances to their growth. A friendly regulatory environment does not pose any burden such as wastage of both unnecessary costs and time of the firms. Instead, it allows businesses to direct more of their resources in devising strategies and implementing programs that work (Keter, 2012).

## **2.2. Entry Regulations and Tax Revenues**

As noted earlier, the contribution of entry regulations in the registration of more enterprises is significant. Their significance goes beyond the creation of new firms. Registered enterprises that operate in a competitive business environment are likely to maximize their profit and ultimately increase the government's tax revenues. The business start-up regulations can be defined in terms of both the procedures

undertaken in order to establish a new business, and the number of days required to obtain the legal status of the new business (Chambers, McLaughlin, & Stanley, 2019). The costs involved in the establishment of new business also characterize the entry regulations. Most of the enterprises in many countries register with more than one government agency when they seek to become formal. Each registration involves some costs (Bruhn & McKenzie, 2014). However, the burdensome entry cost is to a great extent discouraging businesses to become formal (Antunes & Cavalcanti, 2007; Bruhn & McKenzie, 2014). Although not all formal enterprises receive the most widely touted benefits of business formalization, particularly access to finance and business relationships with the government (de Mel, McKenzie, & Woodruff, 2013), economies that place burdensome registration requirements are indirectly declining an opportunity to increase their revenues. This is due to the fact that the burdensome regulations encourage businesses to operate informally and get an opportunity to escape from tax obligations. Additionally, to a great extent, most of the necessity entrepreneurs in developing economies are the ones interested in operating informally as a viable technique of avoiding business regulations (van Stel, Storey, & Thurik, 2007). In this regard, entrepreneurship is heavily damaged. Apart from cost, time, and procedures, the damage is also sometimes influenced by the capital requirements as a condition in the establishment of a new business (Dreher & Gassebner, 2013). Additionally, even after completing the respective registrations, businesses meet other regulations including those associated with tax and labour, and ultimately influence their decision to become partly informal (Bruhn & McKenzie, 2014).

A study that involved data from 127 countries revealed that enterprises that operated informally had greater sales, productivity, and employment growth than their counterparts that operated formally. Unregistered enterprises particularly in developing economies record this growth due to the fact their resources are likely to be directed in overcoming other liability of newness. Although the registration of business may pose some benefits such as access to finance, and formal business networks, but registration in most of the developing economies is perceived as an exercise that adds more costs (Williams, Martinez-Perez, & Kedir, 2017). A burdensome exercise discourages the legality of future taxpayers. The barriers to legality can be defined in terms of the required cost and the procedures to be undertaken in the establishment of new business (Antunes & Cavalcanti, 2007). In Africa, for example, the costs associated with the establishment of new business are very high. There are many procedures undertaken in the establishment of the business, a process that sometimes attracts corruption. The process involves high costs associated with a lot of registration and licensing requirements. A lot of time is spent in this process (Asongu & Odhiambo, 2019). Economies that are characterised by high productivity have a low level of corruption, an enhanced legal system, and a lower business start-up cost and tariff (Zoega, 2015). Therefore,

high productivity and increased tax revenues are likely to be recorded in countries that have significantly established mechanisms of simplifying the new business registration process including the reduction of the respective cost, time and procedures. However, in order to reduce cost, time, and procedures involved in establishing new business, the adoption of a digitalization process is of paramount importance and acts as a viable strategy in encouraging more businesses to register and become formal (Asongu & Odhiambo, 2019). Intention to enhance business environment and taxation needs to be reflected in the readiness to devise friendly policies that benefit current and prospective businesses. This intention should also be reflected in the reduction of time and cost of starting a business (Munyanyi & Chiromba, 2015).

### 3. Methodology

As noted earlier, the aim of this study was to find whether tax revenues can be influenced by the cost of business start-up procedures, time required to start a business, and the start-up procedures to register a business for the years 2010 to 2017. The study based on the post-recession period (after the great recession of 2007 to 2009). The paper intended to draw a global picture that would be used by individual governments around the globe to understand and enhance areas that can boost their revenues. Therefore, the study employed secondary data from the World Bank and realized that a total of 264 countries and regions were included in the World Bank data. Hence, the regions were removed in order to remain with individual countries. This is due to the fact that regions combine data from individual countries, and in this case, the aim was to avoid data redundancy. After removing 47 regions, the study remained with data from 217 countries. Furthermore, in order to maintain homogeneity, all countries that had missing data in any year from 2010 to 2017 on any variable were removed. In this case, the study remained with 100 countries (see Table 1) with data on all the three independent variables and a dependent variable. The three independent variables are: the cost of business start-up procedures (Cost), time required to start a business (Time), and the start-up procedures (Procedures). According to the World Bank data, the cost of business start-up procedures is measured in percentage of GNI per capita while the time required to start a business is measured in days. Additionally, the start-up procedures to register a business are measured as number of procedures. On the other hand, the dependent variable: tax revenues (TaxRevenues), was measured in percentage of GDP. In order to test the relationship between the dependent and independent variables, a multiple regression analysis was adopted. In this regard, several assumptions were tested. For each of the years (2010 to 2017), it was realized that the partial regression plots showed linear relationships between *TaxRevenues* and each of the respective

independent variables: *Cost, Time, Procedures*. It was also realized that there was homoscedasticity based on the visual inspection of the studentized residuals plotted against the unstandardized predicted values. It was also found that there was no evidence of multicollinearity. This is due to the fact that the study examined all the tolerance values and found that they were all greater than 0.1. All their corresponding VIF values were less than 10. Upon checking for unusual points, it was realized that all the residuals were less than  $\pm 3$  standard deviations (no any outlier), and there were neither high leverage points nor highly influential points. The study also examined all the histograms and realized that the standardized residuals appeared to be approximately normally distributed. On the other hand, based on the normal P-P Plot of regression standardized residual, it was found that the residuals were approximately normally distributed.

**Table 1. Countries Used in the Study**

Country Name			
Afghanistan	Germany	Korea, Rep.	Peru
Angola	Denmark	Lebanon	Philippines
Argentina	Dominican Republic	St. Lucia	Palau
Armenia	Spain	Sri Lanka	Poland
Australia	Estonia	Lesotho	Portugal
Austria	Ethiopia	Lithuania	Paraguay
Azerbaijan	Finland	Luxembourg	West Bank and Gaza
Belgium	Fiji	Latvia	Romania
Burkina Faso	France	Morocco	Saudi Arabia
Bulgaria	Micronesia, Fed. Sts.	Moldova	Singapore
Bahamas, The	United Kingdom	Madagascar	El Salvador
Bosnia and Herzegovina	Georgia	Marshall Islands	Slovak Republic
Belarus	Equatorial Guinea	North Macedonia	Slovenia
Belize	Greece	Mali	Sweden
Bhutan	Croatia	Mongolia	Togo
Botswana	Hungary	Mozambique	Thailand
Canada	Ireland	Mauritius	Timor-Leste
Switzerland	Iceland	Malawi	Turkey
Chile	Israel	Malaysia	Tanzania
Cote d'Ivoire	Italy	Namibia	Ukraine
Colombia	Jamaica	Nicaragua	Uruguay
Cabo Verde	Jordan	Netherlands	St. Vincent and the Grenadines
Costa Rica	Kazakhstan	Norway	Vanuatu
Cyprus	Cambodia	Nepal	South Africa
Czech Republic	St. Kitts and Nevis	New Zealand	Zambia

### 3. Results

#### 3.1. Descriptive Statistics

Results reveal that from 2010 to 2014 there was a gradual increase in tax revenues based on the average world data. According to Table 2, it declined in 2015 and thereafter increased gradually up to 2017. On the other hand, there has been a gradual decline in the average cost of business start-up procedures from 2010 to 2017. The gradual decline, according to Table 2, has also been realized in the average time required to start a business from 2010 to 2017. Similarly, the average number of start-up procedures to register a business for the years 2010 to 2017 gradually declined. However, the study argues that care should be taken when interpreting these statistics. This argument lies in the fact that the average figures may not draw a true picture of the trend of tax revenues, cost of business start-up procedures, time required to start a business, and the number of start-up procedures to register a business in individual economies.

**Table 2. Descriptive Statistics**

Year	Variable	N	Minimum	Maximum	Mean	Std. Deviation
2010	<i>TaxRevenues</i>	100	2.53	32.74	17.0878	5.61477
	<i>Cost</i>	100	.00	486.90	36.2080	88.34652
	<i>Time</i>	100	.50	155.00	26.9030	25.92893
	<i>Procedures</i>	100	1.00	18.00	7.6400	3.07981
2011	<i>TaxRevenues</i>	100	2.33	32.75	17.3911	5.65534
	<i>Cost</i>	100	.00	484.50	31.4900	83.09960
	<i>Time</i>	100	.50	150.00	24.5880	23.95167
	<i>Procedures</i>	100	1.00	18.00	7.3400	3.03255
2012	<i>TaxRevenues</i>	100	2.54	35.24	17.6625	6.06975
	<i>Cost</i>	100	.00	435.60	27.2630	73.88012
	<i>Time</i>	100	.50	150.00	23.4430	22.85617
	<i>Procedures</i>	100	1.00	18.00	7.3100	3.05735
2013	<i>TaxRevenues</i>	100	2.73	33.82	17.7994	5.93921
	<i>Cost</i>	100	.00	388.50	21.5220	62.75087
	<i>Time</i>	100	.50	150.00	22.0030	22.68050
	<i>Procedures</i>	100	1.00	18.00	7.0400	3.04153
2014	<i>TaxRevenues</i>	100	2.77	36.50	18.0419	6.03971
	<i>Cost</i>	100	.00	308.50	15.6310	48.30247
	<i>Time</i>	100	.50	150.00	20.3880	21.51602
	<i>Procedures</i>	100	1.00	18.00	6.8900	3.05470
2015	<i>TaxRevenues</i>	100	3.33	33.92	17.8048	5.94449
	<i>Cost</i>	100	.00	274.40	12.3940	35.98379
	<i>Time</i>	100	.50	150.00	19.1680	20.88930
	<i>Procedures</i>	100	1.00	18.00	6.7400	3.08014
2016	<i>TaxRevenues</i>	100	3.39	37.75	17.9002	6.14263
	<i>Cost</i>	100	.00	260.10	9.9320	30.84184
	<i>Time</i>	100	.50	149.00	18.7630	20.78096
	<i>Procedures</i>	100	1.00	17.00	6.6300	3.05060
2017	<i>TaxRevenues</i>	100	3.38	33.37	18.0453	5.79539
	<i>Cost</i>	100	.00	268.60	8.5710	29.22044
	<i>Time</i>	100	.50	99.00	17.2180	16.10630
	<i>Procedures</i>	100	1.00	17.00	6.5200	2.93870



## 4.2. Multiple Regression Results

A multiple regression was run to predict *TaxRevenues* from *Cost*, *Time*, and *Procedures* for the years 2010 to 2017. For the year 2010, the variables: *Cost*, *Time*, and *Procedures* statistically significantly predicted *TaxRevenues*,  $F(3, 96) = 8.338$ ,  $p < .0005$ , adj.  $R^2 = .182$ . Two variables: *Cost* and *Procedures* added statistically significantly to the prediction,  $p = .018$  and  $p < .0005$  respectively. However, *Time* did not add statistically significantly to the prediction,  $p = .166$ . Regression coefficients and standard errors for the year 2010 can be found in Table 3. On the other hand, a multiple regression was run to predict *TaxRevenues* from *Cost*, *Time*, and *Procedures* for the year 2011. The variables: *Cost*, *Time*, and *Procedures* statistically significantly predicted *TaxRevenues*,  $F(3, 96) = 7.827$ ,  $p < .0005$ , adj.  $R^2 = .171$ . Two variables: *Cost* and *Procedures* added statistically significantly to the prediction,  $p = .033$  and  $p < .0005$  respectively. However, *Time* did not add statistically significantly to the prediction,  $p = .199$ . Regression coefficients and standard errors for the year 2011 can be found in Table 3. Similarly, a multiple regression was run to predict *TaxRevenues* from *Cost*, *Time*, and *Procedures* for the year 2012. The variables: *Cost*, *Time*, and *Procedures* statistically significantly predicted *TaxRevenues*,  $F(3, 96) = 6.489$ ,  $p < .0005$ , adj.  $R^2 = .143$ . Two variables: *Cost* and *Procedures* added statistically significantly to the prediction,  $p = .048$  and  $p < .0005$  respectively. However, *Time* did not add statistically significantly to the prediction,  $p = .138$ . Regression coefficients and standard errors for the year 2012 can be found in Table 3. Also, a multiple regression was run to predict *TaxRevenues* from *Cost*, *Time*, and *Procedures* for the year 2013. The variables: *Cost*, *Time*, and *Procedures* statistically significantly predicted *TaxRevenues*,  $F(3, 96) = 5.950$ ,  $p = .001$ , adj.  $R^2 = .130$ . One variable: *Procedures* added statistically significantly to the prediction,  $p < .0005$ . However, two variables: *Cost* and *Time* did not add statistically significantly to the prediction,  $p = .206$  and  $p = .125$  respectively. Regression coefficients and standard errors for the year 2013 can be found in Table 3. Again, a multiple regression was run to predict *TaxRevenues* from *Cost*, *Time*, and *Procedures* for the year 2014. The variables: *Cost*, *Time*, and *Procedures* statistically significantly predicted *TaxRevenues*,  $F(3, 96) = 5.614$ ,  $p = .001$ , adj.  $R^2 = .123$ . One variable: *Procedures* added statistically significantly to the prediction,  $p < .0005$ . However, two variables: *Cost* and *Time* did not add statistically significantly to the prediction,  $p = .137$  and  $p = .127$  respectively. Regression coefficients and standard errors for the year 2014 can be found in Table 3. Furthermore, a multiple regression was run to predict *TaxRevenues* from *Cost*, *Time*, and *Procedures* for the year 2015. The variables: *Cost*, *Time*, and *Procedures* statistically significantly predicted *TaxRevenues*,  $F(3, 96) = 5.399$ ,  $p = .002$ , adj.  $R^2 = .118$ . One variable: *Procedures* added statistically significantly to the prediction,  $p < 0.0005$ . However, two variables: *Cost* and *Time* did not add statistically significantly to the prediction,  $p =$

.224 and  $p = .070$  respectively. Regression coefficients and standard errors for the year 2015 can be found in Table 3. Moreover, a multiple regression was run to predict *TaxRevenues* from *Cost*, *Time*, and *Procedures* for the year 2016. The variables: *Cost*, *Time*, and *Procedures* statistically significantly predicted *TaxRevenues*,  $F(3, 96) = 6.590$ ,  $p < .0005$ , adj.  $R^2 = .145$ . One variable: *Procedures* added statistically significantly to the prediction,  $p = .001$ . However, two variables: *Cost* and *Time* did not add statistically significantly to the prediction,  $p = .074$  and  $p = .383$  respectively. Regression coefficients and standard errors for the year 2016 can be found in Table 3. Finally, a multiple regression was run to predict *TaxRevenues* from *Cost*, *Time*, and *Procedures* for the year 2017. The variables: *Cost*, *Time*, and *Procedures* statistically significantly predicted *TaxRevenues*,  $F(3, 96) = 5.557$ ,  $p = .001$ , adj.  $R^2 = .121$ . One variable: *Procedures* added statistically significantly to the prediction,  $p < .0005$ . However, two variables: *Cost* and *Time* did not add statistically significantly to the prediction,  $p = .230$  and  $p = .078$  respectively. Regression coefficients and standard errors for the year 2017 can be found in Table 3.

**Table 3. Multiple Regression Results (2010 to 2017)**

Year	<i>TaxRevenues</i>	<i>B</i>	95% CI for <i>B</i>		<i>SE B</i>	$\beta$	$R^2$	$\Delta R^2$
			<i>LL</i>	<i>UL</i>				
2010	Model						.207	.182***
	Constant	23.264***	20.467	26.060	1.409			
	<i>Cost</i>	-.014*	-.026	-.002	.006	-.225*		
	<i>Time</i>	.035	-.015	.086	.025	.163		
	<i>Procedures</i>	-.865***	-1.279	-.452	.208	-.475***		
2011	Model						.197	.171***
	Constant	23.486***	20.691	26.281	1.408			
	<i>Cost</i>	-.014*	-.027	-.001	.007	-.210*		
	<i>Time</i>	.037	-.020	.095	.029	.158		
	<i>Procedures</i>	-.894***	-1.329	-.460	.219	-.480***		
2012	Model						.169	.143***
	Constant	23.592***	20.580	26.603	1.517			
	<i>Cost</i>	-.016*	-.031	.000	.008	-.189*		
	<i>Time</i>	.048	-.016	.111	.032	.180		
	<i>Procedures</i>	-.906***	-1.375	-.438	.236	-.457***		
2013	Model						.157	.130**
	Constant	23.473***	20.559	26.388	1.468			
	<i>Cost</i>	-.011	-.029	.006	.009	-.120		
	<i>Time</i>	.050	-.014	.114	.032	.190		
	<i>Procedures</i>	-.927***	-1.401	-.453	.239	-.475***		
2014	Model						.149	.123**
	Constant	23.526***	20.589	26.462	1.479			
	<i>Cost</i>	-.018	-.041	.006	.012	-.142		
	<i>Time</i>	.054	-.016	.125	.035	.194		
	<i>Procedures</i>	-.917***	-1.410	-.424	.248	-.464***		
2015	Model						.144	.118**
	Constant	22.885***	20.079	25.691	1.414			
	<i>Cost</i>	-.019	-.050	.012	.016	-.116		
	<i>Time</i>	.065	-.005	.136	.036	.229		
	<i>Procedures</i>	-.904***	-1.382	-.426	.241	-.468***		
2016	Model						.171	.145***
	Constant	23.339***	20.533	26.146	1.414			
	<i>Cost</i>	-.034	-.071	.003	.019	-.170		
	<i>Time</i>	.031	-.040	.102	.036	.106		
	<i>Procedures</i>	-.858**	-1.338	-.379	.241	-.426**		
2017	Model						.148	.121**
	Constant	22.868***	20.180	25.556	1.354			
	<i>Cost</i>	-.023	-.060	.015	.019	-.115		
	<i>Time</i>	.077	-.009	.164	.043	.215		
	<i>Procedures</i>	-.914***	-1.384	-.443	.237	-.463***		

*B* = unstandardized regression coefficient; CI = confidence interval; *LL* = lower limit; *UL* = upper limit; *SE B* = standard error of the coefficient;  $\beta$  = standardized coefficient;  $R^2$  = coefficient of determination;  $\Delta R^2$  = adjusted  $R^2$

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

## 5. Discussion

The multiple regression results have indicated that there are linear relationships between tax revenues and the cost of business start-up procedures for the years 2010, 2011, 2012. These relationships are negative, confirming that tax revenues are likely to increase when the cost of business start-up goes down. However, the relationships between tax revenues and the cost of business start-up procedures for the years 2013, 2014, 2015, 2016, and 2017 do not exist. Nevertheless, the findings inform that there are also negative linear relationships between tax revenue and start-up procedures to register a business for the years 2010, 2011, 2012, 2013, 2014, 2015, 2016, and 2017. These relationships confirm that tax revenues are likely to increase when the number of procedures to register a business decreases. However, there are no any linear relationships between tax revenues and the time required to start a business for the years 2010, 2011, 2012, 2013, 2014, 2015, 2016, and 2017.

Costly regulations discourage the creation of new enterprises (Klapper, Laeven, & Rajan, 2006). The growth of industries cannot be realized without the formation of new firms. These enterprises create jobs, and influence economic growth. From this growth, governments benefit through an increased tax revenues. Therefore, in order to collect more revenues, governments need to create friendly business environments that can reduce the number of start-up procedures to register a business as revealed by the findings. The study also argues that the number of start-up procedures is indirectly related with both the cost of business start-up procedures, and the time required to start a business. This is due to the fact that an increased number of procedures can increase both cost and time. In this regard, it is very tempting to argue that the negative linear relationship between time required to start a business and tax revenues, was anticipated for all years (2010 to 2017). However, the findings inform that there are no any linear relationships between tax revenues and the time required to start a business for the years 2010 to 2017. Moreover, it was also tempting to conclude that the findings would confirm the negative linear relationship between the cost of business start-up procedures and tax revenues for all years (2010 to 2017). Only the first three years (2010 to 2012) recorded such a relationship. There was no any relationship in the subsequent years. However, the high start-up cost hinders the creation of new business and jobs (Fonseca, Lopez-Garcia, & Pissarides, 2001). As stated earlier, this study argues that the relationship between start-up cost and tax revenues is unavoidable. This is due to the fact that the creation of new enterprises and jobs that are influenced by the reduced start-up cost, are one of the major drivers of tax revenues. The study still encourages governments to reduce the start-up cost in order to encourage the creation of new enterprises and jobs, and ultimately increase their tax revenues. In doing so, caution must be taken. This is because, although the reduction of start-up cost may influence an increased quantity of entrepreneurship,

care must be taken to safeguard the quality of entrepreneurship (Darnihamedani, Block, Hessels, & Simonyan, 2018). In their studies, Darnihamedani, Block, Hessels, & Simonyan (2018, p. 365) reveal that “countries with high levels of start-up costs seem to have a higher share of innovative entrepreneurship”. Although heavy entry regulations can influence both corruption, and poor products (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2002), they are “typically not considered as a source of costs that take away the prize of entrepreneurial innovation” (Darnihamedani, Block, Hessels, & Simonyan, 2018, p. 366). This is due to the fact that entrepreneurs with innovative ideas are ready to incur any start-up cost with anticipation that such cost will be offset by the future returns on their business. Therefore, although this study advises governments to relax regulations so that the quantity of entrepreneurship can be increased, and subsequently increase tax revenues, they need to establish mechanisms that will safeguard entrepreneurs with innovative ideas. This can be done by occasionally tightening some of the regulations in order to discourage the entry of non promising ideas in the market (Darnihamedani, Block, Hessels, & Simonyan, 2018). This is likely to be a great reward to innovation, and ultimately it will influence the entrants of innovative start-ups, industry growth, employment, and eventually high tax revenues.

## 6. Conclusion

This study aimed at finding whether tax revenues can be influenced by the cost of business start-up procedures, time required to start a business, and the start-up procedures to register a business for the years 2010 to 2017. The study used data from 100 countries and subsequently revealed that the number of procedures to register a business negatively relates with tax revenues. Similar relationship exists between the cost of business start-up procedures and tax revenues for the years 2010 to 2012 and not 2013 to 2017. There was however no any relationship between tax revenues and the time required to start a business for the years 2010 to 2017. The study concludes that governments need to influence their tax revenues by establishing mechanisms that attract new business. One of the mechanisms is to relax regulations. This means that the reduction of both cost of business start-up procedures, and procedures to register a business should be prioritized. This study recommends that care should be taken when relaxing regulations in order to motivate innovative entrepreneurship, and discourage entry of non-innovative ideas in the markets. The study argues that governments need to develop policies that seek to influence the creation of new enterprises, and foster friendly business environments. Such environments are likely to attract investments and accelerate industry growth. Ultimately, there will be an increase in government collection, employment, and innovative entrepreneurship in various economies around the globe.

## 7. Study Limitations

This study relied on the data from different economies to come up with a global overview on the relationship between tax revenues and the cost of business start-up procedures, time required to start a business, and the start-up procedures to register a business for the years 2010 to 2017. It is believed that a global picture is not likely to be effective in each individual economy due to the fact that business environments differ from one country/region to another. Therefore, this study recommends that more studies should be carried out to understand the characteristics of the independent variables, and their influence based on individual country's/region's environments.

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