Governance Indicators influencing Illicit Financial Outflow from Developing Countries

Abstract

Economic growth has traditionally been attributed to the accumulation of human and physical capital, and increased productivity arising from technological innovation. The quest to attract physical capital (FDI inflow) led to the design and implementation of policies, and building institutions by governments of developing countries to create a congenial investment environment to attract foreign investors. The multinational corporations operating in these developing countries take advantage of these policies to milk these countries of capital through both legal and fraudulent activities. There is the need for a comprehensive scrutiny of the quality of governance indicators that enhance the activities of these multinational companies in order to fight this menace of illicit financial outflow.. This study therefore seeks to explore the influence of cross-country governance indicators on illicit financial flow from developing countries. The study is based on secondary data (panel) drawn from Global Financial Integrity, the World Development Indicators and the Worldwide Governance Indicators. The total number of developing countries included in the analysis is 139 with 1562 observations. Using the multilevel estimation approach, the study finds that regulatory quality has a negative and significant influence on illicit financial flow whilst government effectiveness, corruption and FDI net inflows have a significant positive effect. This calls for developing countries to design and implement sound policies, build effective and accountable institutions, control corruption and enhance regulatory quality in order to control this menace.

1.0 Introduction

Economic growth has traditionally been attributed to the accumulation of human and physical capital, and increased productivity arising from technological innovation. According to Ghazanchyan and Stotsky (2013), investment is a critical component of growth for developing countries among other important drivers. Private investment has been a major determinant of economic growth and employment in many open economies and so opening markets to foreign direct investment (FDI) inflows is as beguiling as it is for trade. The quest to attract FDI inflow led to the design and implementation of policies, and building institutions among others by governments of developing countries to create a congenial investment environment to attract foreign investors. Some of these policies include tax holidays, exemptions on export and import duties, subsidized infrastructures, and limits on workers' rights. The design and implementation of effective tax policies is expected to allow countries to maximise the benefits of external flows by providing higher quality public services and pursuing adequate economic policies (AfDB, 2012a). Developing countries have been improving their regulatory frameworks to attract more FDI inflow by opening their economies, permitting profit repatriation and providing tax holidays and other incentives (UNCTAD, 2002).

Some of these policies seem to be exploited against the very motives for which they were enacted and implemented. The multinational corporations operating in these developing countries take advantage of these polices to milk these countries of capital through both legal and fraudulent activities. Illicit financial flows (IFFs) is defined in Global Financial Integrity (2012) report as "funds that are illegally earned, transferred, or utilized and cover all unrecorded private financial outflows that drive the accumulation of foreign assets by residents in contravention of applicable laws and regulatory frameworks". Issues on illicit financial flows have become very important with respect to economic development of developing countries. Though IFFs from developing countries cannot be measured accurately, there is consensus that the amount is worth more than the official development assistance from OECD donor countries (Herkenrath, 2014). The socio-economic impact of IFFs on developing countries is more severe because of their smaller resource base and markets (OECD, 2013). Report by Global Financial Integrity (2013) indicates that illicit financial flows from developing countries increased by 10.2 percent per annum between 2002 and 2011 after controlling for inflation. In 2011 for example, Asia recorded the largest share of illicit financial flows among the regions and this accounts for 39.6 percent of

total illicit outflows from developing countries whilst developing Europe and Western Hemisphere accounted for 21.5 percent and 19.6 percent respectively. The Middle East and North Africa regions accounted for 11.2 percent of total outflows on average. Though sub-Sahara Africa had the smallest nominal share of regional illicit outflows (7.7 percent), it has the highest average illicit outflows to GDP ratio (5.7 percent (GFI, 2013).

These multinational corporations achieve this from 'legitimate' international tax systems to dodgy accounting arrangements according to the Third World Network Africa (2013) report. It is estimated that Africa lost over $854 billion in illicit financial flows between 1970 and 2008 with a yearly average of about $22 billion. Recent estimates put illicit financial outflows from Africa at $50 billion a year and this poses an economic development threat to Africa against the background that the official development assistance to Africa stood at $46.1 billion in 2012. A report on Illicit Financial Flows from Africa (Scale and Developmental Challenges as cited by Third World Network Africa, 2013) noted that "Just one-third of the loss associated with illicit financial flows would have been enough to fully cover the continent's external debt that reached US$279 billion in 2008." Calculations carried out by Global Financial Integrity show that the estimated illicit financial flows from developing countries amount to about ten times the total amount given as official development assistance (GFI, 2012). The consequence of these illicit financial flows is the aggravation of the enormous socio economic problems confronting developing countries since these activities constitute a drain on foreign exchange reserves, reduce tax revenue, which culminate in worsening poverty in these developing countries. Report by KEPA (2010) indicates that illicit financial flows from developing countries have become a major development policy issue since this act deprives states of tax revenue and disrupts the vital development of the private sector which is recognised in literature as engine of growth in developing countries (Abotsi, Dake and Agyepong, 2014) by distorting competition and this culminate in increased dependency on development assistance (KEPA, 2010). For governments and stakeholders to be able to fight this menace of illicit financial outflow, there is the need for a comprehensive scrutiny of the quality of governance indicators that enhance the activities of these multinational companies. This study therefore seeks to explore the influence of cross-country indicators of governance on illicit financial flow from developing countries. Literature on the determinants of illicit financial flows is limited though these determinants can inform policies formulation to reduce or curb the incidence of illicit financial flows. Previous study on

this subject used import and export misinvoicing (component of illicit financial flow) as the dependent variables (GFI, 2013) but this study rather deploys illicit financial outflows as the dependent variable in finding the influence of relevant governance indicators on illicit financial outflow with FDI inflow as control. These indicators provide explicit and disaggregated information about particular dimensions of governance which is likely to influence illicit financial flow. Also empirical studies in explaining IFFs are generally based on the portfolio choice (PC) model but when the PC model is analysed deploying only developing countries, the empirical results seem to support the assumptions of the PC model only to a certain point (Herkenrath, 2014). The factors of PC model have only limited explanatory power.

Using the multilevel estimation approach, the study finds that regulatory quality has a negative and significant influence on illicit financial flow whilst government effectiveness, corruption and FDI net inflows have a significant positive effect. This paper continues with a literature review on illicit financial outflow and a set of potential determinant variables that influence illicit financial outflow (foreign direct investment inflow, governance effectiveness, regulatory quality and control of corruption). This is followed by a presentation of the methodology deployed in the study. The rest of the paper presents the results, discussion, and finally, the conclusion.

2.0 Literature review

As stated earlier, Global Financial Integrity (2012) report defined illicit financial flows "as funds that are illegally earned, transferred, or utilized and cover all unrecorded private financial outflows that drive the accumulation of foreign assets by residents in contravention of applicable laws and regulatory frameworks". Illicit financial flow is made up of three components which include; commercial transactions, tax evasion and laundered commercial transactions; the criminal element and bribery; and finally abuse of office by public officials (High-level Panel, 2014). Empirical studies in explaining IFFs are generally based on the portfolio choice (PC) model which attributed the massive capital outflow from developing countries to expropriation and currency losses and also a reaction to comparatively low profit expectations (risks aversion) (Collier, Hoeffler and Pattillo, 2001). According to Herkenrath (2014), the PC model falls short in explaining IFFs that originate from economically successful industrialized countries as well as fast-growing emerging countries, since these flows mainly enhance tax evasion. Further to this, to assume that these capital flows are mainly connected to the explanatory variables of the PC

model (flight from economic stagnation, political instability, or the risk of expropriation) 'would make seemingly little sense' (Herkenrath, 2014). Research shows that the factors of PC model have only limited explanatory power (Herkenrath, 2014) since explained variance of their final empirical model is below 50% (Le and Zak, 2006). IFFs are postulated to be a consequence and a cause of development-inhibiting circumstances (Moore, 2012; Shaxson, 2010). A theoretical model of IFFs suggests a circular relationship between IFFs and development-inhibiting economic, political and social conditions (Moore, 2012). The world governance indicators reflect the views of thousands of survey respondents and public, private, and NGO sector experts worldwide on governance. These indicators also present the empirical measures of governance and thus make it possible to find the influence of these indicators on illicit financial flow from developing countries using quantitative analysis. Multinational corporations have been reported to be involved in illicit transfer of capital from developing countries (Third World Network Africa, 2013). Based on literature, this study reckons a set of potential quality governance indicator variables that influence illicit financial outflow. These variables include governance effectiveness, regulatory quality and control of corruption with foreign direct investment inflow as control.

2.1 Illicit financial outflow

Research on illicit financial flows reveals that a source of more outright illicit financial flows is the mispricing of imports and exports to avoid duties and also to transfer monies, especially foreign exchange, out of these developing countries. Trade misinvoicing is one of the key conduits through which economic agents illegally move money out of developing countries (Bhagwati, 1974). This is because the act of deliberately falsifying invoices is illegal in most countries and so trade misinvoicing estimates reflect completely illicit outflows. Another channel of illegal capital flight is via tax havens. KEPA (2010) suggests that most of the companies registered to tax havens really do not conduct any actual activity in these places. In the Cayman Islands for example, there is a building called Ugland House in which over 18,000 companies claim as their headquarters whereas in actual sense these companies do not conduct any actual activity in this building (KEPA, 2010). Tax havens according to KEPA (2010) provide investors and companies with the required tailored legislation, such as banking secrecy and assisting investors to conceal their identities. Report by High-level Panel, (2014) shows that illicit financial flows from Africa are also attributed to aggressive tax avoidance strategies, which

relate directly to the illicit outflows. Criminal activities, ranging from money laundering to drug, people and arms trafficking and smuggling, are also a key component of illicit outflows from developing countries. Commercial activities, according to the High-level Panel are found to be the largest component of illicit financial flows but unfortunately the global institutional framework is least developed in these areas. Resource extraction contracts that are shrouded in secrecy are another commercial source structured deliberately to deny African countries of legitimate earnings from royalties and taxes. The top 15 exporters of illicit capital are China, Malaysia, India, Indonesia, Thailand, and the Philippines in Asia, Nigeria and South Africa in Africa, Russia, Belarus, Poland, and Serbia in Europe, Mexico and Brazil in the Western Hemisphere, and Iraq in MENA (GFI, 2013).

It is estimated that about €1,200 billion crosses state borders illicitly each year (Christensen and Nicholas, 2008) and the sum that leaves developing countries is estimated to comprise over half of this amount (Kar and Devon, 2009). The development assistance paid by rich countries to developing countries in 2008 was only a ninth or tenth part of the wealth that flows in the opposite direction illicitly (OECD, 2009). Between 2003 and 2012, the developing world lost US$6.6 trillion in illicit outflows and after a brief slowdown during the financial crisis in 2009, illicit outflows are once again on the rise, hitting a new peak of US$991.2 billion in 2012 (GFI, 2014). The ratio of illicit financial outflow to GDP is a widely used indicator in assessing the adverse impact of illicit flows on an economy. Illicit financial outflows from Africa, developing Europe and Asia averaged 5.7, 5.8 and 4.1 percent of GDP respectively in 2011(GFI, 2013). Illegal capital flight has been cited as the single most harmful economic problem for developing countries and transitional economies (Baker, 2008). A previous study on drivers of illicit flows found trade misinvoicing to be driven largely by factors which are regulatory in nature (the export proceeds surrender requirement (EPSR) and the extent of capital account openness) and one governance-related (World Bank Control of Corruption indicator) (GFI, 2013).

2.2 FDI Inflow

The pursuit to attract FDI inflow led to the proliferation of multinational companies or firms into developing countries. A major problem with respect to illicit financial flow is how these multinational firms benefit from tax holidays and then sell out just before the expiry period of such concessions, only to re-emerge as a new firm with a new tax holiday period. A cross-cutting

issue in addressing illicit financial flows relates to the activities and practices of tax havens and financial secrecy jurisdictions which provide a destination for illicit financial flows through tax evasion or money laundering. Multinational companies can have hundreds of subsidiaries in different jurisdictions in which they have little or no activity. Tax dodging by multinational companies accounts for two thirds of the illegal capital flight (KEPA, 2010). A common practice, however, has been for the group to resort to declaring the most profit in the jurisdiction with the lowest taxes rather than where the profits were generated. A set of key actors in this illicit financial outflow are the multinational corporations (High-level Panel, 2014) operating in these developing countries. A lion's share of developing countries' tax losses is also attributed to tax dodging (evasion and avoidance) by multinational companies (KEPA, 2010). Therefore countries that receive more FDI inflows are more likely to experience more illicit financial outflow. Though research elsewhere did not find any macroeconomic factors as well as net FDI flows to be consistently significant in explaining export or import misinvoicing (GFI, 2013), it is expected in this study that countries receiving more FDI inflows will experience more illicit financial outflow.

2.3 Governance Effectiveness and Regulatory Quality

The term 'governance' is broad and far-reaching and the improvements to 'virtually all aspects of the public sector' is necessary to achieve 'good governance' (Grindle, 2004). Good governance is referred to by the World Bank as 'sound development management' and regards it as "central to creating and sustaining an environment which fosters strong and equitable development and it is an essential complement to sound economic policies" (World Bank, 1992). Therefore the quality of government's policy formulation and implementation and the credibility of the commitment of government to such policies (regulatory quality) is very important in achieving good governance. According to Roy and Tisdell (1998) good governance depends on institutional structures and the economic resources available to achieve good governance. Effective government is enhanced through strong political leadership and competent public administration (AfDB, 2012b). More effective governments offer higher quality public services, attract more investment, encourage more human capital accumulation, among others and increase the productivity of government (Mauro, 1995).The international development agencies have identified 'bad governance' as a major obstacle to economic growth and to improved welfare in poor countries (Moore, 2001). Countries provide higher quality public services and

pursue adequate economic policies to maximise the benefits of external flow (AfDB, 2012a). Developing countries also open their economies, permit profit repatriation and provide tax holidays to multinational companies so as to improve their regulatory frameworks in order to attract more FDI inflow (UNCTAD, 2002). These multinational companies rather take advantage of these policies and exploit the system through both legal and illegal means. High-level Panel (2014) suggested that in order to address this issue, illicit financial flow must be framed within the context of political considerations since it is more technical. This is because of the nature of the actors involved and the 'fact that the most obvious solutions require strong political commitment and leadership'. Multinational companies may also lobby governments in the form of political campaign contributions to formulate and implement policies that will benefit them. A country may therefore exhibit good governance but yet still experience high illicit financial outflow. Case studies on Brazil, the Philippines, and Russia, shows a relation between purely illicit flows and governance and this relation tends to be even stronger than the relationship between capital flight and governance (Kar and Freitas, 2013; Kar and LeBlanc, 2014; Kar, 2014). The implications of illicit financial flow for resource mobilization, policy and legislation, and international geopolitics, have raised concerns to governments of developed and developing countries alike (High-level Panel, 2014). It is expected in this study that governance effectiveness and regulatory quality will explain variation in illicit financial outflow but the direction of influence of these variables on illicit financial outflow has to be determined empirically.

2.4 Control of corruption

Corruption epitomizes the illicit use of willingness to pay as a decision making criterion and so in most cases multinational companies make payment to public officials in return for a benefit (Abotsi, 2016). Corruption tends to be low at higher level of institutional quality and high at low level of institutional quality and so depending on the level of quality of institutions in the country, corruption may play the role of "sand in the wheels of commerce" or "greasing the wheels" (Abotsi, 2016). Corruption is therefore expected to have a positive impact on FDI inflow at high level of institutional quality and a negative impact at low level of institutional quality (Abotsi, 2016). Corruption was found by High-level Panel (2014) to be a cross-cutting issue across all categories of illicit financial flows. A report by OECD (2014) states that 'high levels of corruption combined with weak institutions and sometimes illegitimate regimes are drivers for

such illicit financial outflows'. Elsewhere, research findings also shows a significant link between corruption and capital flight (Le and Rishi, 2006). Corruption is therefore expected to have a positive influence on illicit financial outflow in this study.

3.0 Methodology

The study on the governance indicators that influence illicit financial outflow is based on secondary data. The data on illicit financial flow is drawn from Global Financial Integrity (GFI, 2013, 2014, 2015). GFI estimates constitute the most comprehensive dataset, which, allows for cross-national and longitudinal comparisons over longer time periods. The data on foreign direct investment inflow is drawn from the World Development Indicators (World Bank, 2013). The control of corruption, regulatory quality, and government effectiveness are drawn from the Worldwide Governance Indicators (World Bank - WGI, 2014). The frequency of the data is annual, and it spans from 2002 to 2013 for 139 developing countries. These indices are part of the six dimensions of governance included in the Worldwide Governance Indicators. These indices are therefore chosen not only because of its authenticity but also because of its free availability on the internet. The total number of developing countries included in the analysis is 139 from five geographical regions. These geographical regions include Asia, Sub Sahara Africa, Developing Europe, Western Hemisphere, and Middle East and North Africa (MENA).

The panel data estimation technique is employed in the estimation of the factors that influence illicit financial outflow from developing countries since this technique according to Ranjan and Agrawal (2011) can capture the dynamic behaviour of the parameters and to provide more efficient estimation and information of the parameters. Many studies in economics have used panel data in their analysis using various estimation techniques including fixed and random effects. To decide whether to use fixed or random effect model, the Hausman test is deployed in making this decision. But the use of Hausman test to decide which model to estimate has come under critical scrutiny recently (Bell and Jones, 2014; Clark and Linzer, 2012). The Hausman test is not a test of fixed effect versus random effect but rather a test of the similarity of within and between effects. The main reason why fixed effect model is preferred to random effect model is the exogeneity assumption (the residuals are independent of the covariates) of the latter which often do not hold in many standard random effect models. According to Bell and Jones (2014), fixed effect estimation models out higher-level variance and makes any correlations

between that higher-level variance and covariates irrelevant, without considering the source of the endogeneity. Higher-level entities in a panel study may be countries, and time-invariant variables could be the regional location. The covariates contain two parts: one that is specific to the higher-level entity which does not vary between occasions, and one which represents the difference between occasions, within higher-level entities. These two parts of the variable can have their own different effects: called 'between' and 'within' effects respectively, which together comprise the total effect of a given time-varying variable (Bell and Jones, 2014). To solve the problem of for heterogeneity bias, Bell and Jones, (2014) modelled the flexible random effect framework to correct the heterogeneity bias. Bell and Jones, (2014) posits that understanding the role of context, be it households, individuals, neighbourhoods, countries or whatever defines the higher level, is of importance to a given research question. Therefore it is prudent that one use a random effect model that analyses and separates both the within and between components of an effect explicitly, and assesses how those effects vary over time and space rather than assuming heterogeneity away with fixed effect. This is why this study uses the multilevel approach in exploring the factors that influence illicit financial outflow from developing countries. Multilevel models allow for study effects that vary by entity (or groups) and also estimate group level averages. Some advantages of multilevel models are the avoidance of sample problems individual regression may face and also the lack of generalization. The use of regular regression ignores the average variation between entities.

3.1 The Multilevel-Model of Illicit Financial Outflow

In connection with discussions of the preceding section, the following multilevel-model (equation 1) is proposed, where the selected variables are expected to influence illicit financial outflow.

$$\begin{aligned} illicit\ financial\ flow_{ij} \\ &= \beta_0 + \beta_1 FDI_net_inflows_{ij} + \beta_2 Control_of_Corruption_{ij} \\ &+ \beta_3 Regulatory_Quality_{ij} + \beta_4 Government_Effectiveness_{ij} + u_{oj} \\ &+ u_{1j} FDI_net_inflows_{ij} + \varepsilon_{ij} \ldots\ldots\ldots (1) \end{aligned}$$

Equation (1) depicts the value of illicit financial flow for the ith county and the jth geographical region as a function of foreign direct investment inflow, control of corruption, regulatory quality and governance effectiveness. The dependent variable is illicit financial flows from developing countries (HMN + GER) in millions of U.S. dollars and this refers to illegal movements of money or capital from developing countries. Hot Money Narrow (HMN) is "a methodology used to measure illicit financial flows recorded in the balance of payments" and Gross Excluding Reversals (GER) is a "methodology used to measure IFFs enabled by trade misinvoicing, measured the IMF's Direction of Trade Statistics (DOTS) database in conjunction with the Fund's International Financial Statistics (IFS) database" (Kar and Spanjers, 2014). Foreign direct investment refers to direct investment equity flows in the reporting economy in current U.S. dollars. The control of corruption index refers to "perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests". Regulatory quality refers to the "perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development". Government effectiveness refers to the "perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies"(World Bank - WGI, 2014). The term u_{oj} is the random intercepts for each of the j regions (it represents the deviation of country i's intercept from the overall mean intercept). The term u_{1j} represents the deviation of country i's FDI net inflows slope from the overall mean FDI net inflows slope (β_1). The worldwide governance indicators variables are transformed from their original scale, which ranges from approximately -2.5 (weak) to 2.5 (strong), to a new scale ranging from 0 to 100 for computational purposes and to allow for easy interpretation of the results. The following formula was used: x = (a + 2.5)*20, where x is value of the transformed variable, and a refers to the value of the original scale. This formula was also used by Abotsi and Iyavarakul (2015). This means that the higher a country is on the scale, the better the governance performance in terms of control of corruption, regulatory quality and government effectiveness. The correlation matrix (Table 1) indicates that there are correlations among some of the independent variables but the statistical nature of panel data estimation addresses the collinearity problems (Ranjan and Agrawal, 2011). This study explores how illicit financial outflow vary with each explanatory

variables holding other factors constant. The focus is not on casual interpretation and thus endogeneity and omitted variables are not relevant to the analysis in the current study.

Table 1: Correlation Matrix of Variables

	variables	**1**	**2**	**3**	**4**	**5**
1	illicit_financial_outflow	1				
2	FDI_net_inflows	0.8191	1			
3	Control_of_Corruption	-0.0487	0.0049	1		
4	Regulatory_Quality	0.0521	0.0889	0.6213	1	
5	Government_Effectiveness	0.0919	0.1021	0.8702	0.6939	1

4.0 Results

4.1 Descriptive statistics

The descriptive statistics of the variables deployed for the study are presented in Table 2. The total observations used for the analysis is 1562. The period under study is from 2002 to 2013. The mean illicit financial outflow is 5288.49 and the standard deviation is 17122.72. This shows that on the average, the illicit financial outflow is quite large and widely dispersed within the developing countries. The result also shows that over the period under consideration, some of the developing countries experienced negative FDI inflow.

Table 2: Descriptive statistics

Variable	Observ.	Mean	Std. Dev.	Min	Max
illicit_financial_outflow	1562	5288.487	17122.72	0	258640
FDI_net_inflows	1562	4.05E+09	1.73E+10	-2.09E+10	2.91E+11
Control_of_Corruption	1562	42.71972	14.13457	13.6	85.2
Regulatory_Quality	1562	44.08707	14.58615	-3.6	80.8
Government_Effectiveness	1562	43.11216	13.92816	5	82

4.2 Empirical Results of the Mixed Model Estimation

4.3 Model Specification Diagnostics

Before a mixed model can be estimated, it is prudent to find out whether there is sufficient variance represented at a higher level to warrant the mixed approach. This is done by using the Intraclass Correlation Coefficient (ICC). As a rule of thumb, about 10% of the total variance needs to be represented at a given level. The ICC found in the model in the this study is ICC = ((3957.4)^2)/(((3957.4)^2)+((10145.35)^2)) = 0.132061119. Approximately 13.2% of the total variance in illicit financial outflows can be attributed to differences between the geographical regions (i.e., level 2) and this is more than the minimum of 10% expected for further modelling. The next is the random intercept model. Unlike the Ordinary Least Square (OLS) regression model where the intercept and slope are both fixed and also where the population parameters and individuals' variation from the predicted dependent variable is represented completely by the single error term, the individual countries illicit financial outflows are modelled in the mixed model as having a different overall level (or mean) that is represented by the random intercept according to the level 2 unit (or cluster) but they all share the same regression slope. Random intercept models will account for the statistically problematic situation in which there are known differences on the outcome across levels of a variable that is implicitly (or explicitly) included in the sampling scheme (Gelman and Hill, 2007). To account for this difference across regions, the intercept is allowed to vary randomly (across regions). This would allow a slightly more accurate representation of the effect of the predictors on illicit financial outflows to be obtained. With the estimated standard deviation of the random intercepts (1313.878) along with the standard error (495.3016), it can be concluded that these intercepts do vary from place to place since the estimated standard deviation of the random intercepts is significantly different from zero.

The next is to allow the slope of the regression line to take on a different value across the values of the level 2 variable. The FDI inflows predictor variable is designated as having a random slope and so the slope parameter is allowed to have a variance (random coefficient models). This will allow FDI inflows to have a different effect on illicit financial outflows across different regions (This allows the slope variance of FDI inflows to vary randomly rather than to be fixed at zero). To find out whether to treat the slope as random or regard it as a fixed effect, there is the need to assess whether the variance of the slope is significantly different from zero. The standard

deviation of random slopes on FDI inflows is more than twice its standard error suggesting significant regional variation. Furthermore a likelihood ratio test is deployed to test for the random intercept model and the random coefficient model. The difference is distributed as chi-square with degrees of freedom equal to the difference in degrees of freedom across the models (Gelman and Hill, 2007). The null hypothesis is that there is no significant difference between the two models. Since the result of the likelihood ratio test show that LR chi2 is equal to 166.75 with probability of 0.00000, the null hypothesis is rejected with the conclusion that there is a statistically significant difference between the models. This shows that the random coefficients model provides a better fit (it has the lowest log likelihood). It can be concluded that the random variance of the FDI inflows slope is different from zero. The Wild Chi-square test of joint significance reports that the null hypothesis that independent variables are jointly equal to zero at any conventional level of significance (p=0.000) may be rejected.

4.4 Interpretation and discussion of results

The results of the mixed and OLS models are presented in Table 3. The fixed effects of a mixed model are interpreted in the same way as an ANOVA, regression, or ANCOVA depending on the nature of the explanatory variables(s). However it should be noted that any of the coefficients that have a corresponding random effect represent the mean over all subjects, and each individual subject has their own "personal" value for that coefficient. Random coefficients must be variable across groups. Conceptually, fixed coefficients may be invariant or varying across groups. The OLS results are presented only for the purpose of comparison. As stated earlier, this study only explores how illicit financial outflow vary with each explanatory variables holding other factors constant and not casual interpretation. Since the object of this study is to have an idea on how world governance indicators influence illicit financial flow, only qualitative interpretations of the coefficients are considered. The results shows that FDI net inflows, control of corruption, regulatory quality and government effectiveness significantly influence illicit financial flow at 1%. The results show that FDI net inflows and government effectiveness variables have a positive influence on illicit financial flow but control of corruption and regulatory quality variables have a negative effect.

Table 3: The Results of the Mixed Model

VARIABLES	Multilevel_Model illicit_financial_flow	OLS_Model illicit_financial_flow
FDI_net_inflows	9.10e-07***	7.88e-07***
	(2.60e-07)	(1.43e-08)
Control_of_Corruption	-242.5***	-304.3***
	(34.97)	(35.43)
Regulatory_Quality	-61.98***	-48.90**
	(22.42)	(23.15)
Government_Effectiveness	258.1***	317.1***
	(38.72)	(39.11)
Constant	3,969***	3,578***
	(1,070)	(855.6)
Observations	1,562	1,562
sd(FDI_net_inflows)	5.67e-07	
	(1.99e-07)	
sd(_cons)	1313.878	
	(495.3016)	
sd(Residual)	8984.254	
	(161.3164)	
R-squared		0.687
Number of groups	5	

sd = standard deviation Standard errors in parentheses

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

The results depict that on the average countries which receive more foreign direct investment inflow experience more illicit financial outflow from their countries. Multinational corporations have been cited as a set of key actors in this illicit financial outflow from developing countries (High-level Panel, 2014). It is therefore not surprising that, countries which receive more foreign direct investment inflow experience more illicit financial outflow. One of the three different theories of foreign direct investments (the eclectic theory by Dunning, 1988) is the location advantages the multinational corporations enjoy in the foreign country. The specific location advantages can be divided into three categories including economic benefits, political advantages and social advantages (Abotsi, 2016). Structural market distortions such as government intervention, which affect costs and revenues culminate into this location advantages (Óladóttir, Harðardóttir, and Jóhannsdóttir, 2008). According to Williamson (1985), governance structure that multinational corporations choose for a venture is driven by the desire to minimise their transaction cost. It is now emerging that these multinational corporations do not only exploit

their location advantages in the foreign countries to reduce transaction cost but also involve themselves in activities (misinvoicing, tax haven secrecy, anonymous companies, and money laundering techniques) that facilitates illicit financial outflows.

As indicated earlier, the world governance indicators were transformed from their original scale ranging from approximately -2.5 (weak) to 2.5 (strong) to a new scale range of 0 to 100 for computational purposes and also to allow for easy interpretation of results. This means that the higher a country is on the scale, the better its governance performance. The results indicate that on the average countries which exhibit high governance effectiveness rather experience more illicit financial flow from their countries. This finding is consistent with previous studies that found a link between purely illicit flows and governance (Kar and Freitas, 2013; Kar and LeBlanc, 2014; Kar, 2014). It means that the exhibition of high governance effectiveness by developing countries is necessary but not sufficient in fighting illicit financial outflow. The results also indicate that on the average, countries which exhibit high regulatory quality experience less illicit financial flow from their countries. This means that the ability of governments to formulate and implement sound policies and regulations are paramount in the fight against illicit financial outflow. In the case of control of corruption variable, countries scoring low on the scale are relatively highly corrupt and those scoring high are relatively less corrupt. This means that on the average developing countries that are more corrupt experience more illicit financial flow from their countries. This finding is consistent with earlier studies where panel data regressions indicates that an increase in corruption increases trade misinvoicing (GFI, 2013). Le and Rishi (2006) also found a significant link between corruption and capital flight. The finding is also consistent with High-level Panel (2014) conclusion that corruption is a cross-cutting issue affecting all three components (1. commercial transactions, tax evasion and laundered commercial transactions, 2. the criminal element and bribery and 3. abuse of office by public officials) of illicit financial flows from Africa.

5.0 Conclusion

This study explored the factors that are likely to influence illicit financial outflow from developing countries. Deploying the multilevel approach, the study finds that FDI inflow, governance effectiveness, regulatory quality, and control of corruption influence illicit financial outflow from developing countries. FDI net inflows, government effectiveness and corruption have a positive

and significant influence on illicit financial flow whilst regulatory quality has a negative effect. This calls for developing countries to design and implement sound policies, build effective and accountable institutions, control corruption and enhance regulatory quality in order to control this menace. Global Financial Integrity suggested specific recommendations (see Global Financial Integrity, 2014) that world leaders should focus on to curb the opacity in the global financial system. The recommendations tackle activities that facilitate these outflows such as misinvoicing, tax haven secrecy, anonymous companies, and money laundering techniques among others. It is also expected that the announcement made by heads of the leading industrial countries and developing economies of the G20 in 2009 to end the banking secrecy of tax havens and help developing countries to benefit from "a new era of cooperation in taxation (KEPA, 2010) will be fulfilled. In as much as FDI inflow is necessary in the development process of developing countries; extreme care should be exercised by these developing countries in the policies they enact. It is recommended that further studies on this topic should be focused on finding out why countries with effective governance rather experience more illicit financial outflow. The study takes into considerations the fact that there may be some errors in the compilation and estimation of Global Financial Integrity data but in the absence of any 'better' alternative data on illicit financial outflow, the study deployed the data by Global Financial Integrity. This is the limitation of the study.

6.0 References

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