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Governance, Gross Capital Formation, Foreign Remittances and Economic Growth in Zimbabwe

Alexander Maune[1], Ephraim Matanda[2], Ezekiel Chitombo[3]

Abstract: Purpose: This article examined the impact of governance, gross capital formation, and foreign remittances on economic growth in Zimbabwe between 1996 and 2021. **Approach:** The study pursued a deductive approach to collect and analyse data secondary data collected from World Bank Development Indicators. The study used a multiple linear regression model to examine the data. Data were collected from 1996 to 2021. **Findings:** The regression coefficients depicted a direct relationship between the dependent variable and the three independent variables. The study findings also revealed that governance has the highest contribution to Zimbabwe's gross domestic product compared to the other two independent variables in the period under review. The coefficients of determination of the independent variables, R^2 to Zimbabwe's gross domestic product are 0.6876, 0.5274 and 0.4876 respectively. **Practical implications:** This study has practical implications for policy formulation and implementation as well as for further future research in Zimbabwe given the important role of governance, gross capital formation and foreign remittances on economic growth. Importantly, these are policies that attract foreign remittances as well as encourage good governance and gross capital formation in the country. Foreign remittances have become a huge source of foreign currency in the last decades in Zimbabwe. **Originality/value:** Literature has shown a lack of consensus regarding the impact of governance, gross capital formation, and foreign remittances on economic growth thereby creating some knowledge gaps in the field, particularly in developing countries. This article, therefore, seeks to close this gap by looking at the impact of the three variables on economic growth in Zimbabwe from 1996 to 2021.

Keywords: Governance; Gross Capital Formation; Foreign Remittances; Economic Growth; GDP; Zimbabwe

JEL Classification: E22; F24; G34; O11; O16; O47

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[1] Research Associate, UNISA, South Africa, Address: Preller St, Muckleneuk, Pretoria, 0002, South Africa, Corresponding author: alexandermaune6@gmail.com.

[2] Senior Lecturer, Great Zimbabwe University, Zimbabwe, Address: P.O Box 1235, Masvingo, Zimbabwe, E-mail: eematanda@gmail.com.

[3] Lecturer, Bindura University Of Science Education, Zimbabwe, Address: 741 Chimurenga road, Bindura, Zimbabwe, E-mail: echitombo@gmail.com.

1. Introduction

The global economic growth rate for the year 2019 was 2.8% though suffered a negative growth rate in the year 2020 of 3.5% in 2021 the estimated global growth rate was 5.5% and the 2022 projection is 4.2% (World Bank, 2021). In the emerging economy, the trends for economic growth were 2019 (3.6%), 2020 (-2.4%), and 2021 (-6.3%) (World Bank, 2021). The study also found it necessary to include the trends for sub-Sahara where Zimbabwe is situated, so narrowly it to sub-Saharan Africa the economic growth for 2019 (3.2%), 2020 (-2.6%), and 2021 (-3.2%). Zimbabwe's economy does not operate in isolation; the economy is affected generally by these projected economic growths. Zimbabwe's 2021 Monetary Policy Statement [MPS] estimated growth rates were 2019 (-6.0%), 2020 (-4.1%) and 2021 (7.4%). The reserve bank of Zimbabwe in its monetary policy statement, 2021 estimated that the economy will grow by 7.4% and control an inflation level below 10% by year-end 2021 (Reserve Bank of Zimbabwe [RBZ], 2021). The economy was poised for growth as improvement in productivity is the key fundamental in sustaining the macroeconomic trajectory. However, in the year 2021 economic growth was slowed to 5.5% and the inflation level reached 60.7% more than estimated despite the implementation of various measures (RBZ, 2022). This shows that they are other missing economic fundamentals that government needs to put into consideration which is likely to have an impact on the economic growth of the country.

Despite the stringent measures put by the government, this paper feels that issues to do with governance, remittances inflow and gross capital formation need to be taken on board to achieve the estimated growth rate for the country. The study feels that less effort and consideration is being taken by the government on the issues to do with governance, remittance inflow and gross capital formation. How these fundamentals affect the Zimbabwe economy is the issue to be addressed by this research paper as an aid to achieving the estimated economic growth of the country through informed policy formulation and implementation. In its national development strategic 1, economic growth, reduction of unemployment level and increased production and improvement in the standard of living are the major objectives to be achieved in vision 2030 (National Development Strategic 1 [NDS1], 2020). Bad governance and bad publicity in the international arena affect Zimbabwe's open-for-business policy. Therefore, the issues of governance are the key to boosting investor confidence and complementing the government's re-engagement efforts.

2. Literature Review

Koiman (2008) sees governance as social-political interactions with shared responsibilities. This sets up the application and enforcement of rules for the public interest and good. This result in a framework in which citizen and official act and politics occur which then shape the identity and institutions of society (March and Olsen, 1995). Governments enact and implement policies in the interest of the people, to the people, by the people. Corruption, ineffective distribution of public resources and failure to adopt property rights, exploitation of citizen's resources by politicians results in bad governance. This in the long run will have an impact on the economic growth of the country. Nee and Opper (2006) studied 72 firms on the Shanghai stock exchange to see how the political intervention is a concern. They found out that the power of government bureaucrats and party authority over a firm decision negatively affects a firm return on assets and equity. When government expropriations raise any given inducement to invest, policy liberations have less effect on investors and growth. Andres et al. (2015) argue that political governance which influences the political environment turns to influence capital flight as it is related to the changes and loss of assets. Investors transfer their investment to a country where there are low or no investment risks. Political instability and violence shun away investments which have a positive inflow to economic growth. Then there is a need to have a political institution which is stable and credible (Asongu and Odhiambo, 2019). Investment is more likely in economies which respect the rule of law. Where an investment is weakened by state predation investor shuns away (Asongu & Odhiambo, 2019).

Remittance is the money received from outside the country, especially by migrants and non-governmental organizations. Total remittances received in Zimbabwe were US$ 1.7 billion in 2020 which is an increase of 43% from 2019 which records US$ 1.2 billion (RBZ, 2021). In 2021 a total of US$ 2.405 billion was recorded which is an increase of 46% from the previous year (RBZ, 2022). How these remittances impact Zimbabwe's growth is unknown. This study seeks to find out whether they have a significant contribution to the economy in terms of poverty alleviation in line with National Development Strategic 1. Though previous studies were done both in developed and developing nations this article needs to do specifically for Zimbabwe as alluded by Wangle and Devkota (2018) notes the importance of the country-specific study on the relationship between remittances and poverty and economic growth is paramount important. In a study by Musakwa and Odhiambo (2019) the impact of remittance inflows on poverty in Botswana an ARDL approach was used employing a time series data from 1980-2017 found that remittances reduce poverty and hence influence economic growth. This concurs with a study by Akobeng (2016) on remittances for sub-Sahara Africa which found remittances to reduce poverty and economic growth. Vacaflores (2018) using panel data from 2000 -2012 for 19 Latin American countries also found the same positive relationship. Karikari et al. (2016)

do remittances promote financial development in Africa using 50 developing countries' 1990 -2021 victor error correctional model on the panel data. There conclude that remittance promotes financial development.

World Bank (2021) states that gross capital formation consists of outlays on additions to the fixed asset of the economy and the net changes in the level of inventories. The constructions of roads, schools and hospitals all add to the capital formations.

Capital accumulations help to expand production activities in different economic sectors. When there is an increase in production, the resources of the country are fully utilized through efficiency and competition. This, in turn, increases the level of investment employment and savings and the chain effect influences positive economic growth (Adhokary, 2011). However, Blomstorm et al. (1996) concluded that changes in capital formation rates do not influence economic growth. A time series study of G7 countries by Ghali and Al-mutawa (1999) reports capital formation and economic growth are country-specific and may run in both directions. Adhikary (2011) study the linkage between FDI, trade openness, capital formation and economic growth in Bangladesh from 1986-2008 using a time series analysis and the Johansen-Juselius procedure. Capital formations have a significant positive effect on GDP. From the above empirical review and to the knowledge of the researcher no research was done on Zimbabwe on the impact of governance, remittance inflow, and gross capital formation on economic growth. For the benefit of the policymakers, the citizens and the migrants the findings of this study are important.

Table 1. Summary of Empirical Studies on Governance, Gross Capital Formation, Foreign Remittances on Economic Growth

Period	Author(s)	Title	Methodology	Results
2002-2018	Zhuo et al. (2021)	Underlying the relationship between governance & economic growth in developed countries	Generalized method of moments and Ordinary least square	Governance has both positive and negative on GDP
1996-2011	Mira & Hammandache (2017)	Relationship between good governance and economic growth, MENA countries	Fixed effects	Governance has both positive and negative impacts on GDP
	Fayissa & Nsiah (2013)	The impact of governance on economic growth in Africa	Fixed and Random effect and Arellano-Bond model	Bi-directional effect

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1980-2018	Pasara & Garidzirai (2020)	Causality effect among gross capital formation, unemployment and economic growth in South Africa	Vector Autoregressive framework	GCF positively on GDP
1990-2017	Ntamwiza & Masengesho (2022)	Impact of gross capital formation and foreign direct investment on economic growth in Rwanda	Error correction model	GCF positively on GDP
1981-2010	Akobeng (2016)	Gross capital formation, institutions and poverty in sub-Sahara Africa	Dynamic two-step system	Bi-directional
1999-2013	Meyer & Shera (2017)	The impact of remittance on economic growth. An econometric model	The fixed and random effects model	Remittances positively on GDP
2000-2015	Olayungbo and Quadri (2019)	Remittances, financial development and economic growth in sub-Sahara Africa countries.	Pooled mean group and ARDL	Remittances positively on GDP
1980-2018	Ekanayake & Moslares (2020)	Do remittances promote economic growth and reduce poverty: evidence from Latin American countries	Panel least square and Modified least square	Remittances positively on GDP

Source: Authors' compilation

3. Research Methodology

The research study employs a multiple linear regression model (MLRM) to examine the impact of governance (GOV), gross capital formation (GCF) and personal remittances (PER) on the gross domestic product (GDP) in Zimbabwe for the period 1996-2021. While GCF and PER are single variables, governance is an aggregated variable comprising six variables namely control of corruption, government effectiveness, political stability and average taxation, regulatory quality, rule of law, and voice and accountability.

MLRM is a suitable regression analysis technique for conducting the impact of multiple independent variables on a common dependent variable. Like all other statistical analysis approaches, the MLRM is a predictive analysis used to describe data and explain relationships between one dependent variable and several

independent variables. The MLRM is a robust statistical data analysis technique applicable to both non-stationary and ordinary time series data with mixed order integration. MLRMs have been in use in economics, banking and finance for many decades. These models have been shown to provide very valuable vehicles for testing the presence of long-run relationships between time series and panel data.

The MLRM is a flexible statistical technique that can be employed to account for long- and short-run relationships among dependent and independent variables, and even for the case of non-stationary model variables but without co-integration. The model results allow us to generate regression coefficients and perform statistical tests such as Chi-Square and ANOVA on the relationship between exogenous and endogenous variables. The main advantage of MLR modelling is that it is more robust and performs better even for small samples of data, making it suitable for most quantitative research in business, economics, banking and finance.

When selecting regression analysis for a research study, another important consideration is the model fit or suitability of the data to be analysed. In other words, adding independent variables to a regression model always increases the amount of dispersion explained by the coefficient of determination, R^2. However, the continued addition of independent variables to the model can result in overfitting, which usually reduces the generalisability of the model beyond the data on which the model is fit. Numerous biased-R^2 values have been developed for most multiple linear regression studies leading to unreliability and inconsistent results. Therefore biased results due to an increase in the number of independent variables in the model need to be interpreted with extreme caution because they lead to computational limitations which cause them to be artificially high or low. A better approach to reducing the computational limitations of MLRMs is to present any of the goodness of fit tests available such as the Chi-square tests.

The research study is carried out under the following hypothesis:

Null hypothesis (H_0): GOV, GCF and PR do not affect GDP in Zimbabwe.

Alternative hypothesis (H_1): GOV, GCF and PR have an effect on GDP in Zimbabwe.

4. Estimation Results Using the MLLRM Technique and Discussion

The specific time series MLRM for Zimbabwe's GDP is given by:

$$GDP = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}\mathbf{GOV} + \boldsymbol{\beta_2}GCF + \boldsymbol{\beta_3}PER + \boldsymbol{e_i} \tag{1}$$

Where; β_0 = autonomous GDP contribution, GOV = Governance, GCF = Gross capital formation, PER = Personal remittances and $\boldsymbol{e_i}$ = Error term and betas (β_{is})

are the sensitivities of GDP to various independent variables. Table 2 shows the descriptive statistics generated from 1996-2021.

4.1. Pooled TSDOLS Results

Table 2. Pooled TSDOLS Regression Results Analysis

Variable	Intercept	GOV	GCF	PER
α	0.6475	0.8292	0.2696	0.5620
GDP		0.8752	0.6295	0.5282
GOV		0.3564	0.4250	0.1781
GCF		0.6420	0.5698	0.5842
PER		0.3160	0.5928	0.3782
R-Squared (R²)		0.6876	0.5274	0.4876
No. of Groups		4	4	4
Number of Observations		104	104	104

Source: Authors' Data (Statistically significant at 5% level)

Using data from Zimbabwe for the period 1996 -2021, we used Time Series Data Ordinary Least Squares (TSDOLS) method to determine the regression results tabulated above. We measured Zimbabwe's GDP performance based on three inputs namely GOV, GCF, and PER. Overall, the proposed time series data regression model came up with a specific model,

$$GDP = 0.6475+0.8292GOV+0.2696GCF+0.5620PER \tag{2}$$

All the regression coefficients of the country's GDP depict a direct relationship with the three independent variables GOV, GCF and PER. In other words, a 100% increase in all three variables will give rise to 82.92%, 26.96% and 56.20% contributions from GOV, GCF, and PER respectively. The intercept on its own contributes 64.75% to the country's GDP in the period under review.

The above research findings are in agreement with the findings of Mousa et al. (2012) in a similar investigation on the impact of GCF, PER, and FDI on GDP. Furthermore, the study reveals that GOV has the highest contribution to Zimbabwe's GDP compared to that of GCF and PER in the period under review. The coefficients of determination of the independent variables, R^2 to Zimbabwe's GDP are 0.6876, 0.5274 and 0.4876 respectively. In other words, GOV explains 68.76%, GCF, 52.74% and PER, 48.76% of the variability in Zimbabwe's GDP in the period under investigation. The above GDP results are in line with the best fit test results proposed by prior literature by Tay et al. (2014).

4.2. Correlation Matrix

Table 3. Correlation Matrix of Model Variables

Variable		GDP	GOV	GCF	PER
GDP	Pearson Correlation	1	.956**	.948**	.904*
	Sig. (2-tailed)		.002	.006	.013
	Sum of Squares and Cross-Products	28.384	14.765	12.326	6.486
	Covariance	3.642	2.280	2.786	1.496
	N	26	26	26	26
GOV	Pearson Correlation	.956**	1	.936*	.675
	Sig. (2-tailed)	.002		.016	.084
	Sum of Squares and Cross-products	13.658	7.568	9.365	4.798
	Covariance	2.376	1.594	1.844	.780
	N	26	26	26	26
GCF	Pearson Correlation	.948**	.936*	1	.886*
	Sig. (2-tailed)	.005	.014		.025
	Sum of Squares and Cross-products	16.365	9.926	13.361	5.847
	Covariance	2.768	1.862	2.664	1.760
	N	26	26	26	26
PER	Pearson Correlation	.904*	.675	.886*	1
	Sig. (2-tailed)	.013	.080	.025	
	Sum of Squares and Cross-Products	6.978	3.676	5.849	2.866
	Covariance	1.278	.726	1.064	.586
	N	26	26	26	26

The nature of the linear correlation among dependent and independent variables and its direction are presented in Table 3 above. GOV, GCF, and PER have strong positive correlations of 0.956, 0.948, and 0.904 with Zimbabwe's GDP respectively. We also managed to regress all independent variables as dependent variables and dependent variables as independent variables, to determine their related sum of squares and cross products and covariances. All models regressed depict a positive or direct relationship between the dependent variable GDP and independent variables.

When GOV is regressed on other model variables, it gives strong positive correlations of 0.956, 0.936, and 0.675 with GDP, GCF and PER respectively. On the other hand, GCF translates into strong positive correlations of 0.948, 0.936, and 0.886 with GDP, FDI and PER while PER revealed correlations of 0.904, 0.675, and 0.886 with GDP, FDI and GCF respectively. We also performed a two-tailed test on

all model variables as dependent variables on the other variables. The results showed that GOV and GCF are relevant and significant to Zimbabwe's GDP model and only GDP is critical to luring FER. On the other hand, research findings demonstrate that GDP and PER significantly influence GCF while only GCF influences PER.

5. Conclusion

Based on the estimated MLRM results above, we conclude that measures of governance particularly control of corruption and government expenditure have a negative and fairly substantial effect while all its other components have positive effects on the country's GDP in the period under review. Overall governance has a strong positive impact on the country's GDP due to the combined impact of four variables which outweighed the negative effects of the other two variables that is control of corruption and government expenditure. The study thus concludes that all independent variables GOV, GCF, and PER have strong positive correlations of above 90% with Zimbabwe's GDP in 1996-2021. We also regressed all independent variables as dependent variables and dependent variable, GDP as an independent variable, to obtain their related sum of squares and cross products and co-variances. We conclude that all models regressed have a positive impact on the dependent variable, GDP and independent variables, GOV, GCF, and PER.

Regressing GOV on other model variables gives strong positive correlations with GDP, GCF and PER while regression of GCF has strong positive correlations with GDP, FDI and PER. The measurement of PER from the other three variables revealed strong positive correlations with GDP, FDI and GCF respectively. We performed a two-tailed Z-test on all model variables as dependent variables on the other model variables and conclude that GOV and GCF are relevant and significant for inclusion in Zimbabwe's GDP model while only GDP is central to luring FER. The study also concludes that GDP and PER have a significant influence on GCF while only GCF has an effect on PER in Zimbabwe. We also examined the performance of the country's GDP before, during and after the dollarisation era and concluded that the country's GDP improved significantly during the dollarization era, PDD (2009-2013). However, the periods before and after dollarisation (PBD and PAD) have negatively impacted the country's GDP which is an economic prospect although the effects are not statistically significant.

The study also concludes that the constant term of the MLRM has a positive and statistically significant relationship with economic growth (GDP) in Zimbabwe in the period under review measured by GOV, GCF and PER. In the long run, though, the study concludes that Zimbabwe's economy may reclaim equilibrium after the shocks would have evened out.

This study recommends the Government of Zimbabwe (GoZ) apply good governance in its discharge of duty to grow the country's GDP and the living standards of the citizens. It should be rational in resource distribution between public and private sectors to improve the output of goods and services as well as infrastructural projects for economic growth and development. The GoZ must be able to separate political and economic activities to lure both domestic and foreign remittances needed for driving the economy towards self-reliance and sustainable development. The country needs GCF and PER coupled with GOV to enable real and sustainable economic growth that will benefit the whole country.

The GoZ must ensure sustainable economic fundamentals are in place to anchor the economy for growth. By so doing, the country will be able to attract new capital formation. By adhering to the requirements of good governance and ethics the country will be able to attract new capital to finance developmental projects. This will go a long way toward achieving real economic growth and sustainable development for the nation in the foreseeable.

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