

Anti-corruption Instrument and Economic Growth: Evidence from SADC Member States

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Abstract This paper investigates the impact of an anti-corruption instrument on economic growth among Southern African Development Community (SADC) member states. We employed the years of ratification as the measure of the policy, fixed effect and difference-in-difference method to find the causal effect of anti-corruption policy on economic growth. The results show that for anti-corruption policy to have an effect on an economy the various institutions should be made proactive in the SADC member States.

Keywords: *anti-corruption, economic growth, SADC member states*

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1. Introduction

The negative impact of corruption on the moral fibre of any society cannot be underrated. This sentiment is aptly captured by Kofi Annan when he stated "Corruption is an insidious plague that has a wide range of corrosive effect on societies. It undermines democracy, and the rule of law that leads to violations of human rights, distorts markets, erodes the quality of life, and allows organized crime, terrorism and other threats to human security to flourish" [1]. This view by the UN Chief encapsulates a widely held view that corruption in whatever form has a devastating effect on any given society. However, with regards to the impact of corruption on economic growth, there are two contradicting views as put forward by [2]. The authors posit two basic arguments. The first is based on the "grease the wheels" hypothesis, which states that corruption removes irrelevant delays, promotes efficient and speedy economic activities. The other viewpoint canvassed in their work, was based on the "sand the wheel" hypothesis, which states that corruption only reduces economic growth and does not improve economic growth as perceived.

The record of African countries and its leaders with regards to corrupt acts is quite revealing. Reference [3] shows some clear incidences of corruption; Mobutu Sese Seko, robbed Zaire's treasury of \$5billion that was equivalent to the country's total external debt. IMF reported another misappropriation that \$1billion disappeared from Angolans state coffers in 2001 and that amount was equal to the total humanitarian aid received by Angola in 2001 [4]. Ref [5] also stated how Zambia

has been crippled with inefficiencies and corruption, which have led to people using other means to get things done. Even Botswana which is the least corrupt is not an exception when it comes to corruption. Ref [6] stated how the country's 841 plot of lands were illegally acquired when a commission was set up to investigate certain malpractices by the local government. He also highlighted how corruption led to the awarding of a contract to a company that contributed to the misappropriation of an amount of P1million. The incidences of corruption cited above show that the issue of corruption leads to the diversion of resources to rent seeking activities that have a negative effect on economic growth.

Figure 1 shows Corruption Perception Index (CorrPI) from 2001-2015 for 14 Southern African countries (see appendix). It can be deduced from the graph that 9 out of the 14 countries surveyed have an average CorrPI ratings of less than 40%. In 2001 for instance, the most corrupt and the least corrupt country from the figure was Angola and Botswana respectively. Also, in 2015, Angola became more corrupt with a CorrPI of 15% and Botswana still being the least on the CorrPI with 63%. These startling statistics of how corrupt the countries were, falls in sharp contrast to the fact that they signed a protocol against corruption to help combat the negative impact of the corruption canker.

A total of Nine (9) Southern African countries established the Southern African Development Co-ordination Conference (SADCC) in 1980 with the aim of reducing the economic dependence on apartheid South Africa. In 1992, the Heads of States in the member states agreed to transform the SADCC to Southern Africa Development community (SADC) with the headquarters in Gaborone, Botswana. Members of the SADC includes Angola,

Botswana, the Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, United Republic of Tanzania, Zambia and Zimbabwe (shown in [Figure 2](#)). Due to the geographical proximity of the states there have been several policies and projects that have been implemented to improve the wellbeing of its members. Among them includes the establishment of special economic zones, national mineral policies, SADC protocol on forestry, telecommunications policies and Southern African Development Community Standby Force (SADCSF) and SADC Protocol Against Corruption (SAPC). The establishment of the SAPC has political and economic motive in the SADC region. The protocol provided a united front against the fight for corruption in all the member states.

To find out countries that are lagging in the fight against corruption, ref [\[7\]](#) reviewed the various anti-corruption instruments pursued by SADC member states. They include the signatories of SADC Protocol against Corruption (SAPC), AU Convention on Preventing and Combating Corruption (AUCPCC) and UN Convention Against Corruption (UNCAC). They only reported the countries that signed and rectified the policy; this research still thinks the report did not address the impact of the ratification of the anti-corruption instrument on economic growth or other variables that are important for development. Thus, there is a knowledge gap that needs to be filled. This hence forms the focus of this research.

The SAPC was used due to the greater number of countries (see [Table 8](#)) that signed and ratified the policy as compared to AUCPCC and UNCAC (tables available on request). SAPC was also chosen because it is the only policy where all the countries signed the policy on the same date (see [Table 8](#)). The SAPC was used in order to make policy inference to capture the other anti-corruption instruments. The difference-in-difference identification strategy and fixed effect estimation strategy with robust standard errors were used for the estimation from 2001 to 2015.

There have been many studies by researchers using SADC region as the case study. In 2007, ref [\[8\]](#) employed the Generalized Factor Model: One-Sided Estimation and Forecasting to show the co-movement of South Africa business cycle to those of eleven (11) SADC member states over the period from 1980 to 2002. The results showed that, there is a significant co-movement of South Africa business cycle to Swaziland, Botswana, Zimbabwe, the DRC, Lesotho, Angola, Mozambique, Mauritius and Namibia business cycles. On the other hand, [\[9\]](#) examined the SAPC against the Principal-agent-client model (PAC) in Tanzania, one of the SADC countries. The article highlighted the limitations of the anti-corruption solutions undertaken by donors in Tanzania. The anticorruption policies initiated by donors in Tanzania have limited success rate due to reforms that is influence by the country's colonial masters. The effect of inflation rate on Economic growth in the SADC region was also researched [\[10\]](#). Using panel data-time series, fixed effect and fixed effect with instrumental variables between 1980 and 2009, the results showed that inflation have a negative effect on economic growth in the SADC region. Financial integration in the SADC has also attracted research

interest, whilst some researchers argue that financial integration increases stability in the SADC region, others like [\[11\]](#) also argue that deeper financial integration leads to instability in the financial sector in the SADC region. They tested the hypothesis that deeper financial integration leads to financial instability in the SADC region by employing panel causality test based on feasible generalized least squares (FGLS) technique. The results supported the hypothesis that deeper financial integration leads to instability in the financial sector, hence the need for vibrant interest rate, monetary policy and exchange rate policies in the SADC region to curb the instability. Recently, foreign direct investment has been an important determinant of economic growth in most African countries with SADC region not been an exception. Ref [\[12\]](#) employed ordinary least square (OLS) to study the remittances from special economic Zones (SEZ) and used multiple linear regression to draw a relationship between national income and Foreign Direct Investment in the SADC region. The result showed that there is no significant relationship between the two variables. Similarly, [\[13\]](#) examined three different types of foreign capital; they are cross-border bank flows (CBF), foreign direct investment (FDI) and Overseas Development Assistance (ODA) in the SADC region over the period 1980 to 2012. The 3SLS and GMM results revealed that both foreign and domestic factors influence the inflow of foreign direct investment and cross-border bank flows in the SADC region. Likewise, this paper used SADC as the case study, employed fixed effect and difference-in-difference to investigate SAPC on economic growth.

Corruption can impede the growth rate of a country; reduce investment and human capital of a country. Several studies have investigated the relationship between corruption and economic growth. Ref to [\[14,15,16,17\]](#) used Instrumental Variables (IV) whiles this research employed fixed effect estimation strategy to find the impact of corruption on economic growth in SADC member states. On the examination of the anti-corruption instrument on economic growth, this paper adopted the difference-in-difference used by [\[18\]](#).

When corruption is rampant in a country, an anti-corruption policy is relevant to curb it. This is exemplified in the work undertaken by [\[19\]](#). They emphasized the importance of ICT diffusion in combating corruption in African countries using a panel data for 47 African countries from 1996-2014. Over the years, journalists have used mobile phones and invisible cameras to fight corruption. A similar example is a documentary done by Anas Aremeyaw Anas, a Ghanaian journalist who used ICT in 2016 to prove the corrupt practices of 34 judges in Ghana. Anti-corruption policy by President Xi Jinping in China has attracted massive attention by experts who have undertaken various researches to see whether it has had an impact on the economy. A research by [\[20\]](#) investigated the impact of implementing anti-corruption instruments on economic growth by finding its effect on the financing of and investing in innovation by China firms from 2009 to 2015. The authors employed the Probit model, system General Method of Moments (GMM), and Instrumental Variable (IV), to argue that anti-corruption instruments enable firms to have access to long term finance which they in turn invest in innovations. Also,

they argued that anti-corruption policies enable firms who do not have political connections to invest in research and development. The authors used registered cases of certain high ranked public officials in China and articles in newspapers that advocates for anti-corruption policies, but this paper used ratification of SAPC as a measure of anti-corruption. Likewise, [21] used the anti-corruption policy by president Xi Jinping to investigate the impact of anti-corruption policy on firm performance in China. The research used difference-in-difference and propensity score matching methods to argue that state-owned enterprises benefit from anti-corruption policies in China compared to non-state-owned enterprises. The authors used the central inspections into firms as a measure of anti-corruption policy, which is again different from the measure employed in this paper. Though difference-in-difference method is employed here, it differs from that of [21] by way of the fact that there is no pure treatment and control groups, which simply means that a control group in 2002 can be a treatment group in 2003 and vice versa.

2. Econometric Model

$$\ln GDP_{it} = \alpha_i + \beta_1 X_{i,t} + \beta_2 CorrPI_{i,t} + \gamma_1 RD_{i,t} + \gamma_2 CPI_{i,t} \times RD_{i,t} + \varepsilon_{i,t} \quad (1)$$

GDP_{it} is real gross domestic product per capita in country i at time t . α_i is the country fixed effect among the SADC member states. The country fixed effect is included in the model to control for observables and unobservable differences within the countries in the region. β_2 is the estimate when GDP in country i at time t is regressed on the corruption perception index (CorrPI). $X_{i,t}$ is the vector of controlled variables in country i at time t . $CorrPI_{i,t}$ is the corruption perception index in country i at time t . $RD_{i,t}$ which is the ratification dummy, is equal to 1 if the country is in the treatment group and 0 if the country is in the control group. Except for Mozambique that ratified it on 28th December 2008, since the policy takes 30 days after its ratification to come into force, hence 2009 was used as the year of ratification. γ_1 is the estimate when economic growth is regressed on the ratification dummy (anti-corruption growth). γ_2 in the model is the interaction effect of corruption and the ratification dummy. Is the coefficient of the effect on economic growth when corruption perception index (CPI) improves in country i , during the year of the ratification γ_2 is expected to be positive, indicating that, during the years of the ratification among the SADC member states, the CorrPI should improve and $\varepsilon_{i,t}$ is the usual idiosyncratic error in econometric models.

Identification Strategy and Estimation Strategy

The main identification strategy used in this study is the difference-in-difference. To better understand the identification strategy, this paper would have referred to Table 4, Table 5, Table 6, Table 7 (see appendix). The study would have computed the differences between the before and after of economic growth and corruption perception indices of the treatment groups and compare it

to the difference between before and after of economic growth and corruption perception index in the control groups if and only if there are pure treatment groups and control groups, holding all other things constant within the period from 2001-2015. The difference between the difference in the economic growth in the treatment groups and the difference in economic growth in the control groups would have been the effect of the SADC protocol against corruption on economic growth from 2001 to 2015. But looking at Table 4, Table 5, Table 6, Table 7 (see appendix), it is clear that a country can be in a treatment group today but a control group tomorrow due to the different times in the ratification of the policy by the countries. Hence, because there are multiple control and treatment groups, we cannot find the before and after of the effects of the protocol on economic growth. In that regard, the thesis concentrated on the different times in the ratification (see Table 8).

The study did not ignore the fact that the ratification of the protocol in the member states is likely to be endogenous since countries that are more corrupt are more likely to ratify the protocol compared to countries that are less corrupt. If this is the case it should be seen from the data, comparing the CorrPI of least corrupt countries and more corrupt countries to their year of ratification we should be able to see that, countries more corrupt should be the once to ratify the protocol early in order to reduce their rate of corruption. Botswana ratified the policy in 2001, the same year of signing the protocol even though Botswana is the least corrupt country among all the countries in the sample. Also, South African and Tanzania ratify the protocol in 2003, but both have different CorrPI of 2.2 for Tanzania and 4.8 for South Africa. Malawi and Mauritius ratify the protocol in 2002, but the two countries have different CorrPI of 3.2 and 4.5 respectively.

So, this research argues that the ratification of the policy is not endogenous and, so it was not motivated by the rate of CorrPI in the member state but solely depends on the rules enacted by the SADC to ratify the protocol in their respective countries. Hence, this paper uses the ratification year as a quasi-natural experiment to investigate the effect of anti-corruption policy on economic growth as specified in the econometric model above.

The research also employed the fixed effect method of estimation because of the likelihood of unobservable and even observables been correlated with the explanatory variables.

$$Y_{i,t} = \alpha_i + \beta_1 X_{i,t} + \beta_2 X_{i,t} + \beta_3 X_{i,t} + \varepsilon_{i,t}$$

Equation (1) enabled the research to estimate a more efficient estimator compared to the ordinary least square estimator (OLS). The fixed effect model assumes that there is a fixed value for each cross section as shown by α_i in equation (1). The fixed effect model did not control for time variant dummy variables because there was no time trend in the sample used under this study. Though the use of the model enabled the paper to get a more efficient estimator, there is one main disadvantage. The use of fixed effect leads to increase in degrees of freedom due to the inclusion of dummy variables for each cross section. But irrespective of this disadvantage, this research still thinks this method of estimation is better than the OLS.

Fixed effect is used for the estimation because it gives this paper a more efficient estimator compared to Ordinary Least Square (OLS). Due to measurement errors and reverse causality, the use of OLS for the estimation would have been biased without the use of fixed effect model. Reverse causality in this model is when an increase in growth rate of GDP per capita leads to an increase in corruption since more will be available to extract in poor countries that are now rich. The same argument cannot be made about rich countries which usually have low corruption perception index (CorrPI) even though there is still some rate of corruption, hence the sign of the bias is not clear cut as shown in the equation 2.

$$\beta_{ols} = \beta + \frac{\text{cov}(\Delta \text{CorrPI}_{i,t}, \varepsilon_{i,t})}{\text{var}(\Delta \text{CorrPI}_{i,t})}. \quad (2)$$

3. Data and Descriptive Statistics

The main dependent variable is economic growth ($\ln GDP$) and the independent variables are corruption perception index (CorrPI) and the ratification dummy (RD). The control variables are Foreign Direct Investment (FDI), Gross fixed capital formation (GFCF), inflation (INFLA), Trade Openness (TO), population from 15 to 64(L) and institutional index (INS).

The dependent variable is economic growth. Economic growth is proxied by the growth rate of real gross domestic product per capita that is measured at 2010 base year. To get the constant value of the variable, the gross product value added of all producers were summed up and any taxes and subsidies were then deducted. In the calculation of the real gross domestic product per capita, fabricated assets and degradation of natural resources are ignored. The use of this variable will enable this study to know the growth rate of economic growth after the anti-corruption instrument is ratified. The independent variables comprise of corruption perception index and ratification dummy.

3.1. Independent Variables

Corruption Perception Index (CorrPI) is difficult to measure because of the secrecy attached to it. What might be considered by one country to be a corrupt practice will be a normal phenomenon elsewhere. Example is the rate at which policemen in African countries take money from drivers; it has become so normal that even the drivers themselves offer money without being asked. But Transparency International used perception about public sector corruption from 15 surveys to classify countries according to the rate of corruption. It is scaled from 0% to 100%, with a lower value indicating a massive rate of corruption and a high value indicating a low rate of corruption. Though the index has been used for a lot of empirical studies [14,22,23], it has its disadvantages.

The first disadvantage is that it is subjective. What expert "A" will consider as corruption will not be considered by expert "B" as corruption, because it is purely based on what people think, but it still has a credibility when all 15 or majority of the surveyed said the same thing. Second, the data failed to show the magnitude of the corruption

committed and the number of people involved. The coefficient of corruption which is represented by β_2 in equation (1.0) and (2.0) is expected to be positive and statistically significant.

The ratification dummy (RD) is used as a proxy for the anti-corruption instrument. Stata was used to create the year dummy for the anti-corruption instrument, with a dummy equal to 1 for the year that the country ratified the policy and 0 if otherwise. Except for Mozambique that ratified the policy on 28th December 2008 and since the law takes a maximum of 30 days to come into force, 2009 was used as the year of ratification. Due to data issues, only 13 countries were used to do the estimation. To the knowledge of this research, this has never been used as a proxy for anti-corruption instrument. This research expects the coefficient (γ_1) to be positive but insignificant due to weak institutions prevalent among SADC member states.

3.2. Control Variables

Institutional quality index (INS) is proxied by the Polity II index that is sourced from polity IV data set. The index is scaled from -10(total autocracy) to 10(total democracy), with a higher value indicating effective institutions and low value indicating ineffective institutions. The measure of the index covers six components that include the quality of executive recruitments, constraint on the executive authority, political competition, and openness of the executive recruitment and the rate of political participation.

The index has also been used by [20] and [24]. This estimate is included because before an anti-corruption policy will work, it depends on the effectiveness of the institutions in the country. The coefficient is expected to be negative and statistically significant due to weak institutions in most African countries.

Foreign direct investment (FDI) is measured as a percentage of Gross Domestic Product of a country in a given period, usually a year. It is calculated as, new investment minus dis-vestment from foreign investors divided by GDP. The research controlled for FDI because it is believed to affect economic growth of a country.

Labour measures (L) the economically active part of the population, ages between 15 and 64 regardless of whether the person is a legal citizen or not. This variable is controlled because it affects economic growth of a country.

The gross fixed capital formation (GFCF) used in this study is measured in constant 2010 US dollars and it measures the number of machineries, construction of railways, roads, schools, hospitals, offices, industry structures and inventories in a country. Capital has a statistically positive significant effect on economic growth.

Inflation (INFLA) rate measures the percentage change in the average amount of goods and services bought by a typical consumer as measured by the Consumer Price Index (CPI). Inflation is being controlled for due to its effect on economic growth.

Trade openness (TO) is measured as a Percentage of exports plus imports divided by the Gross Domestic Product of a country at a given period, usually a year. This is a popular variable in the corruption and economic growth literature because when a country is not open, it impedes investment thereby reducing economic growth. The openness of an economy can has a positive or negative effect on corruption. This thesis, therefore,

controlled for this variable to get a precise estimate of the ratification of the policy on economic growth

3.3. Data Sources and Type

Annual data from 2001 to 2015 for 14 SADC member states was used. The main dependent variable is real Gross Domestic Product, Per Capita and the main independent variables are the ratification dummy and Corruption Perception Index (CorrPI). Apart from Corruption Perception Index and the Institutional Index, all the other data are sourced from World Bank development indicators. Finally, data of the Corruption Perception Index is sourced from Transparency International and that of the institutional index is sourced from Polity IV data set.

3.4. Summary Statistics

Stata program is used to compute the descriptive

statistics for the 13 countries from 2001 to 2015. The statistics of interest are the arithmetic mean, standard deviation, maximum value and the Minimum value.

From Table 1, the average rate of Corruption Perception Index is 35% and the average rate for institutional index is 3.67. This means from the two indices shows that, most countries that have high rate of corruption are likely to have weak institutions as measured by the institutional index. The maximum and minimum values for the corruption perception index are 65% and 15% respectively. The minimum and maximum value for the institutional index is -9 (autocratic institution) and 10 (democratic institution). The average of economic growth is 7.22%, which is even less than the average growth rate of gross fixed capital formation.

4. Results and Discussions

Table 1. The descriptive statistics of the main variables and the control variables

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
<i>lnGDP</i>	195	7.217	1.183	5.006	9.226
<i>lnFDI</i>	178	1.095	1.067	-2.813	3.733
<i>lnTO</i>	177	4.448	0.403	3.219	5.336
<i>lnLABOUR</i>	195	4.018	0.104	3.899	4.264
<i>lnGFCF</i>	155	21.624	1.471	18.620	25.179
<i>lnINFLATION</i>	185	2.233	1.151	0.252	10.103
INS INDEX	182	3.676	5.406	-9	10
<i>CorrPI</i>	178	35	12.409	15	65

Source: Authors.

Table 2. Economic Growth is being regress on corruption, vector of control variables, Anti-Corruption Instrument and the interaction of corruption and Anti-Corruption Instrument

Variable	I	II	III
LNFDI	0.002 (0.035)	0.002 (0.036)	-0.001 (0.036)
LNT0	0.001 (0.74)	0.001 (0.174)	0.023 (0.167)
LNL	6.344 (2.882) *	6.352 (2.957) *	6.166 (2.778) **
LNGCFC	0.338 (0.139) **	0.338 (0.139) **	0.345 (0.144) **
LNINFLA	0.001 (0.042)	0.001 (0.139)	-0.000 (0.042)
INS	-0.044 (0.011) **	-0.035 (0.011) **	-0.025 (0.012) **
CorrPI	0.012 (0.008)	0.021 (0.008)	-
RD	-	0.004 (0.072)	0.248 (0.276)
RD* CPI	-	-	-0.009 (0.008)
CONS	-25.651 (9.416) **	-25.689 (9.662) **	-25.941 (8.931) **

The estimates in parenthesis are the robust standard errors. ** is significant at 5% and * is significant at 10%.

Table 3. Diagnostics of the estimation shown in Table 2

DIGNOSTICS			
R-Square	0.7167	0.7171	0.6933
F-Value (K, N-K)	31.55	48.15	28.70
Probability > F	0.0000	0.0000	0.0000
Observations (N)	118	118	118

From the regression result, a conclusion can be reached that corruption has a negative statistically significant effect on economic growth in SADC member states (see column I and II of Table 2). A one-unit improvement in the corruption perception level in the SADC member states will increase economic growth by 2.1%. This is statistically significant at 5%. This result supports the Sand the Wheel hypothesis, which has been argued by several researchers. This explains why the SADC member states signed the Protocol to combat corruption in the region. The effect of corruption on economic growth is likely not to be causal due to the identification issues addressed earlier in the methodology.

With regards to the anti-corruption instrument (ratification dummy), it has no effect on economic growth (column II of Table 2). This shows that the ratification of the anti-corruption instrument has no effect on economic growth in the SADC region holding all other things constant. The statistically insignificant effect of the ratification dummy on economic growth can be due to two reasons. The first being the limited period used in the study since implementation of policies in a country take time to have an effect in the economies of the SADC countries. Second reason is because the institutions of the member states are weak; the policy is unable to have an effect on the economy. This is shown in all the columns, where the institutions are not having the normal-positive relationship with economic growth but rather a negative statistically significant relationship. It is only weak institutions that will have a negative effect on economic growth.

Column III of Table 2 shows the result of the interaction effect, where the interaction effect of the Corruption Perception Index (CorrPI) and the Ratification Dummy shows that during the years of the ratification when citizen's perception about corruption improves in country i it will have no effect on economic growth, hence is not statistically distinguishable from zero. This result is not surprising because even if a country puts measures in place to control corruption and it improves the perception people have about corruption in that country, and the institutions are weak, it will still have no effect on economic growth

Labour contributions (lnL) and Gross Fixed Capital formation (lnGFCF) have a positive statistically significant effect on economic growth in SADC member states (shown in all the columns in Table 2). Both are significant at 10% and 5% respectively. This is consistent with economic theory, that an increase in fixed capital and contribution to output by labour will improve economic growth, holding all other things constant. Growth rate of inflation, trade openness, and foreign direct investment have no effect on economic growth in SADC region (shown in all the columns in Table 2). Foreign Direct Investment had no effect on economic growth [10]. Also, Trade Openness and Inflation rate had no statistically significant effect on economic growth.

Another interesting result has to do with the Institutional Index Variable. The institutional index variable (INS) has a statistically significant negative effect on economic growth (column I, II and III). A one-unit improvement in institutions will reduce economic growth in the SADC region by 4.4%, 3.5% and 2.5% (shown in all the columns in Table 2). This suggests that the institutions available in

the SADC member states were ineffective during the period of 2001 to 2015. Hence the research argues that the member states have a weak institutional base, which is not surprising due to the levels of misappropriation. The institutional index variables are all statistically significant at 5% (shown in all the columns in Table 2). The overall model as measured by the P-values of the F-test (see Table 3) is statistically significant, with the independent variables explaining about 71.67%, 71.71% and 69.33% of the variation in the dependent variable (see Table 3).

5. Conclusion

Research into the impact of an anti-corruption instrument on economic growth has found out that, it has a positive effect on economic growth through its effect on firm performance. This paper investigated the effect of the ratification of an anti-corruption instrument on the development of thirteen (13) Southern African countries from 2001 to 2015.

Using fixed effect and difference-in-difference method, the research found out that the anti-corruption protocol did not have a statistically significant effect on economic growth due to the weak institutions available in the region. This was supported with the regressing of economic growth on the interaction of corruption and the ratification dummy.

The implication is that, for anti-corruption policies to have an effect in an economy, the relevant institutions in that country should be made proactive. Each of the member states can establish an office for independent prosecutor who will see to it that corrupt officials are held accountable. Also, for the ratification of the policy to have an effect in the economy, the Judiciary should be independent from the Executive in order to perform their duties without fear or favor.

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Appendix

Table 4. TREATMENT AND CONTROL GROUP 1

Treatment group 1 (2001-2002)	Control group 1(2003)
Botswana	Lesotho
Malawi	South Africa
Mauritius	Tanzania

Note: The Treatment group in Table 4 shows the countries that signed and ratified the policy from 2001- 2002. And the Control group here shows the countries that signed the protocol but failed for it to be ratified from 2001-2002.

Table 5. TREATMENT AND CONTROL GROUP 2

Treatment group 2 (2003)	Control group 2 (2004 to 2006)
Lesotho	Zimbabwe
South Africa	Angola
Tanzania	Namibia
Zambia	Switzerland

Note: The Treatment group in Table 5 shows the countries that signed and ratified the policy in 2003. And the Control group here shows the countries that signed the protocol but failed for it to be ratified in 2003.

Table 6. TREATMENT AND CONTROL GROUP 3

Treatment group 3 (2004-2005)	Control group 3 (2006-2008)
Zimbabwe	Swaziland
Namibia	DRC
Angola	Mozambique

Note: The Treatment group in Table 6 shows the countries that signed and ratified the policy from 2004-2005. And the Control group here shows the countries that signed the protocol but failed for it to be ratified from 2004-2005.

Table 7. TREATMENT AND CONTROL GROUPS 4

Treatment 4 (2006-2007)	Control group 4 (Never Ratified)
Switzerland	Seychelles
Mozambique	

Note: The Treatment group in Table 7 shows the countries that signed and ratified the policy from 2006-2007. And the Control group here shows the country that signed the protocol but failed for it to be ratified from 2006-2007. Seychelles never ratified the policy, hence will always be in the control group.

Note: Due to the different times in the ratification of the policy by the SADC member states the treatment groups cannot refer to a common calendar year. Hence multiple treatment and control groups.

Corruption Perceptions Index, 100 = no corruption

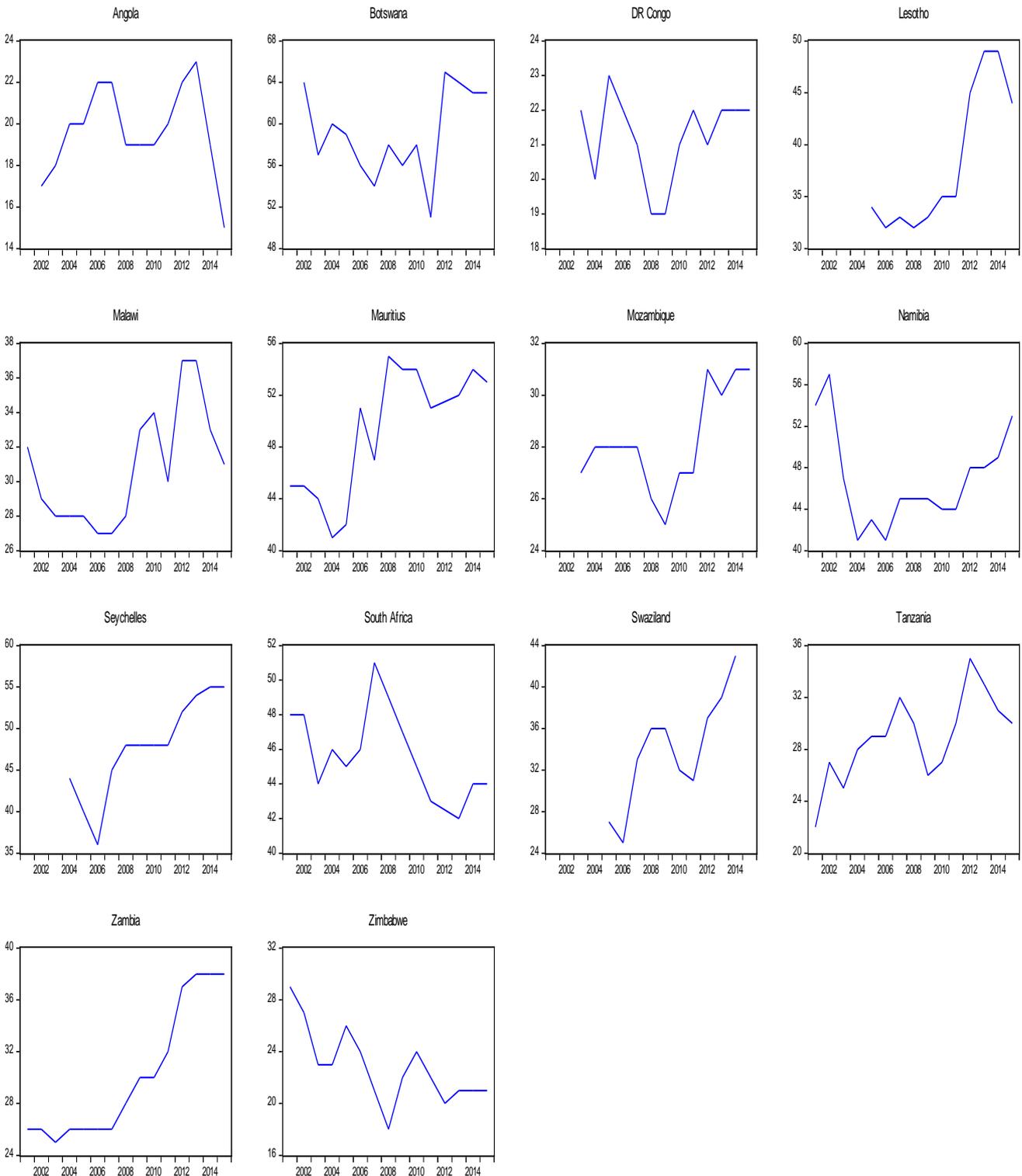


Figure 1. The Trend of Corruption Perception Index for all the 14 Southern African Countries from 2001 to 2015 (Source: Authors)

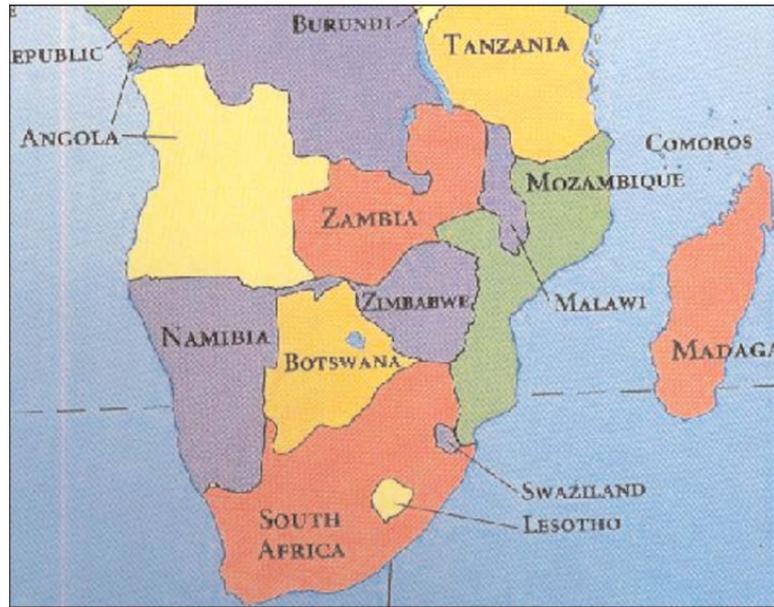


Figure 2. Map of Southern Africa showing the SADC countries (Source: Ref [25])

Table 8. SIGNATURE AND RATIFICATION OF THE SADC PROTOCOL AGAINST CORRUPTION

Country	Heads of state and Government	Date of signing	Date of ratification
Angola	H.E. President José Eduardo dos Santos	14 August 2001	17 July 2005
Malawi	H.E. President Joyce Banda	14 August 2001	2 September 2002
Mauritius	Sir Anerood JUGNAUTH	14 August 2001	4 January 2002
Mozambique	H.E. President Armando Emilio Guebuza	14 August 2001	28 December 2007
Namibia	H.E. President Hifikepunye Pohamba	14 August 2001	23 June 2005
Seychelles	H.E. President James Alix Michel	14 August 2001	No
south Africa	H.E. President Jacob Gedleyihlekisa Zuma	14 August 2001	15 May 2003
Swaziland	His Majesty King Mswati III	14 August 2001	1 August 2006
Tanzania	H.E. President Jakaya Mrisho Kikwete	14 August 2001	20 August 2003
Zambia	H.E. President Michael Chilufya Sata	14 August 2001	8 July 2003
Zimbabwe	H.E. President Robert Gabriel Mugabe	14 August 2001	8 October 2004
Botswana	H.E. President Lt. Gen. Seretse Khama Ian Khama	14 August 2001	14 August 2001
DRC	H.E. President Joseph Kabila Kabange	14 August 2001	19 May 2008
Lesotho	H.E. President Andry Rajoelina	14 August 2001	29 July 2003

Source: Ref [7].



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