

Article

Impact of Tax Incentives on Foreign Direct Investment: Evidence from Africa

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Abstract: African countries have faced competition and several challenges to attract foreign direct investment given the role that FDIs play in the development process. Several efforts made have been futile because of numerous factors that play against the business environment for foreign investments. Our paper analyses the influence of tax incentives on foreign direct investment in African economies based on data from 2000–2018. We utilized panel data on forty (40) African countries and an econometric model of four proxies of tax incentives, after controlling other variables, with robust Random Effect as our discussion estimator. Our results revealed that FDI responds to lower corporate income tax (CTR). Furthermore, foreign direct investment predominates in African economies with longer tax holidays and withholding tax. However, tax concession is insignificant to the inflows of FDIs in Africa. Summarizing, our results recommend that without proper restructuring of the tax incentives to deal with policy lapses by the governments of Africa, achieving the four main goals, i.e., poverty eradication, sustainable growth and development, African integration in the competitive global economy, and women empowerment, will be hindered.

Keywords: foreign direct investment; tax incentives; tax holiday; tax concession; corporate tax rate; panel data



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1. Introduction

What are the motivational factors that influence foreign direct investments in a nation? For several developing countries within Africa, which are not an exception, there are significant economic benefits. Such nations have managed to utilize the global investment pool and drastically improved their standard of living. As several countries implement plenty of extended venture systems, competitiveness for foreign investors will continue to increase. Considering this, the foreign direct investment decision is a progressively mainstream research interest.

Several reasons have been established as to why foreign firms prefer certain countries. Most researchers have stressed that factors such as corruption, internal security, rule of law, quality of regulations, the effectiveness of government, voice and accountability, market size and infrastructure, among many others are the economic essentials for investment environment [1–10]. According to Appiah-Kubi et al. [10], there have been several recommendations for Africa countries to lure remarkable inflows of foreign direct investment to enhance infrastructural development by the United Nations Sustainable Development Goals (UNSDG).

This competitiveness for foreign direct investment is because foreign investors generate job creation and economic growth, improve the productive resources of the nation,

advance information and technology that lead to alleviation of poverty, and benefit the economy in other ways [11–15]. Over the years, several developing countries, especially in Africa, have been embarking on ways toward enhancing the inflows of FDI [9,16,17].

African countries have been characterized by macroeconomic factors such as poor infrastructure, unemployment, low level of savings, and many others. Foreign direct investments can be an immense substitute to boost the economic productivity of such economies thereby improving economic growth and its sustainability [7,18,19]. These positive advantages that the inflows of foreign direct investment generate have caused competition among several developing countries. Overall, this competitiveness leads to a difficult task for African economies because of the common adage that Africa can be an area of volatile risk investment [20,21].

Because of this, the significant question that may arise is whether tax incentive is an important driver of foreign direct investments. Thus, it is necessary to tackle the usefulness of tax incentives generally to influence the inflow of foreign direct investment. According to Peters and Kibel [22], investors' scale of preference when it comes to factors that influence their investment decision-making factors, such as sound security, exchange rate, political stability, inflation, etc., instead of fiscal incentives.

To eradicate this canker, African countries initiate and implement various measures of improving a friendly business environment to entice the inflows of foreign investors. According to Krista [23], such measures adopted by African countries include liberalization of the economy, tax incentives, and provision of infrastructure, which are notable measures adopted by African countries in attracting foreign direct investment. Tax incentives such as low corporate tax rates, tax holidays, tax credits, investment allowance, tax deductions, and many others have been the major tool used by several developing economies in attracting foreign investors [22,24,25].

The utilization of tax incentives in developing countries has become disputed, as they come with notable costs such as administrative fees, expenses, inefficient allocation of capital, foregone revenue, and many more. Several kinds of literature discuss the likely effects, including their benefits and risks of tax incentives [22,25]. Notwithstanding the issues previously noted, effective tax incentives have been cited as a major factor in enhancing investment in developing countries [22,23].

Considering the significant role of foreign direct investment in the economic progress of developing economies such as Africa, the government in Africa must focus on the formulation and execution of schemes and strategies that would serve as incentives for foreign businesses to channel FDIs into their economies. To provide a guide to the African governments in their policy formulation and implementation in this regard, an empirical study that examines the impact of tax incentives on foreign direct investment inflows is very critical and our study seeks to achieve this.

Thus, the objective of our paper is to investigate how effective tax incentives influence the inflows of foreign direct investments in Africa within the period 2000–2018. Our results will add to existing knowledge on the effectiveness of tax incentives for attracting inflow of FDIs in Africa, which remain scant.

The remainder of our study proceeds as follows: Section 2 describes theoretical background and research questions related to tax incentives and FDIs. Section 3 focuses on the research objective, data, and methodology. Section 4 concentrates on the results and discussion. The final part of our research presents conclusions, recommendations, and limitations.

2. Literature Review and Research Questions

The empirical literature assessment on the subject relating to the role tax incentives play in attracting foreign direct investment is very significant for our study. Considering that FDI has an immense role in economic development, empirical literature reveals the knowledge gap to be addressed and thereby providing an impetus for our study. Developing countries with poor technological development and a shortage of capital

have adopted tax incentives as effective strategies and schemes. The following therefore constitutes some of the empirical literature that exists on this subject matter.

Abille et al. [26] attempt to explore the function of fiscal incentives in attracting foreign direct investment inflows into Ghana by using data from 1975 to 2017. This was done by applying the distributed lag (ARDL) bounds test technique, which showed that corporate tax rates have a significant negative impact on FDI inflows into the Ghanaian economy in the long run. They recommended that the Ghana Revenue Service redesign the corporate tax administration in the country to control policy lapses.

Fawowe [25] in his study examined whether fiscal incentives promote investment in Nigeria via constructed indexes from 1970. The empirical results of his study revealed a noteworthy negative relationship between fiscal incentives and FDI in Nigeria. The results recommend that Nigeria effectively concentrate on the removing factors such as insufficient infrastructure, low-quality institutions, and poor regulations that could discourage foreign investors.

Krista [23] additionally examined the function of investment climate and tax incentives within the foreign businesses' investment choices in South Africa. The study uncovered those monetary incentives assuming a negligible position within the choice for the majority of foreign firms.

Through spatial econometrics strategies, Klemm and Van Parys [27] researched the results of tax incentives in over 40 Latin American and Caribbean countries during 1985–2004. They found out that there is proof for vital communication in tax holidays, notwithstanding notable rivalry over the corporate income tax (CIT) rate. Additionally, there was proof that lower CIT rates and longer tax holidays are viable for attracting FDI in Latin America and the Caribbean.

By using static error correction modeling (ECM), Peters and Kiabel [22] inspected the impact of tax incentives in the choice of foreign investors to locate in Nigeria, utilizing information from the yearly measurable bulletin of the Central Bank of Nigeria and the World Bank World Development Indicators Database. Their outcomes uncovered that FDI reaction to tax incentives is adversely critical. They further suggested that reliance on tax ought to be decreased and more consideration be focused on different incentive techniques, such as stabilizing financial changes and the political environment.

Lodhi [28], utilizing the ARDL, dissected the effect of tax incentives on investment in Pakistan from 1990 to 2014. FDI and domestic investment were the reliable factors while corporate tax rates and levy costs were the unbiased variables. The discoveries uncovered that the corporate tax rate is altogether adversely connected with domestic investment and FDI inflows in Pakistan in both the short and long term. It was therefore suggested the public authority of Pakistan reduce the corporate tax rates and duties to drive investment to Pakistan.

Majavu and Kapingura [29], in their examination to distinguish the determinants of FDI inflows into the South African economy, applied the VEC model to many factors such as exchange rate, inflation, market openness, and corporate tax, in addition to using foreign direct investment as the dependent variable. The experimental outcomes showed that these factors are significant drivers of FDI inflows into the South African financial system with corporate tax applying measurably critical negative impact both in the short and long term.

Walid [30] analyzed the monetary factors and risks on FDI on a full-scale level from 1997 to 2007 by utilizing a multiple linear regression model, which uncovered that there exists a critical and positive connection between FDI, and monetary factors used for the examination. Taking all the variables into account, the examination suggested the advancement of FDI through tax incentives to draw in new investments.

Obeng [31] contemplated the impact of corporate tax on regional explicit investment in Ghana, to be specific, mining, assembling, and administration areas, utilizing the Johansen cointegration strategy and quarterly information from 1986 to 2012. Factors utilized in the examination were genuine corporate tax rate, exchange rate, net exports, inflation, and investments in different areas. The paper tracked down that corporate tax affects FDI

inflows into those areas. The paper therefore suggested that government authorities should maintain a low tax rate to drive more FDI into the country.

Etim et al. [32], in their investigation over 19 years, determined the result of cost-focused and benefit-fixed tax technique incentives on FDI in Nigeria. This was accomplished by using secondary data sourced from the CBN and World Bank data sets via multiple regression strategies. The discoveries uncovered that the expense-focused tax strategy incentives had a powerful impact on FDI when compared with benefit-focused tax strategy incentives; however, there was no critical connection between cost-focused versus benefit-based tax strategy incentives and FDI in Nigeria. It was consequently recommended that nontax incentive mediations should be sought after by the government as a fundamental enhancement to the tax strategy incentives to drive FDI inflows into Nigeria.

According to Rendez and Jose [33], tax competition should be taken into consideration as the government's planned reduction inside the domestic tax costs for economic activities by way of foreigners with the sole motive of attracting foreign mobile capital and enhancing economic functions. The authors of [34], in partnership with Price Waterhouse Coopers surveyed 85 countries. It emerged that corporate tax quotes harm gross investment, FDI, and entrepreneurship. The conclusions show divergent views on the effectiveness of tax incentives on FDI attraction. With this motivation, our paper seeks to answer the question:

'Does the rate of corporate tax of African countries influence foreign investors' investment decision?'

Wilson and Wildasin [35] define withholding tax as an income tax that is paid to the government through the corporation, as opposed to the employee wherein countries implement tax rate strategies in a bid to steer the investment of internationally mobile capital. The current proof on the relationship between tax and investment in business international locations cannot simply be extrapolated to growing countries. In addition, Asiedu [36] finds that even inside growing nations, tax results on FDI might be exceptional in Africa. Owing to this, our study sought to answer the question:

'Do foreign investors prevail in Africa economies characterized with tax withholding rate?'

Different tax incentives have additionally different effects on the user cost of capital. Kransdoff [24] in their observation of the usefulness of tax incentives on foreign direct investment attraction in South Africa presumes that taxation is crucial in attracting performance-searching for FDI. For instance, Djankov et al. [34] points to the ambiguous impact of tax holidays on the value of capital, relying on the span of the investment, the evolution of the sales, and the quantity to which the invested capital is deductible. This results in our third research query:

'Do tax holidays affect the inflows of foreign investors into Africa?'

Beyer and Schwefel [37] reveal no courting among tax concessions and FDI appeal in transitional economies. While other studies that include [27] discover tax incentives to be crucial to luring foreign direct investment in low-income countries, Van Parys and James [38] additionally find tax concessions to have a very positive impact inside the Caribbean Island countries. Owing to this, our study sought to reply to the research question:

'Do tax concessions of African economies influence the inflows of foreign direct investment?'

The evidence of several studies recommends that by and large, investment incentives are not a large reason for internal FDI. Furthermore, in any event, when incentives prevail concerning drawing in foreign direct investment, their expenses can surpass the resultant advantages. Regardless of these discoveries, motivation plans keep on extending. This proposes that either the macroanalyses are missing some aspect or that the lack of microeconomic exploration is permitting governments to limit the worth of scholarly examinations. In that capacity, this paper centers on the role of tax incentives influencing the inflows of foreign direct investment in Africa.

3. Material and Methods

We used panel data from forty (40) countries in Africa for the period 2000–2018 to achieve our research goal and answer our research inquiries. The sampled African countries for our study included Angola, Algeria, Benin, Burkina Faso, Botswana, Cape Verde, Cameroon, Chad, Cote D'Ivoire, Democratic Republic of Congo, Egypt, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Morocco, Mozambique, Namibia, Nigeria, Niger, Republic of Congo, Senegal, Rwanda, Seychelles, Sierra Leone, South Africa, Sudan, Tanzania, Tunisia, Togo, Uganda, Zambia, and Zimbabwe. The nations and the period used in our examination were selected largely due to information availability.

Based on Table 1, the data were sourced from a vast set of national ratings recorded by United Nations Conference on Trade and Development (UNCTAD), World Bank World Development Indicators (WDI), World Competitiveness Index Report, World Resources Institute, and Price Waterhouse worldwide synopses of corporate taxes, published between 2000 and 2018. The data for foreign direct investment (FDI) as the dependent variable were sourced from the World Development Indicators (WDI), a data set from the World Bank. The independent variables selected for tax incentives in our study include corporate tax rate (CTR), tax withholding (TaxW), tax holiday (TaxH), and tax concession (TaxC). The study controlled for seven economic factors in the regression for country-level economic traits, which include gross domestic product (GDP), corruption, political stability and absence of violence, exchange rate, trade openness, adult illiteracy rate, and infrastructure.

Table 1. Variable description and data sources.

Variables	Definition	Data Sources
Foreign Direct Investment	This is a measure of FDI as a share of GDP. Since the study seeks to establish factors that influence foreign investment, net inflows of FDI as a % of GDP are the most appropriate.	World Competitiveness Index Report (2000–2018)
Corporate Tax Rate (CTR)	The corporate tax rate measures the extent to which corporations are taxed on their income, profits, and capital gains. A low corporate tax rate is expected to attract and retain foreign investment.	Price Waterhouse worldwide database (2000–2018)
Tax Holiday (TaxH)	This measures the most tax holiday given to investors within the economy in a given year. We will expect a score of zero if no tax holiday is given by the respective government. For a tax holiday of five years or much less, a score of one is allotted and for a tax holiday of greater than five years, a score of two is allotted.	Price Waterhouse worldwide database (2000–2018)
Tax Withholding	Withholding tax is an income tax that is paid to the government by the corporation or employer rather than the employee. This shows how an economy treats strategic sectors which it wants to grow for the benefit of the whole economy.	Price Waterhouse worldwide database (2000–2018)
Tax Concession	This measures whether governments are selective in their provision of tax concession or whether these are given in all cases. Subsequently, if a nation offers no tax concession, the variable takes a score of zero. If tax concessions are declared for a limited number of industries, the variable takes a score of one, and assuming all businesses are offered tax concession, then the variable takes a score of two.	Price Waterhouse worldwide database (2000–2018)
Gross Domestic Product (GDP)	GDP per capita measured as a constant 2010 USD.	World Competitiveness Index Report (2000–2018)

Table 1. Cont.

Variables	Definition	Data Sources
Corruption	The extent to which public power and office are exercised for private gain or not, and the way the political system is absent.	The World Bank Governance Indicators (2000–2018)
Political Stability and Absence of Violence	This reflects the chance of transparent, clear, and steady utility of social policies and political ideals. The existence of political violence, terrorism, and unconstitutional overthrow of governments.	The World Bank Governance Indicators (2000–2018)
Exchange Rate	The real exchange rate of the host country as the nominal rate adjusted by the host and source nations' gross domestic product deflator	World Competitiveness Index Report (2000–2018)
Trade Openness	This measures the combination of trade intensity and the relative importance of a country's trade level to total global trade.	World Competitiveness Index Report (2000–2018)
Adult Illiteracy Rate	This measure of labor quality is indicative of the level of education and skills of workers within a country.	World Competitiveness Index Report (2000–2018)
Infrastructure	The measure of the quality of infrastructure within the individual country is represented by the number of telephone mainlines per population of 1000.	World Competitiveness Index Report (2000–2018)

Source: authors' own computations from the World Bank World Development Indicators (WDI), World Competitiveness Index Report, World Resources Institute, and Price Waterhouse worldwide database (2000–2018).

Panel data defined by Arellano and Bond [39] is the pooling of observations on a cross-section of units of observation over a period. This overcomes some limitations of using strictly cross-sectional or time series data [39–41]. The panel regressions usually take the form of the following relationship:

$$Y_{it} = \beta_0 + \beta_1 X_{i,t} + v_{it} \quad (1)$$

Because of our formulated inquiries and the construction of African nations, a functional model was specified with foreign direct investment (FDI) as a function of tax incentive for us to find out the influence of tax incentives on foreign direct investment in Africa. In addition, to avoid the problem of misspecification of the model, several variables that were deemed fit to affect FDI were included in the model. Thus, our model follows:

$$FDI_{it} = \beta_0 + \beta_1(CTR)_{it} + \beta_2(TAXW)_{it} + \beta_3(TAXH)_{it} + \beta_4(TAXC)_{it} + \beta_5(Control\ Var)_{it} + \varepsilon_{it} \quad (2)$$

The variables are defined below:

i —selected countries of observation; Angola, Benin, Ghana, etc.

t —period of observation: 2000, 2011, ... 2018.

β_0 —intercept

FDI_{it} —foreign direct investment

CTR_{it} —corporate tax rate

$TAXW_{it}$ —withholding tax

$TAXH_{it}$ —tax holidays

$TAXC_{it}$ —tax concession

$Control\ Var_{it}$ —a vector of control variable

ε_{it} —error/disturbance term.

Our study adopted panel data since it sought to study different nations in Africa. According to Arellano and Bover [42], panel data are multidimensional data frequently involving measurements over time. It contains observations of multiple phenomena obtained over multiple periods for similar firms or individuals [41]. Panel data give more precise inferences of model boundaries. This is because panel data consider more levels of opportunity and decreased factors multicollinearity [43].

The two techniques that were considered to analyze panel data were fixed and random effects. Fixed effect assumes the relationship between dependent and independent variables

within an entity [44]. It also estimates that those time-variant characteristics are unique to the individual and should not be correlated with another individual characteristic [45]. Thus, if the error terms are correlated, the fixed effect is not suitable as inferences may not be true [45].

Unlike the fixed effect model, the random effect model explains the variation across entities is assumed to be random and uncorrelated with the independent variables included in the model [44–46]. Due to unobserved heterogeneity and country tax incentive laws, an efficient estimator such as random effect, which caters for endogeneity, already accounted for heteroskedasticity/autocorrelation via clustered standard errors [44,46]. The robust random effect model was established as the suitable model using the [47] specification test. To check the robustness of our results and overcome any possible endogeneity of our sampled data, we adopted dynamic panel generalized method of moments (GMM) estimators developed by [39]. With GMM estimation, the two-stage estimation with corrected standard errors was used because it controls for endogeneity. [39,40]. Additional control variables such as natural resource rent would be added to the baseline specification and checked if our results would remain unchanged. The natural resource rents are calculated as the sum of oil rents as a percentage of GDP and mineral rents as a percentage of GDP from a dataset of World Bank World Development Indicators (WDI).

4. Results and Discussion

Table 2 shows the descriptive analysis of the study. The table indicates the number of observations, the mean, the minimum and maximum observations, and the standard for each variable. Each variable has 893 observations, indicating an unbalanced panel of the forty African countries from 2000–2018. The mean recorded for foreign direct investment in the sample during the period under review was 4.3. On average, the sampled countries recorded 3.5 for company tax rate. Tax withholding has a mean of 3.7, with minimum and maximum values of 15 and 35, respectively. The tax holiday for an average country within the sample was 3.4, with a maximum observation of 0 and a minimum of 25. Tax concession, on average, was 3.6, with minimum and maximum values of 0 and 2, respectively.

Table 2. Descriptive statistics of the variables (2000–2018).

Variable	Obs	Mean	Std. Dev.	Min	Max
fdi	893	4.3	7.8	−6.3	103.3
ctr	893	3.5	6.0	0	34.2
taxw	893	3.7	5.0	15	35
taxh	893	3.4	4.6	0	25
taxc	893	3.6	0.6	0	2

Source: authors' own calculation, 2021.

Our results presentation relating to our formulated research inquiries is shown in Table 3, using robust random effect that was identified by the Hausman specification test as the appropriate model for our study. The coefficient of the company tax rate variable recorded a negative and statistically significant relationship with the inflows of foreign direct investment in the African countries. Thus, an increase in corporate tax rate leads to a decrease in the inflows of foreign direct investment into African countries. Our result was consistent with earlier findings of [26,28,29,31], and therefore support the answer to our first research inquiry: the corporate tax rate in African countries influences the inflows of foreign direct investment.

The positive noteworthy relationship between tax withholding and the inflow of foreign direct investment shows that the higher African economies treat strategic sectors that they want to improve for the benefit of their whole individual economies impact foreign investors' decision-making. Thus, our outcome affirms our subsequent research question on whether the inflows of foreign investors are influenced by substantial tax withholding in African countries. Our results are consistent with earlier studies of [22,24,31,38].

Table 3. Robust random effect regression results.

FDI	Coef.	St. Err.	t-Value	p-Value	[95% Conf]	[Interval]	Sig.
ctr	−0.213	0.181	−1.18	0.016	−0.572	0.145	**
taxw	0.116	0.104	1.11	0.012	−0.091	0.322	**
taxh	0.254	0.105	−2.41	0.017	−0.463	−0.046	**
taxc	−0.710	0.931	−0.76	0.447	−2.552	1.133	
cor	−0.784	1.137	−0.69	0.011	−3.036	1.467	**
psav	1.354	0.627	2.16	0.033	0.113	2.595	**
gdp	0.000	0.000	0.71	0.042	0.000	0.001	**
exchr	0.004	0.027	0.13	0.896	−0.050	0.057	
tradop	0.000	0.000	−1.19	0.237	0.000	0.000	
illit	0.650	0.535	1.22	0.227	−0.409	1.710	
infrast	0.073	0.042	−1.75	0.083	−0.155	0.010	*
Constant	6.770	5.050	1.34	0.183	−3.228	16.768	
Mean dependent var		4.348		SD dependent va		4.083	
R-squared		0.230		Number of obs		134.000	
F-test		3.310		Prob > F		0.000	
Akaike crit. (AIC)		743.304		Bayesian crit. (BIC)		775.180	

Notes: the values in the parentheses are the *p*-values; ** and * represent 5%, and 10% significance levels, respectively. Source: authors' own calculation, 2021.

Furthermore, tax holiday has a significant positive relationship with the inflows of foreign direct investment into economies. Thus, this outcome answers our third research question, whether the tax holiday influences the inflows of foreign investment in Africa. African economies have been noted for striving for a balanced policy approach to achieving growth and development, according to the report by [48]. This means that countries are making conscious efforts to increase the tax holiday rate, which would reduce the unnecessary burdens on foreign firms and thus impact their investment choice in African economies. Our outcome was predictable based on other studies [22,31,49].

The coefficient of tax concession clearly showed that, although the relationship between tax concession and the inflow of foreign direct investment is negative, it is statistically insignificant as well. The result indicates that economies that offer wide-sweeping tax concessions may not tend to attract the expected level of foreign direct investment. The finding answers our fourth research question, in that the inflow of foreign direct investment is not influenced by a country's tax concession.

Lastly, our control variables, which include political stability and absence of violence coefficients, had a positive and statistically significant relationship with the inflows of foreign direct investment in African countries. This implies that greater political firmness and solidity in African economies affect foreign investors' decisions [5,10]. In addition, corruption and foreign direct investment had a negative but statistically significant relationship. This means that African countries that can eliminate the misuse of public power for private gains would aid the building and strengthening of the nation's economy and thus affect the trust and confidence of foreign business choices [15,50].

Real gross domestic product (constant 2010 USD) reported a positive and statistically significant relationship in attracting foreign investors to nations. Africa economies with greater GDP are seen by foreign firms as being potential for investment opportunities. Our result was supported by earlier studies [6,19,51]. The coefficient of infrastructure recorded a positive and statistically significant relationship with inflows of foreign direct investment in Africa economies. This means that countries with more extensive and adequate infrastructure are more likely to influence foreign businesses since better and quality infrastructure would aid their operations in reaching an optimal level of efficiency [15,52–57]. Other control variables such as exchange rate, trade openness, and adult illiteracy rate were insignificant in influencing the inflows of FDI in African economies [58–60].

To undertake a robustness check, we added additional control variables such as natural resource rent, which also affect FDI inflows in Africa to the baseline specification and checked if our results would remain unchanged. Table 4 below shows that, by employing

dynamic GMM panel data estimation, natural resources are positively related to FDI inflows in Africa. Again, the result from GMM does not differ significantly from our robust random effect regression results. Company tax rate, tax withholding, and tax holiday remain factors that influence the inflows of foreign direct investment in Africa.

Table 4. GMM regression results.

FDI	Coef.	St. Err.	t-Value	p-Value	[95% Conf]	[Interval]	Sig.
Lfdi	0.217	0.088	2.46	0.014	0.044	0.39	**
ctr	−0.266	0.241	−1.10	0.07	−0.738	0.206	*
taxw	−0.418	0.247	−1.69	0.09	−0.902	0.066	*
taxh	−5.596	2.504	−2.24	0.025	−10.503	−0.689	**
taxc	−2.893	1.849	−1.56	0.118	−6.518	0.732	
cor	3.191	2.212	1.44	0.149	−1.143	7.526	
psav	−2.152	1.67	−1.29	0.198	−5.425	1.121	
gdp	−0.002	0.001	−2.25	0.024	−0.003	0	**
exchr	−0.005	0.038	−0.12	0.901	−0.079	0.07	
tradop	0	0	−1.54	0.124	0	0	
illit	0.1	0.08	1.25	0.211	−0.057	0.257	
infrast	−0.028	0.418	−0.07	0.947	−0.846	0.791	
oilrentsofgdp	−0.424	0.219	−1.93	0.053	−0.854	0.006	*
mineralrentsofgdp	0.832	0.279	2.99	0.003	0.286	1.378	***
Constant	31.735	11.059	2.87	0.004	10.059	53.411	***
Mean dependent var		4.348		SD dependent var		4.205	
Number of obs		119		Chi-square		78.819	
Number of instruments		109		Wald chi2 (13)		78.82	
Prob > chi2		0.000					

Notes: the values in the parentheses are the *p*-values; ***, **, and * represent 1%, 5%, and 10% significant levels, respectively. Source: authors' own calculation, 2021.

5. Conclusions and Recommendation

The objective of our paper was to investigate how effective tax incentives influence the inflows of foreign direct investments in Africa via estimation of the robust random effect for our model. We carried out this research on forty African countries for the period 2000–2018.

Our empirical model strived to forecast whether the inflow of foreign direct investment is influenced by tax incentives variables such as company tax rate, tax withholding, tax holiday, and tax concession. Our model controlled for other variables such as gross domestic product (GDP), corruption, political stability and absence of violence, exchange rate, trade openness, adult illiteracy rate, infrastructure, which were underlined as parameters in influencing the inflows of foreign firms based on their tax incentives and other control variables. Based on our findings, our study arrived at the following conclusions.

First, there is a statistically negative relationship between company tax rates and the inflows of foreign firms in African nations. Empirically speaking, the African countries that lower the rate of company tax as an incentive would give foreign businesses the confidence to invest in their economies.

Second, tax withholding had a statistically significant positive relationship with the inflows of foreign direct investment in African economies. This implies that African countries should treat vital areas needed to develop to assist the entire economy as it is a critical determinant influencing foreign businesses' investment choices.

Third, our results revealed a significant positive relationship between tax holidays and the inflows of foreign direct investment in African economies. Thus, foreign firms are highly enticed and willing to invest in African countries with a maximum tax holiday for a given period. Therefore, African nations with low tax holidays for foreign businesses should try to increase their tax holiday, which in turn would affect their investment choices in their economies.

Furthermore, our results revealed a negative and statistically insignificant relationship between tax concession and the inflows of foreign direct investment in Africa. For African countries offering too many tax concessions, the results show a negative effect

on inflows of FDI. A report on “Development in Africa” by the UNECA [48] calls for a balanced policy approach to achieving development in Africa economies by influencing the inflows of foreign investment. Moreover, the collection of quality infrastructures, real gross domestic product (GDP), control of corruption and political stability, and absence of violence recorded a significant relationship with the inflows of foreign direct investment in African economies.

Considering tax incentives specifically, company tax rate, tax withholding, tax holiday, do not only lure foreign investment to African economies, but our paper also recommended some relevant policy implications.

First, for African economies to maximize the economic benefits from foreign direct investment, a complete overhaul of Africa’s tax incentive policy toward foreign direct investment is needed. There is a need for African countries to replace the current ad hoc programs with a comprehensive fiscal regime that is aligned with their country’s development goals. Second, without proper implementation, even the best tax incentive policy can produce bad results. Thus, African economies should adopt a holistic and sophisticated management approach encompassing performance, marketing, administration, and evaluation. As such, these strategies certainly would help alleviate Africa’s progress struggle for financial uplifting and sustainable economic development. Lastly, African countries should eliminate discretionary incentives that are granted without transparency but rather provide tax incentives without discrimination. A tax incentive framework must be clear and simple, time-bound, and consistent with the countries’ interests.

Notwithstanding the beneficial findings, our study has some limitations that must be dealt with to enhance future research for this region. The first limitation was that our paper does not identify the specific foreign firms that are more deserving of tax incentives and to what extent can boost the inflows of FDI in Africa. Future studies should identify the segment of foreign firms that deserve more tax incentives, which would be useful in directing African economies to initiate and implement effective fiscal policies. Another impediment of our examination is an absence of long-haul longitudinal information of all fifty-four African nations as indicated by the United Nations. This issue has been a regular one with numerous studies on developing African nations that feature the requirement for more quality information on countries’ economies; additional international locations might provide additional factual data, which would greatly strengthen our conclusions.

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