

# Doing Business and Africa's Economic Performance

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# Table of Contents

Abstract.....	3
1. Introduction.....	4
2. Literature Review.....	6
3 Data.....	12
4. Empirical Specifications.....	15
5. Results.....	17
5.1 Estimation Results.....	19
6. Conclusion.....	23
References.....	26
Appendix.....	29

## *ABSTRACT*

Using the World Bank's *Doing Business* report on 47 African countries, I analyze the effect of doing business on economic performance in Africa. The study uses GDP per capita to measure economic performance and it considers variability in the *Doing Business* indicators by using selected indicators with high variability in their figures. In order to consider out-of-steady state dynamics and to ensure convergence, lagged indicators as well as information derived from the resource curse literature were used as explanatory variables. The analysis shows an overall significant effect of ease of business on economic performance. However, some coefficient indicators show no significant effect on GDP per capita. Also, the extent to which investment and natural resource exports plays a major role in economic performance was analyzed. Overall, the results provide good empirical claims for the important effect of ease of doing business as a contributing factor for improving economic performance.

# 1 INTRODUCTION

Over the years, a lot of studies have been made on the importance of doing business and its implications for economic performance and growth. However, none has taken a deep dive into analyzing how African countries can improve their economic outlook through the *doing business* lens; as this can form the foundation for an economic transformation of what has become an impoverished continent. In recent times, many African countries have initiated various policies aimed at improving business environment in their economies. Thus, the World Bank's *Doing Business* reports have become a major tool in determining the business-friendly temperature of many economies. It provides indicative insights into how various economies are simplifying the way business activities are carried out. Each year the World Bank tracks various economic reform efforts in over 160 countries. These efforts are tracked using what it called indicators such as "Registering Property", "Starting Business" and eight other indicators. These indicators are ranked from 0 to 100 to indicate the different levels of achievements and growth that each country has made in that period. As stated on its website, the main objective of the *Doing Business* report is to "provide an objective basis for understanding and improving the regulatory environment for business around the world." Thus, it looks into how small and mid-size companies are able to operate efficiently within a specific business environment and investigate regulations that limit it.

In this paper, the World Bank's *Doing Business* indicators are used as the representation of business regulations that can stimulate economic performance of a country. Studying the effect of doing business factors and how it can improve economic

performance of African economies, this study takes a broader and more intense approach to the topic than previous studies such as Ani (2015) and Djankov et al. (2006).

Over the years the *Doing Business* report has recorded various regulatory reforms and growth stimulating efforts that have occurred in various economies especially in Asia and Europe with little progress in Africa. This is important because, for any economy to grow it has to recognise that private sector- led growth initiatives and policies form the engine of economic development. Hence, this study looks at what indicators in the *Doing Business* report are significant for African economies to improve economic performance.

In carrying out this research, a cursory look is taken at the impact of the “resource curse” theory as proposed by Sachs and Warner (1995), in which they analysed the effect of investment and natural resource export on economic growth for resource rich countries in the 70s specifically during the oil boom. In order to observe these effects, we look at more recent data to assess if the theory is relevant in Africa today. The impact of investment and natural resource exports are also analysed.

The relevance of this paper to literature is very important as it differs from other studies in many ways. The paper takes an extensive look, not only at the effect of doing business on economic growth in Africa, but also at how various African economies can focus on relevant indicators as well as harness natural resource exports and investment opportunities to improve economic growth and development.

The rest of the paper will be structured as follows: section 2 takes a look at past relevant empirical literature. Section 3 provides details about the data used and its sources while section 4 provides details about the empirical specification of the statistical model. Section 5 discusses the results of the analysis while section 6 provides the conclusion.

## **2 LITERATURE REVIEW**

This section aims to discuss published papers relevant to the Ease of Business and how it affects an economy's performance. Numerous potential growth determinants have been identified over the years. During the last decade, a body of literature has explored the relationship between business regulations and economic growth extensively using the World Bank's Doing Business Rankings (DBR) and its components in analysis. For instance, in a 2016 Wall Street Journal column, John Cochrane (2016), showed that there is a high correlation between GDP per capita, as measured by its natural logarithm, and the World Bank's "Distance to Frontier" (DTF) index which measures the distance of each economy to the "frontier". The DTF index represents the best performance observed on each of the indicators across all economies in the *Doing Business* sample, across a large set of advanced and emerging economies at a point in time. In particular, he shows that higher GDP per capita correlates well with a higher DTF score, and vice versa.

Djankov et al. (2006) studies the link between regulations governing business activities and the economic growth. The study uses the 2004 *Doing Business* data created by the World Bank to measure the relationship between business regulations and the average annual growth rate of GDP per capita. The study observes 135 countries between 1993 to 2002. They use the indicators as explanatory variable while controlling for trade, initial period investment, ethno-linguistic fractionalization, latitude, and landlocked countries. Using measures of institutional quality from International Country Risk Guide (ICRG) and Transparency International (TI) to verify the robustness of the result, they observe that there is a significant relationship between better regulations and higher growth rates while taking into consideration the fact that results from the effects of

improvements in primary school enrolment, secondary education, government consumption, and inflation showed a significant lower impact on economic growth than business regulations.

Also, Haidar (2012), examines the impact of business regulatory reforms on economic growth. In contrast to Djankov et al. (2006), he investigates the link between business regulatory reforms and economic growth in 172 countries from 2006 to 2010. The analysis used data on microeconomic reforms obtained from various sources such as World Bank's *Doing Business* Reports, Freedom House, World Development Indicators and Polity IV. For the paper, he uses annual percentage growth rate of GDP per capita, as the dependent variable. For the main explanatory variable, he uses the total number of reforms in each country during the period covered in addition to nine control variables (population, financial freedom, political stability, control of corruption, foreign direct investment, fixed capital formation growth, trade, government spending) for his analysis. Running ten separate regressions using the number of reforms in each category of regulatory reforms as the main independent variable, the empirical results suggest a fairly significant and relatively large positive effect of business regulatory reforms on economic growth.

Also, Ani (2015), looks at the effect of Ease of Business and its implications for economic growth in Asian economies in 2014. The study uses the ten *Doing Business* indicators (DBI) of the World Bank as the measure of ease of doing business while Gross Domestic Product (GDP) serves as the measure of economic growth in the 29 economies observed. He applied multiple regressions as well as a backward step-wise regression to show the effect of Ease of Business on economic growth; the result reveals an overall

significant effect of ease of Doing Business on economic growth. However, only construction permits, getting credit, registering property and trading across borders were found to be statistically significant; thus, showing the significant effect that regulatory procedures have on GDP. As Coker (2014) stated in the case of Nigeria, stifling policies and policy witch-hunts have effectively succeeded in restricting and hindering innovation, investment opportunities, growth of economy and most importantly brought about a static economy where bureaucrats dictate the pace of growth of an economy or outright retard the process of easing business.

Furthermore, other papers looked at the effect of investment rates and conducive business environment on economic growth through the prisms of Foreign Direct Investment (FDI), investment rates and barriers to firm entry and exit.

Jayasuriya (2011), examines how improvements in the *Doing Business* ranking influenced FDI inflows into countries of different economic sizes. He observes that when focusing on a single developing country, the relationship is insignificant while an aggregate of economic similar countries saw a significant relationship between economic growth and FDI. Similarly, a study covering a longer period from 2004 to 2010 was conducted by Bayraktar (2013). In contrast to Jayasuriya (2011), Bayraktar finds that countries with better records of Doing Business tend to attract more FDI and as such, an improvement in *Doing Business* indicators in developing countries can be one of the important catalysts in improving the level of FDI flows to the economies of these countries.

Eifert (2009), aims to evaluate the impact of regulatory reform on investment rates and GDP growth conditional on investment rates. He uses an Arellano-Bond dynamic panel estimator to control for unobserved cross-country heterogeneity and the correlation between reform timing and the business cycle from 2003 to 2007. His empirical analysis covers 90 countries over a five-year period. The analysis reveals a positive impact of regulatory reforms in countries which are relatively poor, dependent on good governance.

Manuel's (2015), reviews the evidence with respect to the causal mechanism between investment climate improvements and economic growth and the results contrast with those of other studies. She analyzes 180 countries between 2003 and 2012 that made it easier to do business by improving regulatory frameworks. The results of her examination of the causal link between investment climate reform and growth are observed to be weak, making it difficult to verify patterns in findings across studies.

Klapper, Laeven, and Rajan (2004) conducted a study to determine the impact of the business environment on new firms' entry into an economy. They use cross-country data on firms in Western and Eastern Europe obtained from the Amadeus database for 1998 and 1999 while taking into consideration survivorship bias of companies. Using industry indicators to control for level differences across industries and country indicators to control for level differences across countries and using a Tobit regression with censoring at 0 and 1, the study find that high entry regulations hindered entry, especially in industries that naturally should have a high entry, for example, communications, computer services, and services. However, they rightly note that not all regulations affect firm entry, but excessive bureaucratic regulation leads to undesirable outcomes which can lead to stunted growth and development.

On a different approach, looking at factors that could have an effect on the business environment of countries, Bota-avram (2014), explores the relationship between good governance and the business environment. He uses governance indicators which capture six clusters of governance and quality of business environment which is captured by the 2011 *Doing Business* ranking, both developed by the World Bank. To capture this relationship, she uses a cross-country empirical analysis of 181 countries classified by income groups. Her findings show a significant effect of some governance indicators, such as government effectiveness and regulatory quality, on the ease of *Doing Business*, for all the observed countries. She also observes that the rule of law, government effectiveness, control of corruption and regulatory quality, are the most important governance factors that affect the business environment, particularly for high income economies.

On the issue of corruption which is a major hindrance to ease of business especially in African countries, Mongay and Filipescu (2012) conducted a correlation analysis of 172 countries and examines its effects for international business. Using a bivariate correlation analysis, they analyse 172 countries by comparing their positions in the Corruption Perception Index (CPI) ranking and the *Doing Business* ranking. Their findings show a high degree of interdependency between corruption and ease of business. Therefore, they opine that corrupt nations are more prone to make business processes more difficult and complex for investors. Although it is worth noting that in their analysis, some countries show low correlation between the variables.

In regard to labor regulations, Scarpetta et al. (2002) use firm-level survey data from OECD countries to analyze firm entry and exit, finding that higher product market and labor regulations are negatively correlated with the entry of small and medium sized

firms. In addition, Hasan et al. (2007) finds that labor demand elasticities in Indian manufacturing industries were higher for Indian states with more flexible labor regulations. Consequently, Besley and Burgess (2004) find that Indian states which imposed tighter labor regulations experienced reduced manufacturing output, employment, investment and productivity in the formal manufacturing sector and increased output in informal manufacturing.

In summary, a number of studies have shown that ease of *Doing Business* and a favourable business environment are significant for an economic improvement and growth. Drawing from the above papers, this study aims to approach the topic with the use of a robust panel data from *Doing Business* report covering 2006 to 2016, while employing data variables suggested by the resource curse theory from the World Integrated Trade Solutions (WITS).

### 3 DATA

This study is based on a panel of 47 African countries listed in Table (1) below for which information on each variable is available for the period 2006 to 2016.

**TABLE 1: COUNTRIES CATEGORIZED BY INCOME GROUP**

<b>Low income (22)</b>	<b>Lower middle income (15)</b>	<b>Upper middle income (9)</b>	<b>High income (1)</b>
Benin	Cabo Verde	Algeria	Seychelles
Burkina Faso	Cameroon	Angola	
Burundi	Congo, Rep.	Botswana	
The Central African Republic	Côte d'Ivoire	Equatorial Guinea	
Chad	Egypt, Arab Rep.	Gabon	
Congo, Dem. Rep.	Ghana	Namibia	
Ethiopia	Kenya	Mauritius	
Gambia, The	Lesotho	Namibia	
Guinea	Mauritania	South Africa	
Guinea-Bissau	Morocco		
Madagascar	Nigeria		
Malawi	Sudan		
Mali	Swaziland		
Mozambique	Tunisia		
Niger	Zambia		
Rwanda			
Senegal			
Sierra Leone			
Tanzania			
Togo			
Uganda			
Zimbabwe			

Source: World Development Indicators (WDI).

The data used for all the variables are sourced from the World Bank's World Development Indicators (WDI), *Doing Business* annual reports and World Integrated Trade Solutions reports. The data sources appear in Table A1 in the Appendix.

The World Development Indicators used for this study were obtained from the *Doing Business* annual report introduced by the World Bank in 2003. The framework used by the World Bank to build the indicators can be found in Table A2 in the Appendix. It is a report that discusses important reforms that focus on business regulations and the

implementation of the regulatory processes involved in setting up and operating a business across economies. This study measures the ease of *Doing Business* indicators in terms of the Distance to Frontier (DTF) scores. The DTF annual score is provided by the World Bank and it assesses the level of regulatory performance and improvements in the pattern of growth and economic performance as presented by various indicators across all economies. The DTF score of an economy is measured on a scale from 0 to 100, where 0 represents the lowest performance and 100 represents the frontier.

**TABLE 2: DISTRIBUTION OF DISTANCE TO FRONTIER OF AFRICAN COUNTRIES (2006-2016)**

Indicator	Country with lowest average DTF value	Average DTF	Country with highest average DTF value
Starting a business	Guinea-Bissau (2.21)	73.52	Burundi (94.51)
Dealing with Construction Permits	Guinea-Bissau (0.0)	55.16	Kenya (86.52)
Getting Electricity	Somalia (0)	55.48	Tunisia (85.2)
Registering Property	Libya (0)	59.21	Rwanda (89.2)
Getting Credit	Somalia (0)	35.51	Zambia (97.5)
Protecting Minority Investors	Somalia (0)	41.69	South Africa (80)
Paying taxes	Somalia (0)	55.75	Mauritius (91.92)
Trading Across Borders	Rwanda (1.87)	48.89	Mauritius (87.74)
Enforcing contracts	Angola (25.22)	49.24	Cabo Verde (67.61)
Resolving Insolvency	Chad (0)	23.11	Mauritius (73.02))

Source: World Development Indicators (WDI).

Table (2) above provides a tabular representation of the performance of the ease of *Doing Business* indicators measured by the distance to frontier for all the African countries on average over the period covered. It is worth stating that in comparison to other continents, the African continent has the lowest DTF figures in the major indicators used in this study and that can be reflected in the low average value of the indicators. While Mauritius

dominates in majority of the indicators, Somalia's poor performance can be attributed to the ongoing civil war accompanied with low economic growth and development.

Although ten indicators covering various aspects of the business climate are provided by the World Bank *Doing Business* annual report of 2017, this research will consider only four indicators due to the variation in the data returns over the eleven-year period. Specifically, the indicators are "starting a business", "dealing with construction permits", "registering property", and "trading across borders". For the study, the use of lagged values of the indicators are used in order to cater for out-of-steady-state dynamics and to observe the effect of previous policies as reflected in the level of indicator on current income.

For the dependent variable, the GDP per capita from 2006 to 2016 measured in constant 2010 U.S. dollars, will be used for the study. It is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. According to the World Bank's World Development Indicators (WDI), it is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. For context, 2006 to 2016 was a period of comparatively mixed (strong and weak) economic performances especially in North and Central African countries.

For the other explanatory variables, we include some variables that are introduced in the resource curse model as estimated by Sachs and Warner (1995), in their paper in which they observed the effect of natural resource abundance on economic growth. Thus, we include investment as a percentage of GDP and natural resource export as a percentage of GDP. The level of total investment as a percentage of GDP obtained from the World Bank Development Indicators, measures the value of investment that a country attracts

in terms of gross capital formation (which is the sum of fixed capital formation and changes in inventory) as a percentage of GDP at real market prices. The larger the percentage, the larger the value of investment relative to GDP that a country attracts. Natural resource export as a percentage of GDP obtained from the World Integrated Trade Solutions (WITS) report measures the level of contribution of natural resource which includes minerals and oil but excludes agriculture that a country exports in trade terms as a percentage of GDP at real market prices. The larger the percentage, the larger the contribution of natural resource export to a country's GDP. Sachs and Warner (1995) found that total investment had a positive effect on per capita GDP growth rate while natural resource export had a negative effect which they called the natural resource curse.

## **4 EMPIRICAL SPECIFICATIONS**

This study looks at how ease of regulatory bottlenecks and a conducive business climate affect economic performance of economies in Africa. This study aims to produce a more robust specification than those of preceding papers by looking at the effects of improved regulatory performance vis a vis the resource curse effect on economic development.

As stated previously, this study uses a panel data set of 47 countries over the period of 2006 to 2016. Many types of empirical approach can be used in cross national comparative study. For this study, a panel data with fixed effects model will be used. A

fixed effects model assumes that the country and time specific effects are correlated with the explanatory variables.

The estimated basic model specification is the following:

$$y_{it} = \alpha_0 + \alpha_i + \beta_t + \lambda X_{it-1} + \varepsilon_{it} \quad (1)$$

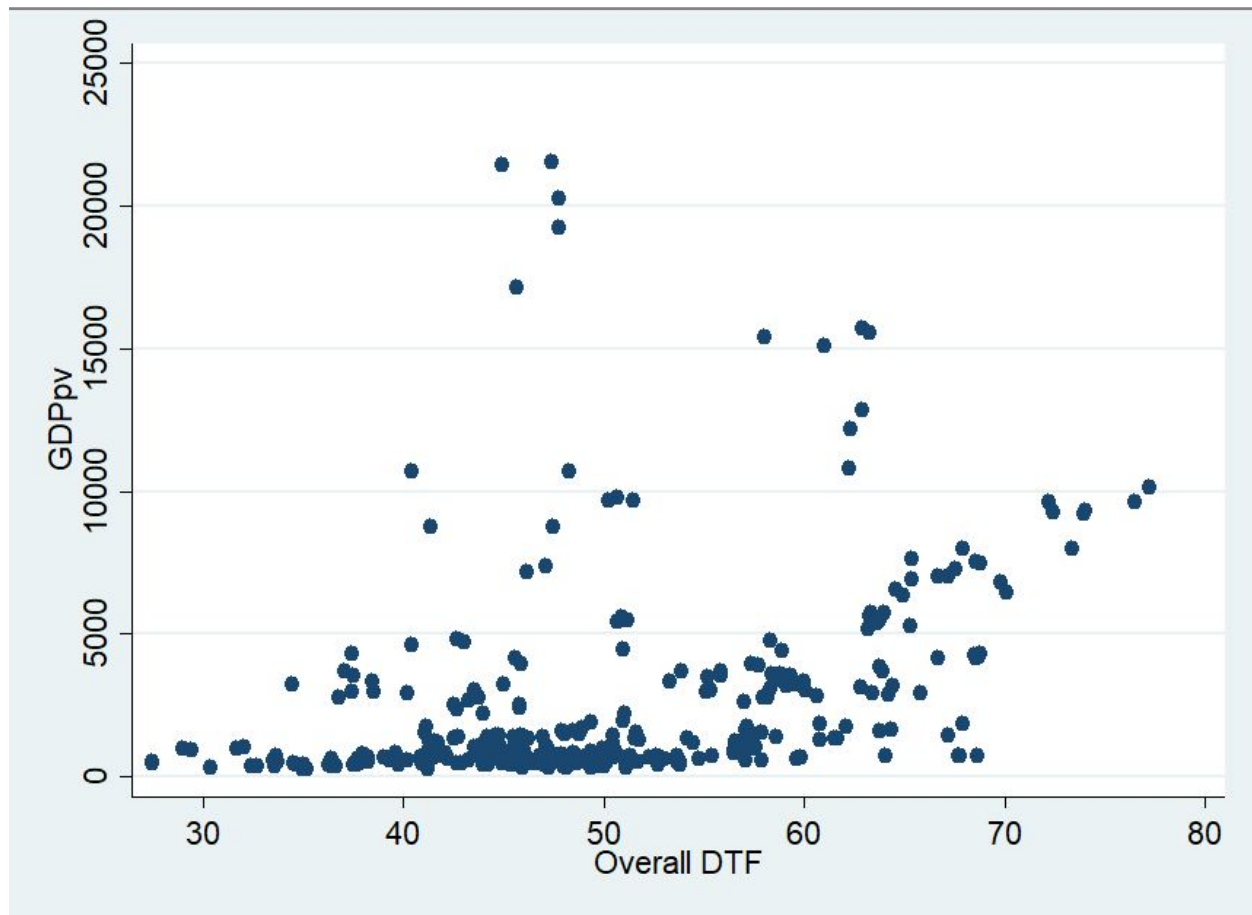
$$y_{it} = \alpha_0 + \alpha_i + \beta_t + \lambda X_{it-1} + \gamma VI_{it} + \theta NRE_{it} + \varepsilon_{it} \quad (2)$$

In these equations,  $\alpha_i$  represents the individual country specific effect while  $\beta_t$  represents the unobserved time-variant individual effect and  $\varepsilon_{it}$  represents the error term. The index  $i$  is used for countries, while  $t$  represents the time period from 2006 to 2016. The variable  $y_{it}$  represents the GDP per capita for each country at a particular period. The variable  $VI_{it}$  represents the investment in a country as a percentage of GDP at a particular time period. Also,  $NRE_{it}$  represents the natural resource export of the countries as a percentage of GDP at a particular period while  $X_{it-1}$  represents the lagged vector of four Doing Business indicators used for this study.

Detailed diagnostic tests will be conducted to ensure the validity of the models, while Driscoll and Kraay standard errors will be used to account for possible instances of cross-sectional dependence, heteroscedasticity, and autocorrelation. This approach will ensure the validity of the model as it corrects for issues of non-spherical disturbances. Finally, a test will be carried to measure the possibility of multi collinearity among the explanatory variables.

## 5 RESULTS

**Figure 1:** RELATIONSHIP BETWEEN GDP PER CAPITA AND THE EASE OF DOING BUSINESS OVERALL DISTANCE TO FRONTIER



Since we will be using a panel data with fixed effects, Figure (1) above provides a graphical representation of the relationship between annual GDP per capita (\$ 2010) and the World Bank's ease of Doing Business Overall Distance to Frontier (DTF) measure for 47 countries between 2010 and 2016. The overall distance to frontier is the aggregate DTF averaged across all indicators for an economy. It should be noted that this illustration only covers the period 2010 to 2016, due to the unavailability of the (DTF) measure for earlier years. The y-axis is the annual GDP per capita (GDPpv), while the x-axis represents

the overall DTF. This graph does not indicate a clear-cut correlation between GDP per capita and the DTF, with an estimated pairwise correlation coefficient of 0.37. However, countries with higher DTF seem to be less prone to having lower GDP per capita.

## 5.1 ESTIMATION RESULTS

**TABLE 3: DESCRIPTIVE STATISTICS**

Variable	N	Mean	Std. Dev.	Min	Max
GDP Per Capita (2010 US\$)	47	2501.16	3484.72	165.87	22742.38
Starting a business	47	59.36	20.34	2.21	94.25
Dealing with construction permits	47	59.56	14.54	13.28	86.52
Registering property	47	52.07	15.05	14.11	89.15
Trading across borders	47	48.22	20.94	1.26	92.68
Investment per GDP	47	23.60	8.12	1.80	57.17
Natural Resource Export per GDP	47	4.73	4.08	.02	27.30

Table (3) above represents descriptive statistics for the full sample. The mean value of the GDP per capita is approximately 2501.16, and its standard deviation is 3484.72. Looking at the *Doing Business* indicators, “Dealing with construction permit” has the highest mean value of 59.56, while “Trading across borders” has the lowest mean value of 48.22. “Trading across borders” also has the highest standard deviation of 20.94 while natural resource export per GDP has the lowest standard deviation of 4.08.

A number of diagnostic tests were conducted to check for the presence of multicollinearity, heteroskedasticity, autocorrelation and cross-sectional dependency.

**TABLE 4: CORRELATION MATRIX OF THE VARIABLES**

	lgSB	lgDCP	lgRP	lgTAB	AVI	ANRE
lgSB	1.0000					
lgDCP	0.2029	1.0000				
lgRP	0.4048	0.2945	1.0000			
lgTAB	0.4161	0.2667	0.1239	1.0000		
AVI	0.2153	-0.0060	0.1590	0.1554	1.0000	
ANRE	0.2015	-0.0754	-0.0272	-0.0882	-0.0916	1.0000

**TABLE 5: COLLINEARITY DIAGNOSTICS**

Variable	VIF	SQRT		R-Squared
		VIF	Tolerance	
lgSB	1.60	1.27	0.6247	0.3753
lgDCP	1.18	1.09	0.8483	0.1517
lgRP	1.31	1.14	0.7628	0.2372
lgTAB	1.33	1.15	0.7520	0.2480
AVI	1.09	1.04	0.9187	0.0813
ANRE	1.12	1.06	0.8901	0.1099
Mean VIF	1.27			

	Eigenval	Cond Index
1	6.2593	1.0000
2	0.4096	3.9091
3	0.1219	7.1669
4	0.0873	8.4664
5	0.0634	9.9370
6	0.0367	13.0547
7	0.0218	16.9516

Condition Number 16.9515

Eigenvalues & Cond Index computed from scaled raw sscp (w/ intercept)

Det (correlation matrix) 0.4922

Tables (4) represents the correlation among the explanatory variables while table (5) represent collinearity results of the explanatory variables. From the results above, we observe that correlation among the variables is relatively low, as the highest correlation coefficient is less than 0.5. Likewise, we also observed that no excessive presence of multicollinearity was found in the explanatory variables dataset. The Auxiliary R-squares are less than 0.4, while the Variance Inflation Factors (VIF) are lower than 2.0 with a condition index of 16.95 indicating that there is little or no correlation among the explanatory variables.

**TABLE 6: DETAILS OF DIAGNOSTICS TESTS**

	<b>Test for Heteroskedasticity</b>	<b>Test for Autocorrelation</b>	<b>Test for Cross-sectional Dependence</b>
Full Sample			
Equation: (1)	820000***	150.41***	14.21***
Equation: (2)	500000***	186.37***	11.70***

\*  $p < 0.1$  \*\*  $p < 0.05$  \*\*\*  $p < 0.01$

Next, we use a Wald test to test for the presence of a group wise heteroskedasticity, while the Wooldridge serial correlation test is used to test for the presence of AR (1) autocorrelation. Lastly, the Pesaran test is used to check for the presence of cross sectional dependence among the variables.

As presented in Table (6) above, we observe that the p-values are less than the level of significance at the 1 percent levels of significance for the estimated model, signifying the presence of group wise heteroskedasticity, autocorrelation, and cross-sectional dependence respectively in the model. As earlier stated, Driscoll and Kraay (1998)

standard errors are used to correct the estimated standard errors for non-spherical disturbances.

**TABLE 7: RELATIONSHIP BETWEEN GDP PER CAPITA AND EXPLANATORY VARIABLES.**

Independent Variable	Dependent Variable: GDP per capita (\$ 2010)	
	(1)	(2)
Lagged Starting a business	-0.85 (3.62)	-1.06 (4.06)
Lagged Dealing with construction permits	3.42 (4.60)	1.91 (4.82)
Lagged Registering property	18.31*** (3.93)	18.26*** (3.47)
Lagged Trading across borders	7.86*** (1.47)	8.15*** (1.34)
Investment		-3.28 (8.23)
Natural Resource Export		29.24* (16.12)
Constant	1062.10*** (220.45)	1092.97** (350.85)
Number of observations	470	470
Number of countries	47	47
F-Statistic	17.19	30.73

\*  $p < 0.1$  \*\*  $p < 0.05$  \*\*\*  $p < 0.01$

*Driscoll-Kraay robust standard errors in parentheses. Based on appropriate test fixed effects model is used for estimation.*

Table (7) above presents the result for the estimated relationship between GDP per capita and the explanatory variables of our equation. It examines the effects of investment per GDP, natural resource export and the ease of business indicators on per capita GDP in the full sample. In column (1) only two variables have statistically significant coefficients. “Registering Property” and “Trading across borders”, both increase GDP per capita. The result in column (1) explains further that doing business improves the performance of the economy. However, it is important to note that from our results starting business and dealing with construction permits had an insignificant effect on

GDP, which could be an indicator that recent regulatory efforts aimed at improving starting businesses and increasing the number of construction permits may in fact not have the desired effect of improving economic growth in the long run. The information in column (2) suggests that adding the resource curse variables to the initial equation does not change the results for the *Doing Business* variables. Finally, as shown in the table, the p-values of the F-statistics of both models are all less than the 0.05 level of significance indicating that the models are overall significant.

A fascinating result emerges in table (7) when we consider the positive effect of natural resource on GDP per capita. This finding disagrees with Sachs and Warner (1995), resource curse theory which highlighted the negative effect of natural resource export as a stimulant for the economic growth of resource rich but underdeveloped nations. The unexpected result could be the result of more recent data that has shown that in fact, the contribution of natural resource export to a large extent, has a positive effect on the economic growth of a developing country which can be attributed to a change in economic policies of these countries in recent years.

## **6 CONCLUSION**

A significant number of policymakers are taking up the challenge of expanding business regulatory reforms by putting some level of priority on reforming business regulations when designing growth policies. This has led to a renewed interest in the link between the ease of *Doing Business* and income level.

This paper examines the importance, significance and effect of adequate business policies on economic performance using panel data of 47 African countries from 2006 to 2016. The study examines the effect of *Doing Business* indicators on annual GDP per

capita. The study uses a lagged ease of *Doing Business* indicators to cater for issues of convergence of the indicators from previous years. Furthermore, to examine the resource curse effect as it relates to the business climate and economic growth, the “Contribution of Investment to GDP and “Natural Resource Export as a percentage of GDP” were included in the study. It is worth noting, unlike other studies, this study covers a longer period of eleven years.

The key empirical findings derived from this study suggests that not all ease of business coefficients appear to be statistically and economically significant and also natural resource export when merged with the ease of business indicators has a positive and statistically significant effect on GDP per capita. However, the study shows that investment share of GDP per Capita has no significant effect; perhaps more studies may need to be done to further observe other factors that can influence how investment impacts positively on *Doing Business* to stimulate growth in an economy.

In conclusion, caution should be taken when implementing reforms to better improve some *Doing Business* indicators in developing countries. Further improvements in some *Doing Business* indicators seem to be counter-productive, since they appear to have no effects in the economies of those income groups. That is, allowing some business procedures to become too easy to achieve may result in limited resources being taken away from more productive businesses. This therefore, leads to decreasing returns of reforms in those economies. Hence, these results raise important concerns to be considered in the design and implementation of business regulatory reforms. Indeed, this study suggests that a country’s regulation of business is a relative determinant of economic performance and not all reforms are worth implementing. Therefore, policymakers should put more priority on properly identifying and implementing needed

reforms when designing growth policies in order to ensure an increase in economic performance of their economies.

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## APPENDIX

**TABLE A1: DATA SOURCE**

Variable	Data Source
Starting a business ( <b>SB</b> )	World Bank's Doing Business Annual Report. Available at: <a href="http://www.doingbusiness.org/data/~media/WBG/DoingBusiness/Documents/Miscellaneous/DB17-Distance-to-Frontier-historical-dataset.xlsx">http://www.doingbusiness.org/data/~media/WBG/DoingBusiness/Documents/Miscellaneous/DB17-Distance-to-Frontier-historical-dataset.xlsx</a> <a href="http://www.doingbusiness.org/Custom-Query">http://www.doingbusiness.org/Custom-Query</a> , Viewed 8 January 2018.
Dealing with construction permits ( <b>DCP</b> )	
Registering property ( <b>RP</b> )	
Getting credit ( <b>GC</b> )	
Protecting minority investors ( <b>PMI</b> )	
Paying taxes ( <b>PT</b> )	
Trading across borders ( <b>TAB</b> )	
Enforcing contracts ( <b>EC</b> )	
GDP per capita (\$2010)	World Bank's World Development Indicators (WDI). Available at: <a href="https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG">https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG</a> , Viewed 22 February 2018.
Natural resource export per GDP	<a href="https://wits.worldbank.org/CountryProfile/en/Country/SSF/StartYear/2006/EndYear/2016/TradeFlow/Export/Indicator/XPRT-TRD-VL/Partner/BY-COUNTRY/Product/Fuels#">https://wits.worldbank.org/CountryProfile/en/Country/SSF/StartYear/2006/EndYear/2016/TradeFlow/Export/Indicator/XPRT-TRD-VL/Partner/BY-COUNTRY/Product/Fuels#</a>
Investment per GDP	World Bank's World Development Indicators (WDI). Available at: <a href="https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG">https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG</a> , Viewed 13 January 2018.

**Table A2: Doing Business Methodology Definitions**

Doing Business (DB) Years	Doing Business Indicators									
	Starting a Business	Dealing with Construction Permits	Getting Electricity	Registering Property	Getting Credit	Protecting Minority Investors	Paying Taxes	Trading across Borders	Enforcing Contracts	Resolving Insolvency
DB05-14	<ul style="list-style-type: none"> <li>· Procedures</li> <li>· Time</li> <li>· Cost</li> <li>· Paid-in minimum capital</li> </ul>	<ul style="list-style-type: none"> <li>· Procedures</li> <li>· Time</li> <li>· Cost</li> </ul>	<ul style="list-style-type: none"> <li>· Procedures</li> <li>· Time</li> <li>· Cost</li> </ul>	<ul style="list-style-type: none"> <li>· Procedures</li> <li>· Time</li> <li>· Cost</li> </ul>	<ul style="list-style-type: none"> <li>· Strength of legal rights index</li> <li>· Depth of credit information index</li> </ul>	<ul style="list-style-type: none"> <li>· Extent of conflict of interest regulation index</li> </ul>	<ul style="list-style-type: none"> <li>· Payments</li> <li>· Time</li> <li>· Total tax rate</li> </ul>	<ul style="list-style-type: none"> <li>· Documents to export</li> <li>· Time to export</li> <li>· Cost to export</li> <li>· Documents to import</li> <li>· Time to import</li> <li>· Cost to import</li> </ul>	<ul style="list-style-type: none"> <li>· Procedures</li> <li>· Time</li> <li>· Cost</li> </ul>	<ul style="list-style-type: none"> <li>· Recovery rate</li> </ul>
DB14-15										
DB15-17		<ul style="list-style-type: none"> <li>· Quality of the land administration index expanded to cover equal access to property rights</li> </ul>	<ul style="list-style-type: none"> <li>· Added:</li> <li>· Post filling index</li> </ul>	<ul style="list-style-type: none"> <li>· Expansion:</li> <li>· Quality of judicial processes index expanded to cover weight of women's testimony in court</li> </ul>						
DB16-17										

Source: World Bank's Doing Business report 2017

