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## *Full Length Research Article*

# CORRUPTION AND ECONOMIC GROWTH IN ZIMBABWE: UNRAVELLING THE LINKAGES

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**ABSTRACT**

Corruption impedes investment and economic growth by increasing enterprises' cost of doing business. This cost is often transferred to consumers through higher prices or lower quality of goods and services, which affect negatively the private sector's labour market, efficiency, competition, innovation and general output. The mainimpetus of this paper is to investigate the linkage between corruption and economic growth in Zimbabwe. The study relies on a quantitative methodology by employing a multivariate regression equation using annual time series data. Our results indicate that corruption indeed impact on investment and economic growth. Trade openness, foreign direct investment and inflation were also found to be significant. The policy implications of these findings are: Zimbabwe should reduce disproportionate government regulation of economic activities because this facilitate bureaucratic corruption, rent seeking, bribery, theft of public property and other forms of unrestrained opportunism. Removal of regulations entail political deregulation, trade openness, introducing more probity into the procurement process, strengthening anti-corruption institutions, observance of the rule of law and expanding the opportunities for ordinary citizens to participate in governance. It is anticipated that good governance would help citizens to call their rulers to account leading to better accountability, transparency and economic growth.



## INTRODUCTION

The period 1981 to 1982 after independence was greeted with remarkably high GDP growth rates averaging 10.4 percent in 1981. The high economic growth waselicited by helpful external factors like conducive world market conditions, low corruption/rent-seeking, lifting up of sanctions and opening up of external markets which promoted economic growth. However, a decade later, political uncertainties, pervasive government regulations, politicization of resource allocation, chaotic land reform program, non-viable gaps in the Lancaster constitution and violence prompted an economic recession. The judicial system and other institutions of governance which were supposed to protect private property rights and embolden good corporate governance compliance by domestic investors became willing adjuncts of central government impunity. Threats, lobbying, outright theft of public resources, corruption, intimidation and violence were used by the state against actual and perceived corporate and individual enemies. In 2000 the country embarked on a violent fast-track land reform program. Some public officials including government ministers corruptly awarded themselves multi farms despite the law prescribing one person one farm.

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The bulk of prime and fertile agricultural land was redistributed from 4500 white farmers to well-healed individuals whilst marginalized rural people were given infrastructure-less small farms in remote areas. The upheaval in the commercial agricultural sector, hyperinflation and widespread price and wage controls led to productivity declines in all key sectors of the economy.GDP growth rate was -5.1 percent in 2006 and inflation rose to 1216 percent. Sibudubudu (2002) and Szeftel (2000a) argue that at independence in 1980, Zimbabwe inherited underdeveloped and colonially weakened institutions which later began the fertile ground for the propagation of corruption after independence. Immediately after independence, in pursuit of Growth with Equity policies, the country introduced macroeconomic controls, import substitution and redistributive policies that compelled a large public sector and increased public spending on health, infrastructure and other social welfare programs (Muzurura, 2016). The macroeconomic controls which included permits, licenses, price and wage freeze and a plethora of stringent regulatory constraints on the supply-side led to high growth of bureaucratic corruption between 2000 and 2008. For example, in year 2007, small urban pressure and interest groups such as the War Veterans Association, Woman Action Group, Children of Heroes, Youth Alliances, Women in Politics, Affirmative Action Group to name but a few succeeded in compelling the

government to legislate price control regimes which forced foodstuff and grain prices below their market equilibrium levels. This resulted in a disparate transfer of wealth from the larger, but poorly organized, rural sector to the politically-volatile and relatively well-organized urban sector. High-level corruption manifested itself through tendering processes, in procurement, in smuggling, transfer pricing, tax evasion and irregular issuance of import licenses and permits. State land was parceled out corruptly by politically aligned cooperatives. Kickbacks and conflict of interest became common feature in many prosecuted corruption cases. Substantial state intrusion in private exchange produced politicized resource allocation arrangements in which proceeds to factors of production were not decided on the basis of the marginal productivity of factor inputs but by the rent-seeking activities of the resource owners (Muzurura, 2016).Thus in such circumstances, the privileges to the artificial scarcity created by government regulation of economic activities were regularly won by the most effective and efficient rent-seekers and not necessarily by the most efficient innovators, entrepreneurs or producers.

By the end of 2007, corruption and rent seeking became entrenched and a predictable way of doing business especially in both the private and public sector. The extent and nature of bureaucratic corruption deepened due to inappropriate laws governing custom duties, tariffs and level of taxation. Weakened institutions such as the Anti-Corruption Commission were ineffective in constraining the ability of the government to intervene in private exchange. The Zimbabwe Investment Centre which was ostensibly created to facilitate investment inflows became a colander mechanism that enabled the government officials to corruptly block or restructure investment proposals considered incongruent with national strategic goals of indigenizing foreign companies (Robinson, 1993; Sibudubudu 2002). The main problem with corruption or rent-seeking is that, it fosters a digression or leakages of resources from the national fiscus to private spending purposes. Such illicit private expenditures funded by corruption have much lower multiplier or tickle down effects than expenditures on agriculture, manufacturing, transport, energy, education, health, and public infrastructure required for the growth of Zimbabwe economy. In addition, like in many developing countries, earnings from rent seeking and corruption are often invested in sterile assets like vehicles, consumption of exotic foodstuffs and luxury goods that generate limited productivity for the broader economy. In order to avoid the ruinous state red-tape, bureaucratic corruption and high cost of doing business, many companies are migrating from the formal sectors to the informal sector where there are no taxes and high transaction costs. This significantly erodes the revenue base, savings and investable funds and ultimately impact on economic growth. Of primary concern however, is also the ever- increasing bureaucratic corruption where the general populace is being coerced to pay bribes at police road blocks and ports of entries. The objective of the study is to explore the connection between corruption and economic growth in Zimbabwe.

The study therefore seeks to answer the following questions: Is there a nexus between corruption, investment and economic growth in Zimbabwe? What policy implications for economic growth can be derived from this nexus? The study is significant for a number of reasons: First, Zimbabwe is one of the most corrupt country in Sub- Saharan Africa. Corruption is known to deter economic growth by negatively impacting on the quantity, quality and efficiency of productive public investment. It dislocates public funds from public investment towards unproductive activities.

This disarticulation has an undesirable effect on the efficiency of public investment as corrupt public officials give priority to investments that produce higher private material and political gains over growth-enabling infrastructural investments with higher social returns. Second, corruption and rent seeking increases production cost, reduces competiveness and distorts competition and fair market structures. The effect is a general dead weight loss to both producers and consumers which tapers economic growth. Corruption is known to dampen foreign aid, savings and foreign direct investment the only feasible transmission channels for increasing economic growth and eradicating poverty in Zimbabwe. Third, foreign inflows are known to influence technological progress, improve employment generation and enhance productivity (Blomstrom and Kokko; 1999; Faini and de Mello, 1997). Fourth, the harmful effects of corruption are especially stressful on the poor, who are most reliant on the provision of public services and are least incapable of paying the extra costs associated with bribery, political violence, lobbying, underwriting of political campaigns, theft, nepotism, fraud, and the misappropriation of economic privileges (Muzurura, 2016).

Finally according to Murphy et al (1997), publicly rent seeking by government officials is likely to hurt entrepreneurial and innovative activities more than every day production. Since innovation drives industrial productivity, public corruption severely reduce the rate of economic growth in developing economies. This is because innovators and entrepreneurs need government supplied goods like permits, licenses and import quotas whose demand is usually inelastic. As a consequence, civil servants whose responsibilities include executing development strategies and administering the state's regulatory system, extort bribes from entrepreneurs seeking import licenses, foreign exchange permits, and subsidized credit access and investment and production licenses. According to Krueger (1994) the more the inelastic the demand, the greater will be the value of rents, therefore the deadweight loss associated with corruption. Fifth, Zimbabwe is a highly regulated country with the government heavily involved in all aspects of the private markets. The regulations and controls give rise to smuggling, black markets, bribery and kickbacks and other numerous corrupt activities. The people now think that the government is paying lip service to growing corruption as few "big fish" are being netted despite inordinately high private media publicity. The few being prosecuted are those engaging in petty corruption or are linked to rival political parties. In response to such lackadaisical approach to corruption management, most citizens now view corruption as grease in the squeaking wheel rather than gritty sand which hampers competition. Engaging in corrupt activities have become a passport for avoiding bureaucratic or red-tape corruption. The paper differs from prior studies on corruption done in Zimbabwe in two ways: Not much studies have been done in Zimbabwe centering on the nexus of corruption and economic growth using an econometrical approach. The few studies we know of adopted a qualitative methodology using a sample based questionnaire to elicit responses. It is our view that qualitative approaches based on sampling (questionnaire) have one significant drawback. Corruption is illegal and involves a lot of secrecy and therefore not much reliable data can be obtained from perpetrators and victims of corruption.

Also a popular construct in Zimbabwe literature has been to focus on the causes of corruption without looking at its implication on economic growth. We create a new construct which attempts to disentangle the nexus between corruption, investment and economic growth using a quantitative methodology in order to maintain objectivity on our findings. This paper extends the existing literature in several ways. By utilizing measures of corruption from a macroeconomic perspective, we provide a comprehensive analysis of the effect of corruption on economic growth, an approach which has never been done in Zimbabwe. This paper is also an attempt to add to empirical literature on corruption in developing countries using the case of Zimbabwe. The article is made up of five sections: section one is the introduction and explains the problem of corruption. Section two covers theoretical consideration and empirical literature; Section three presents the methodological framework. Findings and discussions are on section four whilst section five is concerned with the conclusions and recommendation.

## Literature Review

The process of expending resources in an attempt to influence illegal public policy outcomes is called rent-seeking hereinafter also referred as corruption. Corruption defies easy treatment due to its mutative nature and therefore has been used interchangeably with rent seeking in most literature (see Mbaku, 1992; Krueger, 1994; Vishany *et al.,* 1993). The resources expended to influence policy outcomes create no social product and as a result are regarded as a social waste (Tullock, 1967 and 1993; Krueger, 1994). Corruption can thus result in the adoption of perverse fiscal and monetary policies that impose significant costs on a large and poorly organized population while at the same time effecting a significant transfer of wealth from the economy to a few well-organized groups. This complexity makes identifying and dealing with corruption a momentous challenge, both in the developed and developing economies such as Zimbabwe. According to Balogun (2003), there is corruption when approved codes or rules have been ignored to attain personal ends or manipulated to frustrate public intentions. Wilson (1968) asserts, corruption occurs whenever a person in exchange for some private advantage, acts other than as his duty requires. In contrast Stark (1997) claims that corruption involves private gain from public office. Transparency International (TI) has defined corruption as the misuse of entrusted power for private benefits (TI 2006). Nye (1967) defines corruption as behaviour which deviates from the formal duties of a public role because of private-regarding pecuniary or status gains; or violates rules against the exercise of certain types of private-regarding influence. Thus corruption includes such behaviour as bribery; theft, nepotism; and misappropriation. Corruption becomes particularly significant in emergent or less developed economies (Wilhelm, 2002), resulting from the inexistence of a preventive legal framework, and having as a consequence, among others, a reduced effectiveness of the received international aid and the efficient allocation of domestic and external resources (TI, 2000).

To an economy, the costs of corruption include the resources expended to have the state pass laws to create artificial scarcities, and those spent to capture them once they have been created (Buchanan, 1980). Accordingly, in countries with politicized resource allocation systems such as obtaining in Zimbabwe inefficient producers and entrepreneurs canremain in the marketplace indefinitely. Mbaku (1992) shows how thesuccess of such entrepreneurs is not based on their ability to servicethe market efficiently but on how successful they are at rent-seeking.

As a result, many entrepreneurs in Zimbabwe devote a substantial amount of resources to finding ways to influence distributional outcomes and only a meagre resources are devoted to the actual production of goods and services. According to Ndikumana (2007), the subsequent distortion of economic incentives made possible by massive state regulation has become an important obstacle to FDI attraction and economic development. This is because corruption slows down the growth of the income of the poor, reduces pro-poor public expenditures, causes congestion in social services, and induces capital intensity in production, which reduces the employment impact of foreign direct investment and growth (Ndikumana 2007). In order to minimize the cost of state regulation onan individual's enterprise, many entrepreneurs have either taken their activities underground or must pay bribes to civil servants in order to continue to have access to markets in the formal sector (Mbaku, 1992).An excessive migration of enterprises from the formal sectors has battered the tax base of many developing countries and resulted in significantly lower FDI and economic growth. Kroszner & Strahan (1996) show that state-level deregulation of bank branching restrictions was driven by pressures from political interest groups. They demonstrate that states with a larger presence of groups that stood to benefit from deregulation (large banks and small bank-dependent firms) were the first to adopt deregulation legislation. The more difficult it is in an economy to define and enforce the rules of the game and limit expropriation of various sorts, the easier it is for politically powerful agents to engage incorrupt activities. Developed economies have generally better institutions and provide a more robust array of checks and balances than those in developing economies. Atthe macroeconomic level, corruption has been shown to have negative effects on per capita income and growth (see Mauro 1995; Ades and Di Tella 1997; Lambsdorff 2003). Culture has also been cited as a determinant of corruption in developing countries. As argued by Jabbra (1976), corruption arises from the existence of defective cultural norms and behaviour. Other researchers argue that corruption arises from the foreign norms that accompany modernization (see Mbaku, 1992; Makochekanwa, 2014). Vishny *et al,* (1993) argue that corruption is costly due to the distortions entailed by the necessary secrecy of corruption. They find the demand for secrecy shift a country's investments away for the growth enabling projects to potentially useless projects such as defense if the later offer better opportunities for secret corruption. Gani (2007) investigated the relationship between indicators of governance and FDI using a sample of countries from Asia and Latin America and finds the rule of law, control of corruption, regulatory quality, government effectiveness, and political stability as positively correlated with investment. Using data on foreign and local direct investments in 111 countries over a five-year period 1994-1998, Habib and Zurawicki (2001) demonstrated the negative impact of corruption on FDI compared to domestic investments. They showed that the influence of corruption appears to be enervated by such factors as the degree of trade openness of the host market and the political stability of the country. Lambsdorff (2003) concurs, the overall foreign capital inflows of a country and economic growth decrease with corruption. However, Straub's (2008)

said that after reaching a certain threshold value the impact of petty bureaucratic corruption on economic growth gets weakened substantially. In contrast, Hakkala *et al*. (2008) based on a study of Swedish multinationals, has recently drawn attention to the possibility that corruption may differently interact with the established projects depending on whether they are export-or local market-oriented. In their study the affiliates' sales within the host country market suffered as a result of corruption. Several authors show empirical evidence that political, corruption, institutional and legal environments are important to explain differences in economic growth and productivity among countries (Knack and Keefer, 1995; 1997; Hall and Jones, 1999; Kaufmann*et al,* 1999; Talbott and Roll, 2001; Globerman and Shapiro, 2002).Bende-Nabende (2002) analysed the experiences of 19 Sub-Saharan African countries in 1970–2000 and found that the most dominant long-run drivers of economic growth in Sub-Saharan Africa are market growth, lower corruption, export-orientation strategy, and FDI-related policy liberalization. Globe man and Shapiro (2002) show that investment in corruption-reducing infrastructure such as political, institutional and legal environment enhances foreign capital inflows and economic growth, but also creates the conditions for domestic multinational corporations to emerge and invest abroad. Corruption may affect negatively the country's ability to attract foreign investment, since it works as a tax on profits (Bardhan, 1997) hence the costs of doing business escalates andthe expected investments and profitability decreases. Mo (2001) believes that corruption undermines the innovators who need to deal with public services whose demand is inelastic.

Thus innovators and entrepreneur's become the main targets of corruption, and they have to pay highbribes, since they do not have established lobbies or great coercive power. Wei (2000) in a sample of 45 host countries and 14 source countries, for the period 1990-1991, concludes that a tax rate rise on multinational firms has the same negative impact on FDI and economic growth as a rise of the corruption level. Some recent empirical studies provide evidence of a negative relationship between corruption and FDI inflows (Hines, 1995; Wei, 1997, 2000; Habib and Zurawicki, 2002; Voyer and Beamish, 2004; Hakkala *et al,* 2008; Al-Sadig, 2009; Schudel, 2010), while others fail to find any significant relationship (Wheeler and Mody, 1992; Abedand Davoodi, 2002; Akcay, 2001). Corruption raises operational and production costs, creates uncertainties that deter both domestic investment and economic growth (Shleifer and Vishny *et al,* 1993; Wei, 1997 and Campo *et al,* 1999). Models of firm investment under uncertainty show that if capital is partially irreversible, then greater uncertainty about future returns on investment increases the option of waiting to undertake an irreversible investment (Pindyck and Dixit, 1994).At the microeconomic level, evidence shows that corruption is associated with lower efficiency in the allocation and use of production factors hence contributing to low economic growth (see Bó and Rossi 2007). Corruption discourages investment because the various forms of rents such as bribes and kickbacks increase uncertainty over there turns to capital and raise the cost of production, which ultimately reduces profitability (Mauro, 1995). Tanzi and Davoodi 2002a) avers that corruption acts as a tax on capital, but unlike official revenue tax, it is uncertain and unpredictable, and therefore difficult to internalize. Given that corruption tends to perpetuate itself, this makes the option of delaying investment less attractive and induces potential investors to prefer activities with shorter maturity such as trade and speculative ventures over long-term investment (Ndikumana 2007). According to Murphy *et al,* (1993), corruption by government officials is likely to hurt efficient seeking and innovative FDI more than the everyday production. In many developing countries innovation-seeking FDI drives economic growth and hence corruption stymies economic growth more severely than production. Guillaumemeon and Sekkat (2005) analysed the relationship between the impact of corruption on economic growth and investment and the quality of governance in a sample of 63 to 71 countries between 1970 and 1998. They founda negative impact of corruption on both growth and investment. Ades and Di Tella (1999) argue that openness to international trade reduces corruption because it opens economies and its government, to greater competition from abroad. Rodrik (1998) concurs, that openness to international trade raises the level of government expenditures. Sanyal and Samanta (2008) examined US FDI outflows with respect to the level of corruption, in the form of bribery in 42 recipient countries over a five-year period. They demonstrated that US firms are less likely to invest in countries where bribery, as measured by the corruption perceptions index is dissolutely pervasive. The greater the degree of openness, the larger the expected FDI flows, because more markets are available for exporters and resource allocation is more efficient, providing economic welfare gains (Gastanaga *et al.,* 2006). Several authors found a significant positive relationship between FDI inflows and the degree of openness (Gastanaga *et al.,* 1998; Nonnenberg and Mendonca, 2004; Agiomirgianakis *et al.,* 2006; and Mathur and Singh, 2013). Similar studies by Nonnenberg and Mendonca (2004), Kahai (2004), and Al-Sadig (2009), find negative and significant effects of inflation on FDI. Alfaro *et al.,* (2008) posit that better local financial conditions stimulated by adequate gross fixed capital formation not only attract foreign companies but also allow host economies to maximize the benefits of foreign investments. However, Ponce (2006) found inflation not statistically significant. Mauro (1995) investigated the relationship between investment and corruption for 58 countries utilising corruption indicators from 1980 to 1983 and found that corruption negatively affect economic growth.

In order to identify the channels through which corruption affects the economic growth, Mo (2001) extended the analysis by estimating the impact of investment, the rate of productivity growth on level of corruption, initial GDP per capita, human capital, and political stability channel in the transmission process and the rate of productivity growth on level of corruption, . Their results show that 1 percent increase in the corruption level reduces the growth rate by about 0.72 percent after controlling for the level of per capita real GDP. In contrast, Mauro (1995) finds political instability channel is the most important channel through which corruption affects economic performance. Del Monte and Papagni (2001) used a dynamic panel data approach to economic growth based on time series (1963-1991) for 20 Italian regions focusing on the determinants of the rate of growth, corruption, public infrastructures and public expenditures. Their results show that corruption has a direct negative effect on the long run opportunities of economic growth because governments can offer fewer inputs to private economic activities. With a positive amount of corrupt transactions, some economic resources are wasted and fewer infrastructure or public services are disposable for private production. According to Gyimah-Brempong, (2002), a study conducted in 21 Africa

countries from 1993 to 1999, indicated that corruption decreases economic growth directly and indirectly through decreased investment in physical capital. According to empirical evidence, a unit increase in corruption decreases growth rates of GDP by 0.75 and 0.9 percentage points and per capita income reduces between 0.29 and 0.41 percentage points per year. Thus corruption decreases growth directly through decreased productivity and misallocation of existing resources. Pellegrini and Gerlagh (2004) using cross-country regression, studied empirically the direct and indirect transmission channels through which corruption affects growth levels. The study focused on the effect of corruption on investment, schooling, trade policy and political stability and studies the contributions of various channels to the effect of growth. They find that one standard deviation increase in the corruption index is associated with a decrease in investments of 2.46 percentage points, which in turn will decrease economic growth by 0.34 percent per year. When the transmission channel is "openness", a standard deviation increase in the corruption index is associated with a decrease of the openness index by 0.19, resulting a decrease in economic growth by 0.30 percent per year. In this study also found that the transmission channels explain 81 percent of the effect of corruption on growth.

Using Granger causality links between foreign direct investments and financial markets for a panel of 22 developing countries over the period of 1976-2003, Kholdy and Sohrabian (2008) found foreign direct investment may jump-start financial development in developing countries and that most of the causal links are found in developing countries which experience a higher level of corruption in the form of excessive patronage, nepotism, job reservation, secret party funding and suspiciously close ties between politics and business. Nevertheless, Swaleheen and Stansel (2007) using cross sectional analyses in a panel of 60 countries, argued that in countries with low economic freedom, corruption appears to reduce economic growth because economic agents have very few choices. They also found that corruption helps growth by providing a way around government controls.

## MATERIALS AND METHODS

### Theoretical Model Framework

Following the orthodox practice in the empirical literature on the effects of corruption on economic growth an eclectic regression model was adopted (see for example, Hill, 2007, Kim, 2010; Aisedu, 2002; Sikwila, 2015; Jenkins, 1998, Bayai and Nyangara, 2013; Dailami and Walton, 1992; Muzurura, 2016). All the variables included in the regression model were guided by empirical literature and theoretical considerations. Among the economic explanatory variables of economic growth, we include the corruption, the degree of trade openness, inflation, government expenditure, capital formation. Secondary data was obtained from the World Bank database(2014). Perceptions of Corruption Index data was obtained from Transparent International Zimbabwe database.
The empirical research on the relationship of corruption, investment and economic growth is based on the following regression equation:

$$GDP_t = \beta + \beta_1 COR_t + \beta_3 LIT_t + \beta_3 TOPEN_t + \beta_4 INF_t + \beta_7 FDI_t + \mu$$

GDP-Gross domestic product growth rate at a time t
COR- Corruption at time t
$FDI_t$- foreign direct investment.
TOPENt- Trade openness
LIT-literacy rates, a proxy for level of education.
INFt- Inflation a proxy for macroeconomic stability
$\mu_t$ error term

Both liner and logarithmic specifications were experimented on but we adopted the linear form because, it gave superior performance in terms of explanatory power and general significance of the main variables-corruption and FDI.

### Description and justification of dependent variable and covariates

**Gross Domestic Product ($GDP_{t-1}$):** GDP, the dependent variable is used to capture the supply capacity or market size of the economy. Previous studies have proxy for market size either with real or real lagged GDP (see Faini and de Melo, (1990); Wheeler and Mody (1992); Kim (2010); Jenkins (998) and Aseidu (2002). We expect high corruption levels to have a negative influence on economic growth. There is wide support in the literature for the view that corruption is detrimental to growth (see Tanzi 2002; Svensson 2005; Gyimah-Brempong 2002; Mauro, 1995). However corruption exhibit very natural increasing returns that may make corruption attractive to productivity activity. This can lead to numerous equilibria in the economy with bad equilibria exhibiting very low levels of corruption and low economic (Murphy *et al,* 1993).

**Foreign direct investment (FDI):** FDI could be defined as an investment that is made to acquire a lasting interest in an enterprises or country operating in an economy other than that of an investor, the investor's purpose being to have an effective voice in the management of the enterprise resident in the other economy (IMF, 1977). FDI provides the bulk of investable funds in Zimbabwe. FDI inward flows as a percentage of GDP are used as a measure for investment. FDI is associated with economic growth through the accelerator effect which makes investment a liner proportion of changes in GDP (Hicks 1917, Jorgenson, 1963; Quattara, 2000). Low corruption attracts FDI and human capital development through transfer of managerial skills to developing countries and this boosts economic growth (see Greene and Villanueva, 1991; Quattara, 2000; Mauro, 1995, Tanzi and Davoodi, 2002a; Ndikumana, 2007).

**Corruption (CORR):** It broadly includes the following elements; theft, bribery, kickbacks, frequency of irregular payment for employees and the judiciary, political violence, improper practices in the public sphere, the political system as a threat to foreign direct investment, frequency of corruption cases in public administrations (Zouhaier, 2011; Lambsdorff (2003).We however use Transparent International Corruption Perception Index. The Corruption Perception Index of Transparency International ranges from 0 (most corrupt) to 10 (least corrupt), so it is important to note on interpretation of findings that higher levels reflect lower corruption, a positive estimated coefficient for corruption reflects a negative impact on economic. The coefficient sign of corruption cannot be determined a prior. In most instances, corruption leads to economic inefficiency and loss of producer and consumer surplus, because of its effect on the allocation of funds on production, and on consumption. Most evidence in developing countries shows that gains obtained through corruption, are

unlikely to be reinvested within the country but transferred to foreign bank accounts. These transfers represent a capital leakage from the domestic economy which will impact negatively on the economic growth. Victor Dike (2003) summed up the impact of corruption when he said corruption diverts scarce public resources into private pockets, literally undermines effective governance, endangers democracy and erodes the social and moral fabric of nations. On the contrary, Leff (1964) supports the view that the introduction of competition into an otherwise uncompetitive economy can be beneficial to development because corruption brings an element of competition with its attendant pressure for efficiency to an underdeveloped economy. The author argues that bribery will be the possible enticing carrot which can provide innovators an opportunity to obtain elusive government licenses and permits, and also allow businesses needing to compete and to bypass unnecessarily cumbersome delays associated with government bureaucracy especially in developing countries. Makochekanwa (2014) and Acemogula and Verdier, (1998) find that corruption is a 'grease' which lubricates the 'squeaky wheels' of bureaucratic, rigid administration and inefficient governments particularly those of the developing world.

**Literacy (LIT):** We use adult illiteracy as a proxy for lack of education. It is measured as the percentage of people above 15 years who cannot read, write, and understand a simple statement concerning their daily activities. Models of economic growth have generally included education as a variable. Grossman (1972b) and others have argued that education influences many decisions such as a choice of job and avoidance of unhealthy habits (corruption). Mauro (2002) shows that there is a link between corruption and government expenditure on education. Education helps to generate moral values against corruption (Hauk and Saez-Marti (2001). High level of education also fosters a sense of nationalism and civic duty in the citizenry. It also raises the public's awareness of their rights and duties. The coefficient sign is indeterminate, whilst we expect corruption will be lower where populations are more educated and literate we also believe that those with a higher level of education seem to be willing to undertake white collar crimes such as bureaucratic corruption.

**Trade openness (TOPEN):** Trade openness is the ratio of imports plus exports to GDP and is used to measure trade openness and trade restrictions (see Aisedu, 2002; Gastanga *et al.,* 1998; Quattara, 2000; Sawyer and Sprinkler, 2006; Mulambo and Oshikoya, 1999). In Zimbabwe investors are likely to be marketing-seeking so less trade openness is likely to positively impact on economic growth. A probable reason for that is the hypothesis of "tariff jumping" where foreign investors seeking markets may elect to set up subsidiaries in host countries if it proves restrictive to export their products into the country (Edwards, 1990, Gastanga *et al.,* 1998; Hausmann and Fernandez-Arius, 2000; Anyanwu, 2012; Elbadawi and Mwega, 1997 and Asiedu, 2002). However, export-oriented MNES may seek to set subsidiaries in more open economies because trade restrictions are usually accompanied by market imperfections, corruption and high transaction costs. Trade openness nurtures export growth which means opening of avenues for future exportation of excess output by resource seeking MNCs (Haq, 2012).Empirical literature has different results of the impact of trade openness on FDI, the expected sign of TOPEN cannot be determined a priori. Acemoglu and Verdier (2000) point out, corruption is by and large a by-product of government interventions in the operations of free markets.

**Inflation (INF):** Inflation is used as an indicator of macroeconomic stability (Blomstrom and Kokko, 1998). In a study of 23 African countries on the impact of inflation on economic growth, Greene and Villanueva (1991) finds higher inflation having a negative effect on economic growth. Low inflation and appropriate pricing of capital and labour creates an enabling foreign direct investment climate. Whilst Zimbabwe had record inflation between 2007 and 2008, inflation has since come down to close to deflationary levels. Inflation is expected to have a negative sign indicating that a low inflation enhances economic growth. We carried out model diagnostic tests in order to improve on the robustness of the findings and avoid estimating a spurious regression; stationary tests using the Augmented Dickey Fuller (ADF) test; the existence of heteroscedasticity employing, Breusch-Pagan test; autocorrelation using Durbin -Watson (DW) test and the model specification tests using the Ramsey Reset tests.

## RESULTS AND DISCUSSION

All probability values of the Augmented Dick Fuller statistic were compared to 1%, 5% and 10% and any probability value of a predicator below these three values was considered to be stationary. As per Appendix A, inflation (INF) and Trade openness (TOPEN) were stationery at 10% level of significance level. Corruption (CORR) and foreign direct investment (FDI) were stationery at 5 % level of significance. After first differencing, Corruption (CORR) and FDI became stationery at 5% and integrated of order 1.GDP and TOPEN were differenced twice and became stationery at 10% level of significance and integrated at order 2. Literacy (LIT) and Inflation (INF) were stationery at levels. Appendix C shows multicollinearity test and indicate that all the absolute partial correlation coefficients are less than 0.8 implying that there is nonemulticollinearity of variables. We conclude therefore that all explanatory and explained variables do not move together in systematic ways and hence individual effects on the explained variable were isolated.Results of the regression model are shown in Appendix B. The coefficient of Corruption (CORR) was found to positive and statistically significant at 5%.The results suggest a negative impact of corruption on economic growth.

Even when controlling for other predicators in the model, the main result doesn't change; the coefficient of corruption maintains its significance level of 5%.The results indicate that high levels of corruption/ rent-seeking is a major determinant of economic growth in Zimbabwe. There is wide and diverse backing for this view in the literature- that corruption is detrimental to economic growth mainly via the investment channel (Tanzi 2002; Svensson 2005; Gyimah-Brempong 2002; Mauro, 1995; Murphy *et al.,* 1993; Zouhaier, 2011; Lambsdorff, 2003).Conversely, Makochekanwa (2014) who also carried a similar study in Zimbabwe finds corruptiona necessary evil for averting bureaucracy and other government regulations. The coefficient of Trade Openness was found to be positive and statistically significant at 10% level of significance.The coefficient of trade openness is 1248 implying that a unit increase in trade openness lead to an increase in economic growth by 1248 times. Domestic markets which are more open for trade and exports growth are expected to boost economic growth through increased

productivity and through efficient and unconstrained allocation of resources. The findings are consistent with empirical literature findings which show a positive correlation between trade openness and economic growth. Export-oriented multinationals are likely to set subsidiaries in more open economies since trade restrictions are channels for market imperfections, rent-seeking, and corruption. (Anyanwu, 2012; Asiedu, 2002; Nguyen, 2012; Sikwila, 2015; Edwards, 1990; Gastanga *et al.,* 1998; Muzurura, 2016).Inflation was found to be negative and statistically significant at 10% level. The results indicate that a stable macroeconomic characterised by low inflation promotes economic growth. This result agrees with earlier studies by Ajayi (2006); Anyanwu (2006, 2012) that indicates the importance of having low inflationary environment as a prerequisite to higher economic growth. FDI was found to be positive and significant at 5%.

The coefficient of FDI is 4.30 indicating that a unit increase in FDI will enhance economic growth by 430%. Foreign investors focus on countries where the size of the market is large enough and corrupt free in order to be guaranteed positive net present returns from the projects. Our empirical investigation does not confirm level of literacy (LIT) as major determinants of economic growth. The R-Squared is 0, 80. This indicate that at least 80% of the variations in economic growth can be explained by the combinations of variations in the predicators as used in the model. The Durbin-Watson statistic of 2.5 shows that there is no autocorrelation. The F-statistic probability value is 0.041657 which is less than 0.05 implying that the model is valid at 5% level of significance. Using the Breuch-Pagan-Godfrey test, the errors were found to be homoscedastic and therefore unbiased since the F-statistic probability value of 0.9215 is greater than Chi-Square probability value of 0.8332. Model stability tests were also carried out; Ramsey RESET t-statistic probability value of 0.2275 which is greater than 0.05, indicates that the model was correctly specified at 5% level of significance.

**Conclusion and policy Recommendations**

The paper investigated the nexus between corruption, investment and economic growth in Zimbabwe using ordinary least regression model. We defined corruption to include rent-seeking behaviours such as smuggling, tax evasion, kickbacks and using parallel market exchange rates. Our results indicate that corruption, trade openness, low inflation and high FDI inflows influence economic growth. We recommend that Zimbabwe should formulate and implement fiscal policies targeted at curbing the prevalence of public corruption. Complementary to these policies we further recommend that the country also adopts strategies to minimise government interference in operation of private markets as these will likely inhibit trade openness and foreign direct investment. Other measures may include stiffer penalties for corrupt activities; strengthening the legal and tax system; establishing and updating pricing standards and benchmarks for all supplies to government; monitoring huge project expenditures during execution so as to provide timely information on performance, output, and compliance with specifications and target. The ppolicy implications from this study are: Reduction of top-heavy government regulation of economic activities will inhibit bureaucratic corruption, briberies, and other forms of unfettered opportunism in Zimbabwe. In addition, political deregulation, introducing more probity into the procurement process, strengthening anti-corruption institutions, observance of the rule of law expands the opportunities for ordinary citizens to participate in governance.The social implication is that transparency will help citizens to call their rulers to account leading to better accountability, governance and economic growth. The country will be therefore be able to reform the existing rules of engagement in order to weaken the linkage between business and the political system, eradicate poverty and social inequalities which are caused by unfair wealth transfers, a result of corruption.

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## APPENDICES

### Appendix A: Results of the Unit Root Test

| Variables | t-ADF | Critical-1% | Critical-5% | Conclusion |
|---|---|---|---|---|
| DDGDP | -5.233376 | -4.582648 | -3.320969 | I(2) |
| DCORR | -3.845577* | -4.297073 | -3.212696 | I(1) |
| DDTOPEN | -13.52190** | -4.420595 | -3.259808 | I(2) |
| INF | -4.762409** | -4.057910 | -3.119910 | I(0) |
| DFDI | -5.908119* | -4.200056 | -3.175352 | I(1) |
| LIT | -4.741797 | -4.121990 | -3.144920 | 1(0) |

Source: own computation

*** implies stationary at 10%, * implies stationary at 5% significance level and I (·) shows order of integration. Eviews software was used.*

### Appendix B: regression output

Dependent Variable: DDGDP

Method: Least Squares
Date: 12/13/16 Time: 12:12
Sample (adjusted): 2000 2011
Included observations: 12 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| DCORR | 946.4274 | 372.0034 | 2.544136 | 0.0438 |
| DDTOPEN | 1248.754 | 563.9539 | 2.214284 | 0.0687 |
| DFDI | 4.309249 | 1.716502 | 2.510482 | 0.0459 |
| INF | -49.27356 | 22.98271 | -2.143941 | 0.0757 |
| LIT | -119.8455 | 126.1191 | -0.950257 | 0.3787 |
| C | 11967.08 | 12364.45 | 0.967862 | 0.3705 |
| R-squared | 0.799145 | Mean dependent var | | 16.91417 |
| Adjusted R-squared | 0.631767 | S.D. dependent var | | 629.7246 |
| S.E. of regression | 382.1309 | Akaike info criterion | | 15.03626 |
| Sum squared resid | 876144.3 | Schwarz criterion | | 15.27871 |
| Log likelihood | -84.21754 | Hannan-Quinn criter. | | 14.94649 |
| F-statistic | 4.774473 | Durbin-Watson stat | | 2.532575 |
| Prob(F-statistic) | 0.041657 | | | |

Source own computation

### APPENDIX C: Correlation matrix

| | CORR | FDI | GDP/CAPITA | GFCE | GFCF | INF | LIT | TOPEN |
|---|---|---|---|---|---|---|---|---|
| CORR | 1.00000 | | | | | | | |
| FDI | 0.320627 | 1.0000 | | | | | | |
| GDP/CAPITA | 0.222849 | 0.557748 | 1.00000 | | | | | |
| GFCE | 0.347978 | 0.178215 | 0.353640 | 1.000000 | | | | |
| CFCF | 0.170731 | 0.708487 | 0.473008 | 0.532746 | 1.000000 | | | |
| INF | -0.520628 | -0.395282 | 0.130723 | 0.090217 | -0.193089 | 1.000000 | | |
| LIT | 0.111935 | -0.055077 | -0.274625 | 0.178961 | -0.142008 | -0.404360 | 1.0000 | |
| TOPEN | -0.342863 | 0.631821 | 0.467289 | 0.023438 | 0.481909 | 0.114021 | -0.28253 | 1.0000 |

Source: Own computation

*******