An ARDL Approach to Evaluating Illicit Financial Flows & Economic Development in Zimbabwe.

Lawrence Dumisani Nyathi., Japhet Mutale

National University of Science and Technology, PO Box AC 939, Ascot, Bulawayo, Zimbabwe

DOI: https://doi.org/10.51244/IJRSI.2024.1109022

Received: 27 August 2024; Accepted: 02 September 2024; Published: 28 September 2024

ABSTRACT

This study examines the nexus between Illicit Financial Flows (IFFs) on economic development in Zimbabwe. The study data covered the period 2000 -2023 using an econometric analysis applying the Autoregressive Distributed Lag (ARDL) regression model to assess the relationship between IFFs and economic development in Zimbabwe. Most empirical studies on developing countries show that in both short and long run. IFFs continue to jeopardize Zimbabwe's economic stability and impede socioeconomic advancement despite attempts to redress such activities by government and other stakeholders. Illicit financial flows (IFFs) are a big barrier to Zimbabwe's growth. Prevalence of illicit financial flows has ensured capital flight has costed the entire continent of billions of US dollars. The various forms of IFFs not only reduce the revenue base of the economy but its multiplier effects have resulted in stunted economic development. This supports the continued call for policymakers and government to develop effective policies to deter and control these activities.

The research findings indicate that when corruption, foreign direct investment and gross domestic savings are used as explanatory variables there is a long term cointegration relation with dependent variable which is gross domestic product. In the long term relationship, CPI has a significant negative impact on GDP with a coefficient of -1.664502 and a p-value of 0.0172, implying that higher illicit financial flows is detrimental to economic performance. In the short-term relationship, gross domestic savings and economic development, foreign direct investment and economic development, corruption and economic development are all reinforcing relationships. In conclusion, the study underscores the need to address illicit financial flows to enable economic development. Therefore the paper recommends that government of Zimbabwe should effectively engage policies that identify and deter IFFs because the multiplier effects of the activities have a negative impact on economic development.

Keywords: Illicit financial flows, Economic Development, Tax evasion, misinvoicing,bribery, Money laundering, illicit trade, Governance, Zimbabwe, Africa.

INTRODUCTION

In Zimbabwe, illicit financial flows (IFFs), have become a major hindrance to economic growth, endangering social advancement, budgetary stability, and the integrity of governance. Mutambara (2019) weighs in to say that IFFs deter economic stability as well socioeconomic development. The term "illicit financial flows" describes the transfer of funds and assets across national borders via dishonest methods, such as money laundering, tax evasion, corruption, and illicit trade (United Nations Economic Commission for Africa [UNECA], 2018). The High Level Panel (2021) also defines IFFs as cross border exchanges of value, money or otherwise, which are illegally earned, transferred or utilized. Similar to numerous developing nations, Zimbabwe faces the widespread existence of illicit financial flows (IFFs), which is further compounded by structural deficiencies in governance structures and economic susceptibilities (Chitambara, 2020). IFFs continue to jeopardize the nation's economic stability and impede socioeconomic advancement despite attempts by the government and foreign partners to take action on this issue (Mutambara, 2019). AFRODAD(2022) projects that Africa has lost US $1.3 trillion through IFFs since 1980. IFFs involve a variety of actors, including people, companies, and criminal networks, and cover both illegal inflows (such as proceeds of crime, illicit investments) and outflows (such as capital flight, transfer pricing) (Baker, 2005).

According to Global Financial Integrity (2019) postulates that Sub-Saharan Africa (SSA) is the only region

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

where outflows outweigh inflows and has the highest global propensity for trade misinvoicing. Illicit financial flows (IFFs) are a big barrier to Zimbabwe's growth. They directly influence the nation's ability to increase, maintain, and mobilize its own means to support long-term economic development. Zimbabwe's GDP lost more than USD $32.179 billion between 2000 and 2020 (Kurebwa, 2021). It is disturbing how swiftly huge amount of money are being illegally moved from developing countries. The United Nations Conference on Trade and Development's most recent data indicates that illicit capital flight costs African nations $88.6 billion yearly, or roughly 3.7% of the continent's GDP, almost double the funds received in form of official development assistance (ODA) (US$ 48 billion). Studies have argued that by recovering financial resources lost through various forms of IFFs including tax evasion, tax avoidance, money laundering and trade misinvoicing, a government can close the financing gap for its SDGs including expanding social protection. . This capital flight occurs through a range of strategies, including tax evasion, intentional misreporting of trade shipments, and criminal activities like theft and corruption. According to UNCTAD's Economic Development in Africa Report (2020), illicit capital flight accounts for an estimated $88.6 billion (or 3.7% of Africa's GDP) in annual departures from the continent.

AFRODAD found that Zimbabwe lost $2.83 billion in these aforementioned sectors between 2009 and 2013 to IFFs in various forms such as corruption, trade mispricing, tax evasion, tax avoidance, corruption among others (AFRODAD, 2015). This equates to an average loss of revenues worth $570.75 million on an annual basis. The study revealed that IFFs are attributed to numerous factors like loopholes exploited in tax laws which are exploited by corporations, misreporting in the mining industry, low enforcement of regulations and lack of transparency and accountability (AFRODAD, 2022). Meanwhile the Crisis Report (2021) found that Zimbabwe lost about US$32,179 billion to illicit financial flows over the previous two decades, and lost USD$1.5 billion approximately to gold smuggling in 2020, compared to US$800 million in official Fidelity exports.

Illicit financial flows (IFFs) in the extractives industry have a substantial influence on Zimbabwe. Artisanal mining is one of the most seriously affected industries. When establishing Zimbabwe's artisanal mining rules, the issue of illicit financial flows will be ignored. Poverty drives rural artisanal mining, which has negative environmental consequences. The formalization of this sector should be the first step in preventing illicit financial flows (Mukwakwami, 2013). According to an African Development Bank report (2019), IFFs have cost Zimbabwe a total of $12 billion over the last three decades, ranging from tax evasion and illegal business practices to shady financial transactions. It is deeply ingrained in society. As a result of the IFF-causing forces uniting, Zimbabwe has become a full-fledged kleptocracy.

Zimbabwe is more vulnerable to the dangers of illegal trade and exploitation because of its significant reliance on resources of nature, such as minerals and agricultural commodities Mavhiki and Hlongwana (2021). In light of this, the study aims to add to the corpus of knowledge by offering a thorough examination of the influence of IFFs on Zimbabwe's economic development and by putting forth sensible policy suggestions to deal with this urgent issue. A thorough investigation to assess the nexus of illicit financial flows on economic development in Zimbabwe, is the main focus of the proposed study. The research also focuses on examining evidence-based analysis and propose policy recommendations and strategic interventions to mitigate the impact of illicit financial flows and promote sustainable economic development in Zimbabwe.

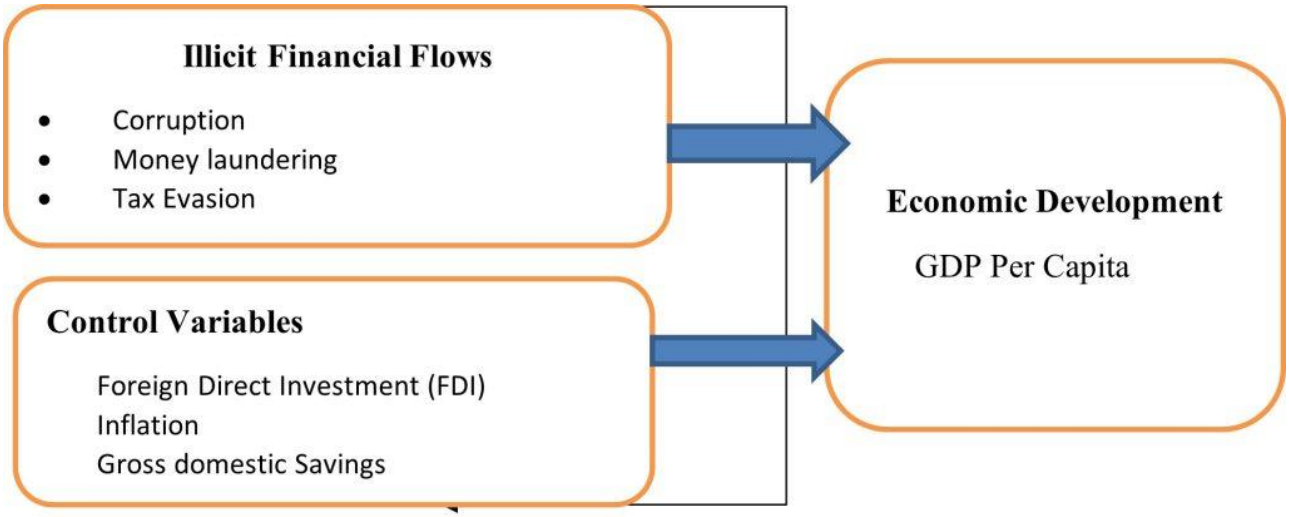
LITERATURE REVIEW

Conceptual framework of illicit financial flows

The conceptual framework of IFFs encompasses both illicit outflows and illicit inflows. These flows undermine the integrity of financial systems, erode governance structures, and impede economic development by diverting resources away from productive investments and legitimate activities. A conceptual framework is a diagrammatical depiction that shows how autonomous and ward variables relate to one another (Carbonnier and Mehrotra, 2018). The comprehension of the dynamics underlying illicit financial flows (IFFs) necessitates the application of a conceptual framework that integrates the diverse aspects, motivators, and outcomes of these unlawful undertakings. In light of the aforementioned theoretical viewpoints, the conceptual framework illustrated in figure 1 below can demonstrate the connection between illicit financial flows and economic development

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

Figure 1: Conceptual framework depicting connection between illicit financial flows and economic development



Source: Adopted from Economic Development in Africa Report (2020) and UNCTAD secretariat (2020)

Literature Review

Chirowamhangu (2023) examined the effect of Illicit Financial Flows (IFFs) and capital flight on Zimbabwe's economic growth and development. Using data that covered the period 1980-2020 applying the Autoregressive Distributed Lag (ARDL), data showed that capital flight had a positive coefficient relationship with GDP in the long run. It was statistically significant and capital flight also had a negative and insignificant effect on manufacturing output during the period 1980-2020.Kurebwa (2021) posits that Illicit Financial Flows (IFFs) is a major challenge to Zimbabwe's development. They have a direct impact on the country's stability to raise, retain and mobilize its own resources to finance sustainable economic development. The study finds that Zimbabwe lost over US$32.179 billion during the period 2000 to 2020. UNCTAD (2020) reports that illicit financial flows strip government treasuries of needed resources for development expenditure. Their findings confirm that financial flows are high in Africa and have been increasing over time. Curbing illicit financial flows is therefore an avenue for providing African countries with additional funds towards achieving Agenda 2063 and the Sustainable Development Goals. Nerea (2018) conducted a study in Ethiopia's economic landscape, evaluating the influence of Illicit Financial Flow (IFF) on its growth. Employing secondary data from 2000 to 2015, the study revealed a substantial negative impact of IFFs on GDP, advocating for stringent controls and collaborative strategies to counter this trend. The impact of illicit cash flows on the Nigerian economy was scrutinized by Ogbonnaya and Ogechuckwu (2017). Utilizing data from the Central Bank of Nigeria's statistical bulletin and estimates of illicit financial flows from Global Cash Integrity spanning 1980 to 2015, the study unveiled significant long-term relationships between these financial flows and economic development. It recommended urging industrialized nations to enact regulations to curb money transfers to tax havens, pertinent not only to Nigeria. Lastly, (OECD, 2014) states that illicit financial flows (IFFs) strip resources from developing countries that could be used to finance much-needed public services, from security and justice to basic social services such as health and education, weakening their financial systems and economic potential.

The research gap

Zimbabwe has lost over 3 billion US dollars due to IFFs and this has tripped the domestic economy of the much necessary resources that could be used to finance much-needed public services, from security and justice to basic social services such as health, social protection and education, thus weakening the financial system and economic potential. IFFs are prone to developing countries which are mainly dominated by extractive sectors, thus bleeding the fiscus of the potential revenue for economic growth and development. Few studies in Zimbabwe have addressed the impact of IFFs and economic development on a broader scale. Therefore, findings of this study will enlighten policymakers and government to develop effective policies and continue to have geopolitical and bilateral engagements to share knowledge and information to deter and control these activities.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

METHODOLOGY

This study takes Zimbabwe as an example, selects time series data from 2000 to 2023 and applies the ARDL estimation method to explore the nexus between illicit financial flows and economic development. The study makes gross domestic savings, corruption and foreign trade as explanatory variables to explore the long-term and short-term relationships with other remaining variables. In addition, the study will deliver helpful policy insights for other developing countries facing similar situations.

Econometric Model and Methodology

The study adopts ARDL model from Jiang, Zhu, and Wang (2022). The ARDL was theoretically formulated by Charemza et al (2001) and Pesaran et al 1997; 2001). The studies promote ARDL as one of the most applied methodologies due to its various advantages such the number of samples it not high and it is suitable for small samples; it is very flexible and allows analysis with 1(0) and/or I(1). Further, unlike other conventional method different lags can be used in the model for different variables and autocorrelation and endogeneity issues are fully addressed (Rahman et al (2017) and Ali et al (2017)). The study constructed an unconstrained error correction model that includes long term and short-term relationships between variables. Moreso, the explained variables of formulas (1-4) are gross domestic product, corruption, foreign direct investment and gross domestic savings.

$$\Delta GDP = \beta_0 + \beta_1 GDP_{t-1} + \beta_2 CPI_{t-1} + \beta_3 FDI_{t-1} + \beta_4 GDS_{t-1} + \sum_{i=0}^{p} \beta_{1i}\, \Delta GDP_{t-i} + \sum_{i=0}^{p} \beta_{2i}\, \Delta CPI_{t-i} + \sum_{t-i}^{p} \beta_{3i}\, \Delta FDI_{t-i} + \sum_{t-i}^{p} \beta_{4i}\, \Delta GDS_{t-i} + \mu_{1t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 1$$

$$\Delta CPI = \gamma_0 + \gamma_1 CPI_{t-1} + \gamma_2 GDP_{t-1} + \gamma_3 FDI_{t-1} + \gamma_4\, GDS_{t-1} + \sum_{i=0}^{P} \gamma_{1i}\, \Delta CPI_{t-i} + \sum_{i=0}^{P} \gamma_{2i}\, \Delta GDP_{t-i} + \sum_{i=0}^{P} \gamma_{3i}\, \Delta FDI_{t-i} + \sum_{i=0}^{P} \gamma_{4i}\, \Delta GDS_{t-i} + \mu_{2t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 2$$

$$\Delta \text{FDI} = \lambda_0 + \lambda_1 FDI_{t-1} + \lambda_2 GDP_{t-1} + \lambda_3 CPI_{t-1} + \lambda_4 GDS_{t-1} + \sum_{i=0}^{P} \lambda_{1i}\, \Delta FDI_{t-i} + \sum_{i=0}^{P} \lambda_{2i}\, \Delta GDP_{t-i} + \sum_{i=0}^{P} \lambda_{3i}\, \Delta CPI_{t-i} + \sum_{i=0}^{P} \lambda_{4i}\, \Delta GDS_{t-i} + \mu_{3t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 3$$

$$\Delta \text{GDS} = \emptyset_0 + \emptyset_1 GDS_{t-1} + \emptyset_2 GDP_{t-1} + \emptyset_3 FDI_{t-1} + \emptyset_4 CPI_{t-1} + \sum_{i=0}^{P} \emptyset_{1i}\, \Delta GDS_{t-i} + \sum_{i=0}^{P} \emptyset_{2i}\, \Delta GDP_{t-i} + \sum_{i=0}^{P} \emptyset_{3i}\, \Delta FDI_{t-i} + \sum_{i=0}^{P} \emptyset_{4i}\, \Delta CPI_{t-i} + \mu_{4t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 4$$

Where,

$\mu_{1t}, \mu_{2t}, \mu_{3t}, \mu_{4t}$, is white noise

Δ is the first order difference

P is the lag order which is usually calculated using AIC/ SBC Criterion

$\beta_i, \gamma_i, \lambda_i, , \emptyset_i$ where (i=0,1.2.3,4) is the long term coefficient between variables

$\beta_{ji}, \gamma_{ji}, \lambda_{ji}, \emptyset_{ji}$ where (j=0,1,2,3,4) is the short term coefficient between variables

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

Variable and Data

The study focuses on the short and long term nexus of Zimbabwe illicit financial flows and economic development using the following indicators shown as variables (**Table 1**). The study made use of time series data from 2000 to 2023 in Zimbabwe.

Table 1: Variable Description

Variables	**Variable description**	**Unit**	**Source**
Gross Domestic Product	Aggregate output is called Gross Domestic Product (GDP)	%	World Bank
GDS-Gross Domestic Savings	Domestic savings rate (GDS)	% of GDP	World Bank
FDI-Foreign Direct investment	measured in USD and as a share of GDP (FDI)	USD	World Bank
CPI-Corruption	Measured per score (CPI)	%	World Bank

Auto-regressive Distributive Lag (ARDL) Test

The ARDL limits testing approach was used to look at the long-term relationship between the variables in the general model. The Akaike Information Criterion and the Schwartz Bayesian Criterion were used to determine the order of delays on the initial differenced variables in equations. To determine a long-term link between the variables under examination, a limits F-test was then used to the equation. The crucial values provided for small samples are compared to the results of the F test after it has been computed. The upper bound assumes that all variables are I and the lower critical bound assumes that all variables are I (0). We reject the null hypothesis that the variables are either I (0) or I (1) if the F-test statistic computed is greater than the upper bound critical value. At a given level of significance, the null hypothesis cannot be ruled out if the derived F-test statistic is smaller than the lower bound critical value. The importance of the error correction term is used to make a conclusion whether the F-test is inconclusive if it falls between the upper and lower boundaries. The co-integration will be done in order to avoid the problem of spurious results by conducting a unit root test for residuals generated and to determine the long run relationship between the dependent and independent variables.

Model Assumptions and Diagnostic Tests

According to Kramer et al. (1985), a conventional regression output requires the addition of several specification checks. To determine whether the data gathered and used is reliable and objective, a number of tests were run in order to test for econometrics a priori postulations. Co-integration, stationarity, the ARDL test, and auto-correlation are a few examples of such data adequacy requirements.

RESULTS AND DISCUSSION

Table 2: Descriptive Statistics

	GDP	CPI	FDI	GDS
Mean	-0.108333	12.32917	1.290542	-1.570513
Median	0.150000	11.50000	1.225000	-2.000000
Std. Dev.	9.096914	10.18031	0.934998	8.272164

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

Skewness	-0.004986	0.023743	0.781675	-0.136333
Kurtosis	2.763448	1.035921	3.897678	3.254202
Jarque-Bera	0.056056	3.859859	3.249886	0.138965
Probability	0.972361	0.145158	0.196923	0.932876
Observations	24	24	24	24

Source: Author's computations from E-views 12

From table 2 above all the mean and median of all variables are statistically significant. The difference between the maximum and minimum values of each variable indicates that the time series data for the variables fluctuates dramatically. GDP have a JB statistic of 0.05056, which is extremely low, indicating that the residuals are very close to being normally distributed. GDP also have a p value of 0.972361, a very high value indicating that the observed JB statistic is entirely consistent with the residuals being normally distributed. The results shows a strong evidence that the residuals are normally distributed. The same applies to CPI, FDI and GDS. The very low Jarque-Bera statistic and high p-value (0.932876) suggest that GDS is likely to be normally distributed. Furthermore, TO Kurtosis is less than 3 and the absolute value of skewness is close to 0, indicating that the data are a flat distribution. Since the p-value is much higher than the common significance levels (0.05 or 0.01), we fail to reject the null hypothesis of normality for GDS.

Table 3: Unit root test (Augmented Dickey–Fuller (ADF))

Variable	**ADF**		**P-value**	**Order of integration**
	Level	**1st Difference**		
GDP	0.0869	-5.333293***	0.0003	I(1)
CPI	0.8241	-4.551139***	0.0017	I(1)
FDI	0.0564	-6.800021***	0.0000	I(1)
GDS	0.0548	-4.920052***	0.0008	I(1)

N.B.: *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Source: Author's computations from E-views 12

In table 3 above specifies stationarity of each variable can be observed. The variables GDP, CPI, FDI and GDS were stable at 1% significance level after the first-order difference. The variables are all integrated to order one I (1) with p-values less than 0.05. Further, table 4 below shows the outcomes of the unit root test under the null hypothesis that there is a unit root. We reject the null hypothesis that there is a unit root if the Augmented Dickey Fuller (ADF) statistic exceeds the test critical values or if the p value is less than 0.05 at the specified level of significance; otherwise, we fail to reject. Under the null hypothesis that there is a unit root problem against the alternative hypothesis of variable stationarity, this study used the Augmented Dickey Fuller test to determine the stationarity levels of the variables in the model. The results reveal that only GDP, FDI, GDS is stationary at level at 10 % significance level, while all the variables are stationary after first differencing as shown by the p values less than 0.05. We therefore, reject the null hypothesis that there is a unit root problem. The variables are cointegrated at order 1 which meets the cointegration test conditions.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

Cointegration analysis using Long-run Form F bound test

Table 4: F-Bounds Test

Test Statistic	Value	Sig.	I(0)	I(1)
F statistic	4.996787	10%	3.47	4.45
K	3	5%	4.01	5.07
		1%	5.17	6.36

Source: Author's computations from Views 12

The ARDL bounds test suggests that there is evidence of a long-run relationship between the variables, particularly at the 10% significance level, as the F-statistic (4.996787) exceeds the upper bound (4.45), leading to the rejection of the null hypothesis of no cointegration. However, the evidence is inconclusive at the 5% significance level, where the F-statistic falls between the lower (4.01) and upper (5.07) bounds. At the 1% significance level, the F-statistic is below the lower bound (5.17), indicating no cointegration. Thus, while a long-run relationship is suggested at a lower confidence level, the evidence is not strong enough to confirm this relationship at stricter significance levels.

Long- and short-term coefficient estimation

Long term coefficient estimates

Table 5: Results of long- and short-term coefficients of ARDL-ECM.

Variable	Coefficient	Std Error	t-statistic	Prob
Long term coefficient estimates				
GDP(-1)	0.465749	0.271998	1.712326	0.1125
CPI	0.931075	0.536895	1.734185	0.1085
CPI(-1)	-1.664502	0.602298	-2.763586	0.0172
CPI(-2)	0.733716	0.633930	1.157409	0.2696
FDI	-0.510292	2.607574	-0.195696	0.8481
FDI(-1)	-5.524413	2.503120	-2.207011	0.0475
GDS	0.139209	0.327777	0.424705	0.6786
GDS(-1)	-0.931172	0.331955	-2.805112	0.0159
R-squared	0.716349			
Adjusted R-squared	0.503610			
F-statistic	3.367272			
Prob (F-statistic)	0.026843			

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

Durbin Watson Stat 2.477955				
Short term coefficient estimates				
D(CPI)	0.931075	0.382629	2.433366	0.0315
D(CPI(-1))	0.931075	0.382629	2.433366	0.0315
D(FDI)	-0.733716	0.365331	-2.008358	0.0677
D(GDS)	-0.510292	1.377144	-0.370544	0.7174
CointEqtn(-1)*	0.139209	0.214883	0.647836	0.5293
	-0.534251	0.106885	-4.998393	0.0003

Source: Author's computations from EViews 12, Explained variable GDP (1,2,1,1)

GDP is the explainatory variable

The R-squared of the ARDL model is 0.716349, indicating a strong fit, explaining more than 71% of the variation in GDP. Adjusting for the number of predictors, the adjusted R-squared of 0.503610 shows that the explanatory power is still moderate. The model as a whole is statistically significant since the F-statistic is significant at the 5% level. The residuals appear to be significantly autocorrelated, according to the Durbin-Watson statistic, which shows that the model's assumptions on the independence of mistakes are probably met.

The ARDL model's estimation results indicate that various factors influence GDP, with particular emphasis on the Corruption Perception Index (CPI), Foreign Direct Investment (FDI), and Gross Domestic Savings (GDS). The lagged value of GDP has a positive coefficient of 0.465749 but is statistically insignificant with a p-value of 0.1125, suggesting that past GDP does not strongly influence its current value in this model.

The CPI, used as a proxy for illicit financial flows, shows a positive coefficient of 0.931075 with a p-value of 0.1085, indicating an insignificant relationship with GDP in its current form. However, the one-period lagged CPI has a significant negative impact on GDP with a coefficient of -1.664502 and a p-value of 0.0172, implying that higher illicit financial flows in the past detrimentally affect current economic performance. This finding aligns with empirical studies such as Cooray and Schneider (2013) and Mauro (1995), which highlight the negative effects of corruption on economic growth. Higher corruption levels will deter economic development both in the short and long run. This is consistent with Muzurura (2017) who agrees that higher levels of corruption deter investment and economic growth. Zimbabwe is losing usd3 billion dollar annually due to corruption. (National Prosecution Authority, 2024). As the economy is expanding due to implementation of expansionary policies amidst a growing economy which was on a recession for past two decades corruption has been a mainstay in the Zimbabwean economy. Furthermore, Zimbabwe is dodged by weak institutions which are heavily politicised and massive corruption is the order of the day. Conversely, Méon and Sekkat (2005) suggest that in some contexts, corruption might facilitate economic activity by bypassing inefficient regulations, which contradicts the consistent negative impact found in this analysis.

The results also indicate that FDI has a significant negative impact with a coefficient of -5.524413 and a p-value of 0.0475, significant at the 0.05 level. Foreign Direct Investment was also negatively significant to economic development. Since Zimbabwe’s economic reform from 2018 were pro-growth policies have been instituted by the government and declaring the country open to business has seen a substantial growth of the foreign direct investment in all economic sectors especially in the lucrative mining and hospitality sector. Foreign Direct Investment allows the transfer of technology particularly in the form of new ventures of capital inputs that cannot be achieved through financial investment or trade in goods and services. FDI can also promote competition in the domestic input market. Further, FDI stimulates economic performance in developing countries. Mupfawi

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

and Tambudzai (2015) agrees to the finds of the study and postulate that increased foreign direct investment has direct positive impact towards economic variables such capital, investment and employment in the long run. Alfaro et al. (2004) and Wang (2009) also postulate that there is a positive relationship between FDI and economic growth.

Similarly, GDS in its current form shows an insignificant positive impact on GDP with a coefficient of 0.139209 and a p-value of 0.6786, whereas its one-period lag demonstrates a significant negative effect with a coefficient of -0.931172 and a p-value of 0.0159, significant at the 0.05 level. According to World Bank (2022) Gross Domestic Savings in Zimbabwe was 5.077 percent with an anticipation that its stock is growing on an upward trend. It means that high savings rate leads to less consumption, which could also result in the larger amount of capital investment and finally a higher rate of economic growth. It is recommended that the Zimbabwe needs to design a policy which enhances higher economic growth through increasing total factor productivity and, which ultimately increases the country's domestic saving level. Moreover, to achieve sustainable growth the government needs to embark on policy measures, which increase saving and investment into the country due to its dual effect (Elias & Worku, 2015). Therefore, Gross Domestic Savings has a significant impact to economic development in Zimbabwe. The findings are similar to Carroll and Weil (1994) & King and Levine (1994) who both found a positive relationship between savings and economic growth.

The presence of significant coefficients for lagged variables suggests long-run relationships. Specifically, the negative long-run impact of CPI(-1) on GDP indicates that past illicit financial flows have detrimental long-term effects on economic performance. Similarly, the significant negative coefficients for FDI (-1) and GDS(-1) imply that past FDI and GDS have long-term adverse effects on GDP.Generally, the analysis reveals that past values of CPI, FDI, and GDS significantly influence GDP, predominantly in negative ways, indicating the presence of long-run relationships. This underscores the importance of addressing illicit financial flows, evaluating the absorptive capacity for FDI, and ensuring efficient use of domestic savings to foster economic development. These findings highlight the complexity of economic relationships and the critical role of contextual factors in shaping the long-term impact of various economic variables on economic development.

Short term coefficient estimates

The ECM results provide valuable insights into the short-run dynamics and the speed of adjustment to the long-run equilibrium for GDP in relation to changes in the Corruption Perception Index (CPI), Foreign Direct Investment (FDI), and Gross Domestic Savings (GDS).

In terms of short-run dynamics, the first difference of CPI has a coefficient of 0.931075 with a standard error of 0.382629 and a t-statistic of 2.433366, which is statistically significant at the 5% level (p-value = 0.0315). This indicates that a unit increase in the change of CPI leads to an approximate 0.93 unit increase in GDP, holding other factors constant. This positive and significant relationship suggests that changes in CPI, reflecting changes in perceptions of corruption or illicit financial flows, have a substantial short-term impact on GDP.

The lagged first difference of CPI has a coefficient of -0.733716 with a standard error of 0.365331 and a t-statistic of -2.008358, which is statistically significant at the 10% level (p-value = 0.0677) but not at the 5% level. This implies that a unit increase in the lagged change of CPI leads to an approximate 0.73 unit decrease in GDP, holding other factors constant. This negative effect suggests a possible correction mechanism where the initial positive impact of a change in CPI is followed by a negative adjustment in the subsequent period.

The first difference of FDI has a coefficient of -0.510292 with a standard error of 1.377144 and a t-statistic of -0.370544, which is not statistically significant (p-value = 0.7174). This indicates that changes in FDI do not have a significant short-term impact on GDP in this model. Similarly, the first difference of GDS has a coefficient of 0.139209 with a standard error of 0.214883 and a t-statistic of 0.647836, which is not statistically significant (p-value = 0.5293). This suggests that changes in GDS do not have a significant short-term impact on GDP in this model.

The error correction term, denoted as CointEqtn(-1), has a coefficient of -0.534251 with a standard error of 0.106885 and a t-statistic of -4.998393, which is highly statistically significant at the 1% level (p-value = 0.0003).

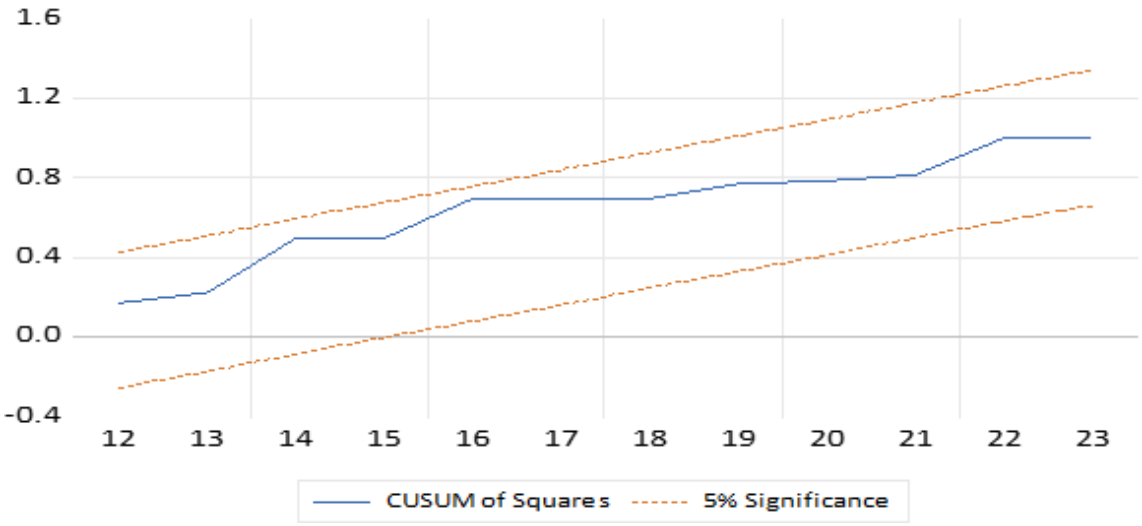
ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

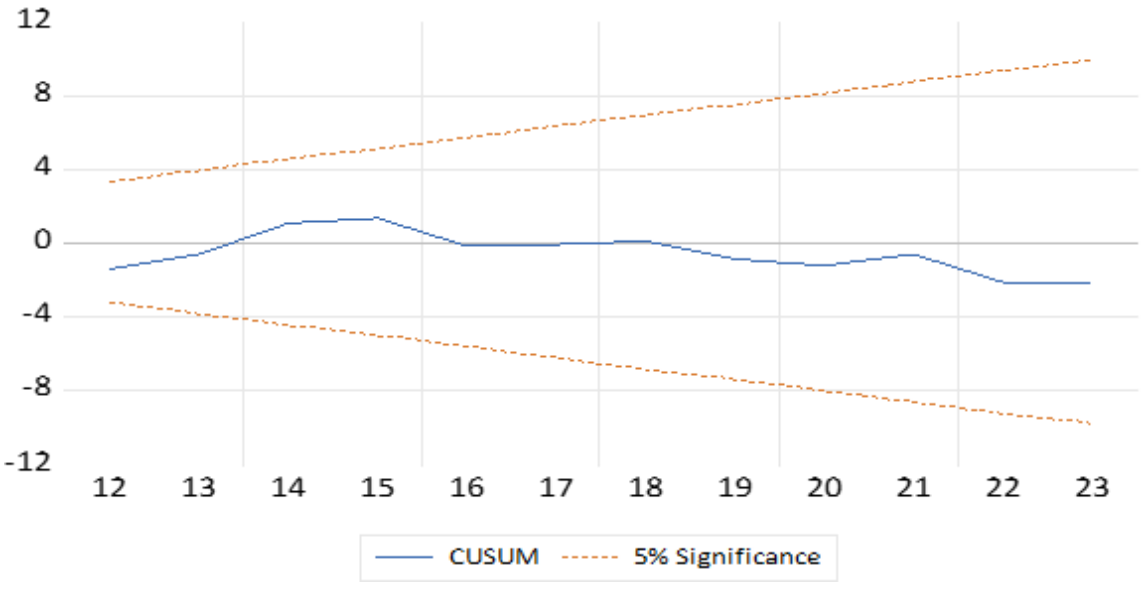
This term indicates the speed at which GDP returns to its long-run equilibrium after a shock. The coefficient of -0.534251 suggests that approximately 53.43% of the deviation from the long-run equilibrium is corrected within one period (typically a year). The negative sign is expected and indicates a return to equilibrium, meaning that any deviation from the long-run GDP level is adjusted by more than half in the subsequent period. This relatively high adjustment speed implies that the economy is relatively quick in correcting short-term disequilibria to align with the long-term equilibrium relationship between GDP and the included variables.

The findings imply that within a year, economic development as measured by GDP reconciles its short-term behavior to its long-term behavior by a factor of roughly -0.534251. The significant positive impact of changes in CPI on GDP in the short run highlights the importance of addressing perceptions of corruption or illicit financial flows for economic growth. The negative adjustment of lagged CPI changes suggests a correction mechanism in the economy, indicating that while initial changes might boost GDP, subsequent adjustments could mitigate this effect. The insignificance of FDI and GDS changes in the short run suggests that these variables may not have immediate impacts on GDP but could still be important in the long-run context or through other indirect channels not captured in the short-term dynamics of this model.

Stability of the model

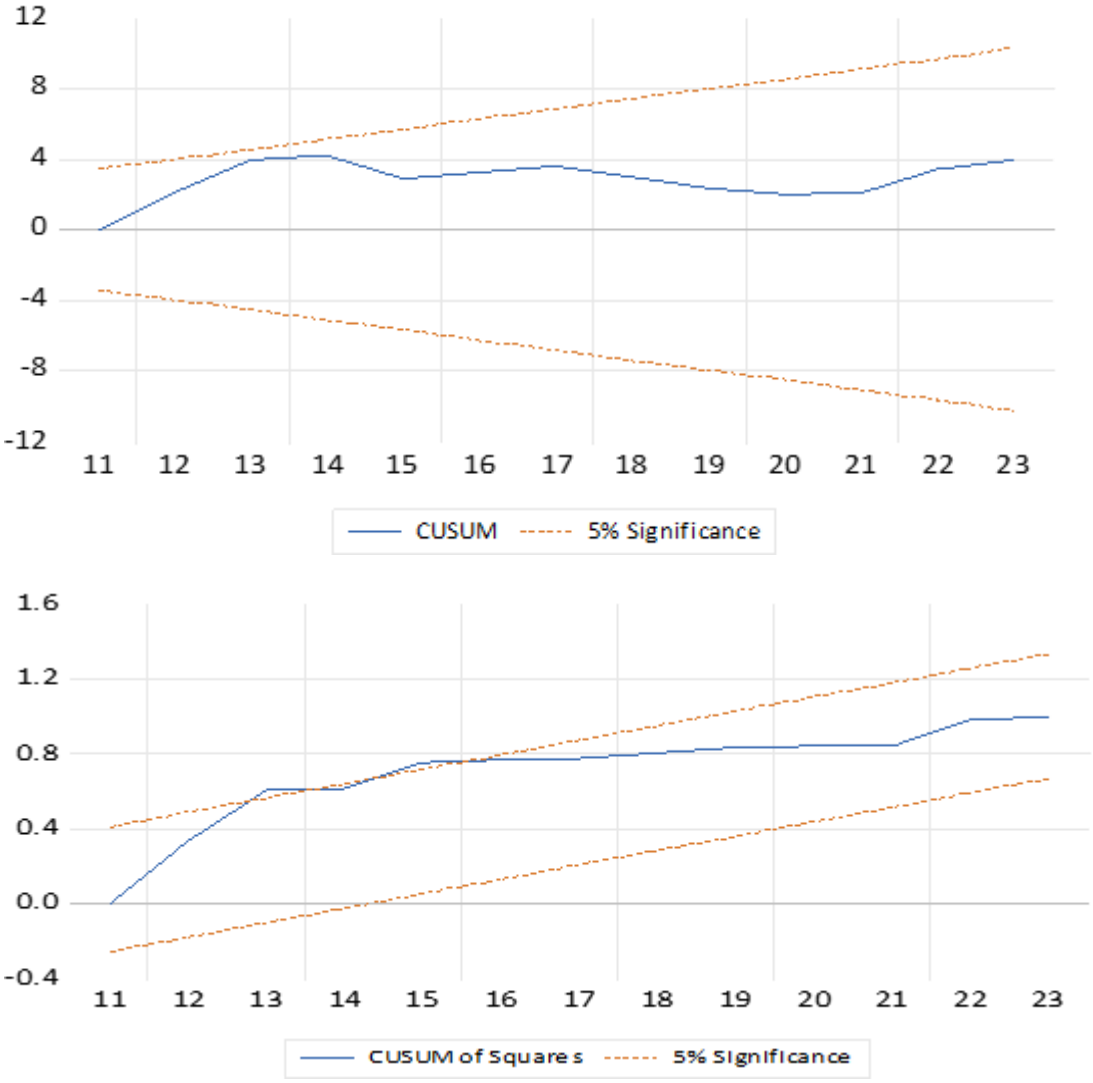
The CUSUM test and the CUSUMSQ test were run, as indicated in the Figures below, to guarantee the robustness of the model results.





Test Results for Explanatory Variable GDP a proxy for economic development using CUSUM and CUSUM of squares from Eviews 12

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024



Test Results for Explanatory Variable CPI a proxy for economic development using CUSUM and CUSUM of squares from Eviews 12

The parameters and the model are stable if the CUSUM and CUSUMSQ graphs stay within the 5% critical range. The CUSUM and CUSUMSQ values, as shown in the preceding figures, are within the crucial levels at the 5% significance level except for few years in CUSUM of squares graph where CPI is an explanatory variable. Consequently, these figures attest to the stability of the model and the lack of regular changes in the coefficients during the research period.

CONCLUSION AND RECOMMENDATIONS

The objective of the study was to investigate the empirical cointegration, long-term and short-term dynamics between Illicit Financial Flows & Economic Development in Zimbabwe. For this purpose, annual time series data from 2000 to 2023 and used the ARDL method for empirical analysis. In the long run foreign direct investment and gross domestic savings are a conduit for necessary economic development. Higher levels of foreign direct investment has significant effects towards economic development as it directs injects the needed capital for production and creating higher levels of employment. This then leads to high gross domestic savings thus increasing the share of capital within the country. Meanwhile, corruption is a deterrent in the long run toward economic development. Higher levels of corruption reduce foreign direct investment hence lowering gross domestic savings which eventually leads to low capital channeled to production thus lowering competitiveness and economic growth. Further high levels of corruption increase country risk and perpetuates the flow of illegal illicit financial flows.

In light of the above the study makes the following recommendations:

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XI Issue IX September 2024

1. Support and scale up anti-money-laundering initiatives in Zimbabwe.

In addition to being party to global level initiatives and subject to third-party legislation on corruption and money-laundering, Zimbabwe government should collectively intensify initiatives to fight these problems. In this regard, good practices, such as those of the Intergovernmental Action Group against Money-Laundering in West Africa, should be adopted and further developed to fit into the domestic economy.

2. Design a specific policy and regulatory framework on illicit financial flows

The prevalence of IFFs in Zimbabwe with its diversity in their origins, mechanisms and impact are such that the government of Zimbabwe should have its own national policy framework for combating these flows.

3. Protect and support civil society organizations, whistle-blowers and investigative journalists

Civil society organizations, whistle-blowers and investigative journalists have played a critical role in revealing the magnitude of IFFs and the mechanisms that support them in Africa and beyond. There is need for government of Zimbabwe to adopt a multitask approach to address these flows.

4. Invest in research to account for links between illicit financial flows, environmental sustainability and climate change

The review of sources of IFFs in Zimbabwe highlights the magnitude of environmentally harmful activities, such as illegal mining and which have led to negative externalities from the extractive industry not only have ripple effects on other sectors, such as agriculture, but also affect critical water resources at the community level. Its hightime government of Zimbabwe should engage into research on integrating the value of environmental damage caused by dominant sources of illicit flows into ongoing initiatives on the measurement of IFFs. Such efforts could allow government of Zimbabwe to strengthen the case for bridging negotiation agendas on curbing IFFs and making claims on climate finance.

5. Rekindle trust in multilateralism through tangible actions in the fight against illicit financial flows

Multilateralism implies use of international cooperation to attempt to find solutions to transnational problems.

6. Engage on illicit financial flows and ethics

In many ways, addressing IFFs is a matter of ethics. These ethical concerns are recognized by all stakeholders, including MNEs, involved in the fight against IFFs. In the African context, the emphasis on ethics is apparent in the African Peer Review Mechanism that government of Zimbabwe can learn from.

REFERENCES

1. AFRODAD. (2015). Illicit Financial Flows: Towards a More Integrated Approach for Curbing Illicit Flows from Zimbabwe".
2. Ahmed, Y.A. (2020). Economic analysis of the phenomenon of money laundering and its impact on economic growth in Iraq for period 1991 -2017 (Reality and Future). 1-25.
3. Ajayi, S. I. (1994). The theory of systemic dependence: A non-Marxist critique. *Journal of Economic Issues, 28*(4), 1139-1158.
4. Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2004). FDI and Economic Growth: The Role of Local Financial Markets. *Journal of International Economics, 64*(1), 89-112.
5. Badwan,N. and Atta, M. (2019). Empirical Investigation of Capital Flight and Illicit Financial Flows, Economic Growth in Palestine. *Journal of Economics, Management and Trade, 25*(5), 1-15.
6. Baker, R. W. (2005). Capitalism's Achilles heel: Dirty money and how to renew the free-market system.
7. Barasa,T. (2018). *Illicit Financial Flows in Kenya: Mapping of the Literature and Synthesis of the Evidence.* Nairobi, Kenya: Partnership for African Social and Governance Research .
8. Borensztein, E., De Gregorio, J., & Lee, J.W. (1998). How Does Foreign Direct Investment Affect Economic Growth? *Journal of International Economics, 45*(1), 115-135.

9. Carkovic, M., & Levine, R. . (2005). Does Foreign Direct Investment Accelerate Economic Growth? In T. H. Moran, E. M. Graham, & M. Blomström (Eds.), Does Foreign Direct Investment Promote Development? *Institute for International Economics*.
10. Carroll, C. D., & Weil, D. N. (1994). Saving and Growth: A Reinterpretation. ,. *Carnegie-Rochester Conference Series on Public Policy, 40*, 133-192.
11. Chirowamhangu E, M. (2023). The Effect of Illicit Financial Flows on Zimbabwe's Economic Growth and Development.
12. Chitambara, P., et al. (2020). Understanding Illicit Financial Flows in Zimbabwe: Magnitude, Drivers, and Policy Options. *Zimbabwe Economic Policy Analysis and Research Unit (ZEPARU) Working Paper*(45).
13. Cobham, A. & Jansky, P. (2020). *Estimating illicit financial flows: A critical guide to the data* (First ed.). Oxford: Oxford University Press.
14. Collin,M., Cook,S. and Soramäki, K. (2016). *The Impact of Anti-Money Laundering Regulation on Payment Flows: Evidences from SWIFT Data* . Washington, DC: The Center for Global Development.
15. Cooray, A., & Schneider, F. (2013). How Does Corruption Affect Public Debt? An Empirical Analysis. *World Development, 38*(3), 371-386.
16. Economic development Report in Africa. (2020). *Quantifying the Impact of Illicit Financial Flows on Sustainable development.*
17. Forstater,M. (2018). *Illicit Financial Flows, Trade Misinvoicing, and Multinational Tax Avoidance: The Same or Different?* Washington: Center for Global Development.
18. Frank, A. G. . (1966). The development of underdevelopment. *Monthly Review, 18*(4), 17-31.
19. Global Financial Integrity . (2019). *Illicit Financial Flows to and from 148 Developing Countries: 2006-2015.* Global Financial Integrity .
20. Jullum,M.,Løland,A., Huseby,R.B., Ånonsen,G. and Lorentzen,J. (2020). Detecting money laundering transactions with machine learning. *Journal of Money Laundering Control, 23*(1), 173-186.
21. Kar, D., & Cartwright-Smith, D. (2008). Illicit financial flows from Africa: Hidden resource for development. Washington, DC:. *Global Financial Integrity*.
22. King, R. G., & Levine, R. (1994). Capital Fundamentalism, Economic Development, and Economic Growth. *Carnegie-Rochester Conference Series on Public Policy, 40*, 259-292.
23. Kurebwa J. (2021). Implications of Illicit Financial Flows on Zimbabwe's Development. *International Journal of World Policy and Development Studies, 7*(2), 27-34. doi:https://doi.org/10.32861/ijwpds.72.27.34
24. Kute,D.V., Pradhan,B.,Shuklan,N. and Alamri,A. (2021). Deep Learning and Explainable Artificial Intelligence Techniques Applied for Detecting Money Laundering–A Critical Review. *21*, 82300-82317.
25. Mankiw, N. G., Romer, D., & Weil, D. N. . (1992). A contribution to the empirics of economic growth. *The Quarterly Journal of Economics, 107*(2), 407-437.
26. Maria Ene,C. (2014). .Measuring Money Laundering Using "The Walker Gravity Model". *Annales Universitatis Apulensis Series Oeconomica, 16*(2), 151-158.
27. Mauro, P. (1995). Corruption and Growth. *The Quarterly Journal of Economics, 110*(3), 681-712.
28. Mavhiki, S., & Hlongwana, J. (2021). The Impact of Illicit Financial Flows on Economic Development in Zimbabwe. . *Journal of African Economie, 28*(4), 589-607.
29. Méon, P.-G., & Sekkat, K. (2005). Does Corruption Grease or Sand the Wheels of Growth? Public Choice. *122*(1-2), 69-97.
30. Mutambara, P. (2019). Combatting Illicit Financial Flows in Zimbabwe: Legal and Policy Considerations. *Institute of Economic Affairs (IEA) Policy Brief*(15).
31. Ndikumana, L., & Boyce, J. K. (2011). Capital flight from sub-Saharan African countries: Updated estimates, 1970-2010. . *Political Economy Research Institute (PERI) Working Paper*(261).
32. Nemer Badwan, N. and Atta,M. (2019). Empirical Investigation of Capital Flight and Illicit Financial Flows, Economic Growth in Palestine. *Journal of Economics, Management and Trade, 25*(5), 1-15.
33. Nerea, A. (2018). The Impact of Illicit Financial Flow on Economic Growth of Ethiopia a Time Series Empirical Analysis, 2000-2015 . 1-25.
34. North, D. C. (1990). Institutions, institutional change and economic performance. Cambridge University Press. (1990).
35. OECD. (2014). *Illicit Financial Flows from Developing Countries: OCED Responses.*

36. Ogbonnaya, A.O. and Ogechuckwu,O.S. (2017). Impact of Illicit Financial Flow on Economic Growth and Development: Evidence from Nigeria. *International Journal of Innovation and Economic Development, 3*(4), 19-33.
37. Reserve Bank of Zimbabwe(RBZ). (2022). *Monetary Policy Statement.* Harare: RBZ.
38. Reuter,P. (2017). Illicit Financial Flows and Governance: The Importance of Disaggregation. *Background paper for World Development Report 2017*, 1-33.
39. Schmidt-Hebbel, K., & Servén, L. (1999). Saving Across the World: Puzzles and Policies. *World Bank Discussion Paper.*
40. Sergij S. Vitvitskiy, Oleksandr Kurakin, I.. Pokataev P.S., Skriabin,O.M. and Sanakoiev,D.B. (2021). Formation of a new paradigm of anti-money laundering: The experience of Ukraine., 19(1),. *Problems and Perspectives in Management, 19*(1), 354-363.
41. Thiao,A. (2020). The Effect of Illicit Financial Flows on Government Revenue in the Western African Economic and Monetary Unioun. *African Economic Research Consortium*, 1-29.
42. Tiwari, M., Gepp,A. and Kuma,K. (2020). A review of money laundering literature: the state of research in key areas. *Pacific Accounting Review, 32*(2), 271-303.
43. UNCTAD. (2020). *Tackling Illicit Financial Flows for Sustainable Development in Africa. Economic Development in Africa Report.*
44. United Nations Economic Commission for Africa (UNECA). (2018). *Illicit Financial Flows from Africa: Scale and Development Challenges.* . Addis Ababa: UNECA.
45. Walker,J. and Unger, B. (2009). Measuring Global Money Laundering: "The Walker Gravity Model". *Review of Law and Economics, 5*(2), 822-853.
46. Wang, M. (2009). Manufacturing FDI and Economic Growth: Evidence from Asian Economies. *Applied Economics, 41*(8), 991-1002.