



# The Determinants of Private Participation in Infrastructure in Zimbabwe

Jameson Jabangwe\*, Gift Mugano, Amanda Van Den Berg

Department of Development Studies, Nelson Mandela University, Port Elizabeth, Zimbabwe  
Email: \*jamesonjab@yahoo.co.uk, gmugano@gmail.com, amanda.vandenberg@mandela.ac.za

**How to cite this paper:** Jabangwe, J., Mugano, G. and Van Den Berg, A. (2025) The Determinants of Private Participation in Infrastructure in Zimbabwe. *Open Access Library Journal*, **12**: e13448. <https://doi.org/10.4236/oalib.1113448>

**Received:** April 16, 2025

**Accepted:** September 27, 2025

**Published:** September 30, 2025

Copyright © 2025 by author(s) and Open Access Library Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

## Abstract

The sources, tools, and methods of funding infrastructure assets must drastically change in response to the growing demand for infrastructure financing in developing nations. The same applies to Zimbabwe like other countries of the world where the attainment of the Sustainable Development Goals (SDGs) requires investment in fundamental economic and social infrastructure in addition to the funding needs of traditional infrastructure. Amongst budgetary constraints, Zimbabwe is confronted with a significant infrastructure finance gap at a time when the country aspires to become an Upper Middle Economy by 2030. However, in comparison to its neighbours, the amount of private investment in infrastructure projects in the country is extremely small. Therefore, the main motivation of the study was to investigate ways of leveraging private capital into infrastructure finance. A nested mixed method was used for this study. While the primary data was collected through semi-structured interviews, secondary data was gathered from the Reserve Bank of Zimbabwe and the World Bank's development indicators online. The results of the study highlight that macroeconomic and political stability are important ingredients for the leveraging of private capital into infrastructure investment. Our findings highlight the significance of strong legal and regulatory frameworks, as well as a stable macroeconomic and political climate in the country, all of which can encourage private sector participation in infrastructure projects.

## Subject Areas

Economics, Sociology

## Keywords

Private Participation, Infrastructure, Zimbabwe, Private Capital

## 1. Introduction

The relationship between infrastructure growth and economic development are well established. These include how infrastructure affects growth, equity, and poverty reduction as well as development outcomes such as market access, employment generation, health, and education [1]. The need for infrastructure is growing globally because of the accelerated pace of urbanisation and globalisation in emerging nations where over five million people move into cities each month [2]. The increasing demand for investments with low carbon emissions and climatic resilience to counteract the effects of climate change exacerbates this trend [3]. Global infrastructure outlook by the G20 initiative estimates that global infrastructure investments must reach US\$94 trillion by 2040 to reduce the global infrastructure deficit [4].

[5] notes that the public sector cannot own its own reduce the infrastructure deficit due to the size of the resources needed therefore, institutional investors must be attracted to fund infrastructure. [5] adds that required regulatory measures must be put in place to leverage private capital because the balance sheets of the main Multilateral Development Banks (MDBs) are unable to cover the global financial requirements for infrastructure development.

The Public Private Partnerships (PPPs) as observed by [6] enable the government, the private sector, and the donor community to have a complementary approach to development solutions, during times when funding from traditional sources for development is under strain. The projection of the [7] revealed that private sector involvement in 263 projects in low-and middle-income nations equaled US\$91.7 billion. This was an improvement of over US\$74.5 billion spent on 235 projects in 2021.

[8] highlights that the recent increase in private involvement in infrastructure provision in Africa can be attributed to some efforts that attempt to increase private finance. This involvement aimed at raising private finance has been responsible for the recent surge in private engagement in infrastructure provision in Africa. To encourage the private sector to finance the continent's infrastructure, the African Development Bank (AfDB) established the "Private Sector Department", which has pledged US\$1.7 billion. Notable projects that have benefitted from the AfDB's initiative include the Nacala Rail and Port Project, the improvement of air travel in Ghana, increased access to water in Rwanda, and various power augmentation and satellite communications across the continent.

Zimbabwe needs to mobilise resources to rehabilitate the decay in infrastructure that has occurred after years of neglect in the infrastructure linked to basic services, expand, and adapt irrigation infrastructure to the needs of the small-holder sector, and expand and upgrade power generation, transport and ICT infrastructure to support the needs of medium- and longer-term growth. The country requires approximately US\$33bn between 2012 and 2032. This implies the country requires roughly US\$1.65bn each year to address the infrastructure gap. However, if Zimbabwe's growth trajectory is bench-marked against a middle-in-

come country, the country would be expected to outlay 20 percent more than the projected spending of US\$40bn over the same period [9].

According to [10], the government of Zimbabwe bears the primary responsibility for infrastructure provision; nevertheless, there have been proposals to shift the financing role from government to the private sector. The role of the private sector in financing infrastructure projects has been increasingly important mostly in developed nations. However, it is challenging to attract private participation in the provision of infrastructure, especially in Zimbabwe. The essential problem of developing countries in attracting private investors in the infrastructure sector results from their poor sovereign creditworthiness, underdevelopment of financial markets, and high economic risk inherent in infrastructure projects [10]. These challenges must be overcome if developing nations, such as Zimbabwe, are to mobilise private sector investment.

## 2. Literature Review

The factors that influence the private sector's involvement in infrastructure funding have been the subject of extensive empirical research. Most of the theoretical literature identifies the primary drivers of private infrastructure investment as being GDP, interest rates, inflation, exchange rates, foreign direct investment, macroeconomic and political stability, institutional quality, adherence to the rule of law, and public investment. Developing countries need to accelerate investment in infrastructure and would need assistance from the private sector to reduce the infrastructure gap. The private sector is expected not only to bring capital but also innovation, execution efficiency, management expertise, and self-sustainability of infrastructure facilities, along with improved quality of services. In return, the public sector is expected to provide a conducive business environment, access to credit, as well as investor protection [11].

[12] examines the determinants of PPI in low-and middle-income countries (LMICs) for the years from 1995-2008. The author identified openness to trade, access to credit, large populations, as well as fiscal freedom and observance of the rule of law to be positively associated with private sector investment. [12] found that private-sector investment is inversely correlated with inflation. Similarly, [13] investigated the factors that influence private investment in Nigeria. To check for the presence of a long-run relationship in Nigeria, the researcher used the Ordinary Least Square (OLS) method. The findings indicated that the economy's aggregate demand (GDP), real interest rate, real exchange rate, and inflation rate, along with credit to the private sector, have all failed to effectively lead to or raise private investment in Nigeria, as all displayed signs contrary to expectations.

Using data from 2000 to 2011, [14] conducted cross-country research in 48 Islamic developing countries as predictors of private sector participation in infrastructure. The authors argue that the risk, market conditions, and institutional characteristics of the nation are important determinants of private involvement in funding infrastructure in Islamic nations. Also, market conditions such as pop-

ulation, income, purchasing power, and institutional quality are strongly related to private-sector investment. However, the country's risk is negatively related to private sector participation in infrastructure [14].

[15] investigated the factors influencing private sector involvement in energy projects in emerging nations and noted that improved institutional and economic settings have a favourable effect on PPI. Additionally, MDBs have a beneficial impact on private-sector energy project investments, according to the report. [16] studied the climate risks affecting private participation in infrastructure projects in developing countries. Research findings suggest that higher climate risk is associated with a higher amount of private investments in infrastructure.

According to [4], three levers are necessary to develop robust, predictable projects that can attract private investment into infrastructure. These three levers are financing, risk management, and revenue. Revenue levers are the fundamental source of project funding and are defined by five potential revenue sources, which are; tax-based, user-based, ancillary revenue, and value capture, as well as data. Data-defined revenue, collected from the monetisation of data generated by an infrastructure asset, is the least mature revenue lever. The risk management lever manages the risk-reward balance of the project structure. It is a source of certainty for investors, defined contractually and in financial instruments. Financing levers provide the liquidity needed to initiate the project and are defined across a range of primary and secondary sources. **Table 1** presents the typology of the three levers essential in attracting PPI.

**Table 1.** Three levers critical in attracting private capital into infrastructure.

| Revenue Levers     | Risk Management Levers           | Primary Financing Levers    |                             | Secondary Financing Levers |
|--------------------|----------------------------------|-----------------------------|-----------------------------|----------------------------|
|                    |                                  | Direct                      | Listed                      | Indirect                   |
| Tax-based          | Profit Sharing Agreement         | Commercial Bank Loan        | Securitized Debt            | MDB Debt Fund              |
| User-based         | Political/Performance Guarantees | MDB Debt                    | Project Bonds               |                            |
| Ancillary revenues | Volume Guarantees                | Government Debt             | Government Bonds            | Private Debt Fund          |
| Value Capture      | Financial Guarantees             | Direct Equity Operating     | Listed Security Investment  | Private Equity Investments |
| Data               | Hedging                          | Direct Equity Institutional | Listed Trust Investment     |                            |
|                    | Insurance                        | Government Equity           | Listed Infrastructure Funds | Asset Platform Investment  |

Source: Hub, 2021.

### 3. Research Methodology

The purpose of the study was to analyse the determinants of private participation in infrastructure in Zimbabwe. The study adopted a Nested Mixed Methods Approach, which accorded both the qualitative and quantitative approaches equal priority, while at the same time, the two approaches had an independent level of interaction [17]. Semi-structured interviews were conducted with a range of stakeholders such as financial institutions, government representatives, contractors, private sector participants, and infrastructure finance specialists to gather data for the qualitative study. The study interviewed 24 participants from the identified institutions, and these were selected through purposive and snowball sampling.

The variables for quantitative analysis included credit to the private sector, Gross Domestic Product (GDP) per capita, foreign direct investment (FDI), public sector investment and real interest rates. Data about some variables in Zimbabwe were not available between 2015 and 2021 hence the decision to have 2015 as the cut-off year. Data on interest rates were gathered from the Reserve Bank of Zimbabwe (RBZ) and data on access to credit, GDP, public investment and FDI were gathered from the World Bank development indicators online. Notwithstanding the Zimbabwean economy having witnessed instabilities between 2000 and 2008, the choice of the data sources assumes the RBZ, and the World Bank provide relevant and reliable data that are accurate. [13] employed the ordinary least squares (OLS) econometric model for the quantitative study after adopting a modified accelerator model for Nigeria and estimating it using OLS. Technique was used for this study since Nigeria is a developing nation, much like Zimbabwe [13]. In specifying his model, [13] made PPI a function of five explanatory variables that are: real GDP, real interest rates, real exchange rate, inflation, and credit to the private sector. [13] specified his econometric model as follows:

$$PPIV = \beta_0 + \beta_1RGDP + \beta_2RIR + \beta_3RER + \beta_4INFR + \beta_5CRPS + \mu t \quad (1)$$

where:

PPI = Private Participation in Infrastructure (change in capital stock);

RGDP = Real Gross Domestic Product (a proxy for aggregate demand);

RIR = Real Interest Rate;

RER = Real Exchange Rate;

INFR = Inflation Rate;

CRPS = Credit to Private Sector.

$\beta_0$  = the constant intercept;

$\beta_1 \dots \beta_5$  = coefficients of explanatory variables (RGDP, RIR, RER, INFR and CRPS respectively);

$\mu t$  = the error term;

$t$  = time.

The study dropped real exchange rates (RER) and inflation (INFL) used by [13], because data on these variables are difficult to manipulate, considering the volatilities in inflation and exchange rate experienced by Zimbabwe in the past two

decades.

This study deliberately excluded real exchange rate and inflation from the final econometric model based on both empirical constraints and theoretical considerations. Zimbabwe's macroeconomic history is marked by prolonged episodes of hyperinflation, frequent exchange rate regime changes, and currency re-denominations, particularly between 2000 and 2020. These disruptions introduce severe volatility and structural breaks that compromise the statistical reliability and interpretability of these series in time-series models. Although techniques such as GARCH models, lag structures, or structural break dummies could theoretically address these issues, their application is constrained by limited data availability, inconsistent time-series continuity, and the relatively small sample size in this study.

More importantly, from a theoretical standpoint, the Fisher Effect suggests that nominal interest rates adjust to reflect expected inflation. Therefore, the use of real interest rates in the model already accounts for the inflation-adjusted cost of capital, reducing the marginal benefit of including inflation as a separate regressor. Including both real interest rates and inflation would risk introducing multicollinearity and redundancy in explanatory variables, which could undermine the robustness of the model.

Similarly, the exchange rate effect is indirectly captured through the inclusion of foreign direct investment (FDI). Exchange rate volatility is a key determinant of FDI flows, as investors respond to currency risk and the stability of returns in host economies. By including FDI—an aggregate outcome shaped in part by exchange rate conditions—the model mitigates potential omitted variable bias without directly including exchange rate data that are statistically unstable in the Zimbabwean context.

In light of these considerations, the study focused on a parsimonious model using empirically reliable and theoretically sound variables: public investment, credit to the private sector, FDI, GDP, and real interest rates. Future research could incorporate more advanced modelling techniques to directly capture the role of inflation and exchange rate fluctuations when longer, higher-frequency, and better-harmonized datasets become available. These variables are replaced by PUIV and FDIV, with data readily available. In that regard, we specified our econometric model as follows:

$$PPI = \beta_0 + \beta_1 PUI + \beta_2 ACP + \beta_3 GDP + \beta_4 FDI + \beta_5 INTR + \mu t \quad (2)$$

where:

PPI = private participation in infrastructure as a percentage of GDP;

PUI = public investment as a percentage of GDP;

ACP = access to credit by the private sector as a percentage of GDP;

GDP = gross domestic product growth rate;

FDI = foreign direct investment;

INTR = interest rate (commercial lending rates);

$\mu t$  = stochastic or random error term (with usual properties of zero mean and

non-serial correlation) representing any other determinants of PPI not captured in the specified model because they are considered insignificant;

$t$  = time;

$\beta_0$  = the constant intercept;

$\beta_1 \dots \beta_5$  = coefficients of the explanatory variables.

The study conducted several tests to make sure the model was dependable and appropriate for its intended use. The chosen model's goodness of fit was evaluated using the Ramsey RESET test. To test for heteroskedasticity, however, the Breusch-Pagan/Cook-Weisberg test was used. The findings demonstrated that the model is accurately defined and that no variables have been left out. Furthermore, the results showed the variances of the error term were constant and there was no heteroskedasticity. In that regard, the study concluded that the results of the model are reliable and can be used to estimate the determinants of private participation in infrastructure in Zimbabwe. The quantitative data was analysed using Stata.

## 4. Presentation and Discussion of Findings

### 4.1. Qualitative Analysis

This section presented the findings of the data analysis on the variables influencing the private sector's involvement in infrastructure investment. The question on the factors that determine PPI was inquired to ascertain participant perceptions of what makes a good investment climate. The study wanted to establish the main reasons why investors would choose to invest in country A at the expense of country B. The general perception among most of the participants is political stability (16 percent), a robust regulatory environment (19 percent), macroeconomic stability (16 percent), and availability of capital (13 percent), along with project returns (6 percent), supportive government policies (6 percent) and respect for contracts (16 percent), are key in determining where investors deploy their capital.

The [18] prepared a project preparation guide indicating the critical factors that motivate the private sector to participate in infrastructure development in African countries. The highlighted critical factors include a favourable legal and regulatory environment, project viability, political commitment and support, as well as a high level of expertise by government officials in managing PPP projects. In line with World Bank findings, a robust regulatory and legal framework was ranked first by participants, with an approval rating of 19 percent. Private investors examine whether an existing legal framework protects their rights and offers a suitable mechanism for resolving contract disputes considering the long gestation of PPP projects [19]. Investors will be more inclined to invest their capital if the existing legal system clearly outlines their rights and indicates how disputes will be resolved [18].

#### 4.1.1. Regulatory Framework

To attract private capital, developing countries must develop robust regulatory

frameworks for PPPs. A clear legal framework guarantees investors' security and protects them from potential expropriation [20]. A transparent tendering process, a tax regime for private investors, contract awarding procedures, and construction management processes must be included in a well-structured legislative framework [21].

A detailed description of the mechanism for resolving contractual disputes and legal proceedings must also be included when developing the regulatory framework. South Africa is one of the few developing countries with a well-developed legislative framework for PPPs. Because of this, the country has been able to successfully implement PPP projects, such as the Inkosi Albert Luthuli Central Hospital, as well as attracting both domestic and international investors. [22] argue that the N4 Toll Road PPP project's successful implementation emanated from the project's clear contractual agreement and a robust PPP legislative framework. This conforms with [23], who argues that creating a conducive regulatory environment is critical for mobilising long-term finance for infrastructure development.

[24] supports the existence of a robust regulatory environment to attract PPI. According to Macri, there may be a need to examine the structural barriers to investment, including gaps in existing regulatory frameworks, to mobilise sufficient capital from institutional investors with a long-term investment horizon [24].

#### **4.1.2. Stable Macroeconomic Environment**

A second-ranked factor is a stable economic environment, with 16 percent of the participants supporting the importance of this factor in harnessing private capital. This is consistent with [25], who argue that macroeconomic indicators determine the expected project returns for PPP projects. Realistic projections can only be assured in a stable macroeconomic environment [22]. In countries where the macroeconomic variables such as inflation, interest and exchange rates are stable, the private sector will thrive. This is consistent with the findings of quantitative analysis, where macroeconomic factors were found key in attracting PPI.

#### **4.1.3. Political Stability**

Another factor, ranked second by participants with a rating of 16 percent, is political stability. The finding is consistent with those of other researchers, such as [19] who found that political stability is important in the growth of PPP transactions in developed markets. The aspect of political stability is crucial in developing countries, considering the unstable political and electoral systems in these countries. Many developing countries have very brittle political and electoral systems thereby hindering investments in PPPs. For example, [26] reported that the unstable political condition in Thailand contributed to the failure of the Bangkok Elevated Transport System.

Political stability denotes the "absence of political violence, governmental longevity and the existence of a legitimate constitutional regime" [27]. When a coun-

try upholds legitimacy there will be an orderly and peaceful process of transferring political power from one political party to another and in that regard political stability is demonstrated [28]. [29] contends that a country with a stable political system is more likely to attract PPP investors because political stability fosters a favourable investment climate for private investments and, more importantly, because private investors are guaranteed the security of their assets. Private investors are frequently driven to make investments in economies with sufficient political stability. Private investors will be willing to invest in PPP projects in an environment where the host countries can consistently guarantee a stable political climate. Political leaders should therefore take action to thwart any potential catalyst for political violence.

Political commitment as a factor was also ranked second with a rating of 16 percent. On the contrary, [30] study highlights the low significance of political support as a factor in the growth of the UK PFI/PPP market. This is because successive UK governments have consistently supported the PPP/PFI model since the early 1990s. The PPP model is frequently promoted as a public policy that is directly related to the commitment and intent of political leaders in the host country [30]. In addition to drawing in investors, political support and acceptance of PPPs tend to lower the political risks inherent in PPP projects [31].

When a PPP policy does not have political backing, private investors are not motivated to invest. In general, certain PPP projects that have been implemented in developing countries frequently face fierce political resistance from preparation to operation, presumably because of accusations of corruption and a lack of transparency [32]. Furthermore, negative signals from opposition political parties may discourage private-sector investment. Therefore, incumbent governments in developing countries must employ appropriate techniques to secure sufficient support from opposition parties for the successful execution of PPP projects. The needless cancellation of PPP contracts when a different political party is in power will be avoided when adequate political support is obtained.

#### **4.1.4. Project Returns and Government Support**

Other factors considered important by participants included project returns (six percent) and government support (six percent). Investors are drawn to PPP projects because they expect to realise enough cash flows to cover project costs [33]. PPP projects must be financially sustainable because the private investor's primary goal is always to maximize profit [34]. Government guarantees were cited by [30] as essential for the development of PPPs. [29] emphasized the importance of government guarantees in enabling private investors to manage certain risks effectively as well as boosting their confidence.

It is evident from the comments that most participants agree that a robust regulatory environment, as well as political and macroeconomic stability, are critical in attracting PPI in infrastructure projects. Perhaps this speaks to the greater weight both political and macroeconomic risks carry in influencing project profitability and, in turn, investment decisions in Zimbabwe. Participants blamed the

poor regulatory environment and unstable political and macroeconomic environment as working against PPI in Zimbabwe. This is consistent with findings from the quantitative analysis, which indicated macroeconomic factors, such as interest rate and FDI, are important determinants of PPI. It is, therefore, sufficient to conclude that macroeconomic stability is important, should the government wish to attract the private sector to invest in infrastructure.

## 4.2. Econometric Analysis

### Regression Results Presentation

**Table 2** presents the results of the determinants of private sector participation in infrastructure.

**Table 2.** The ordinary least squares regression model.

| Explanatory Variable         | Coefficient | Standard Error | t-statistic | p-value |
|------------------------------|-------------|----------------|-------------|---------|
| Trend                        | -0.0037992  | 0.000857       | -4.43       | 0.000   |
| Credit to the private sector | 0.0598845   | 0.052708       | 1.14        | 0.265   |
| Real interest rate           | -0.0000848  | 0.0000377      | -2.25       | 0.032   |
| Public sector investment     | -0.5216086  | 0.5871774      | -0.89       | 0.382   |
| FDI                          | 0.0123514   | 0.0060069      | 2.06        | 0.049   |
| GDP per capita               | 0.117753    | 0.1185047      | 0.99        | 0.329   |
| _cons                        | 0.1843962   | 0.0283881      | 6.50        | 0.000   |

Dependent Variable: Private Sector Investment; Number of observations = 36.

R-Squared = 0.5784; Adjusted R-Squared = 0.4912; F-Statistic = 6.63; Prob > F = 0.0002

The results of the econometric analysis are discussed in sections 1), 2) and 3).

#### 1) Real Interest Rates

The prior expectation of the effect of real interest rates on private sector investment was either positive or negative. However, regression results have shown there is a negative relationship between private-sector investment and real interest in the country. This is shown by the coefficient of real interest rate (which is significant at a five percent level of significance) is negative. The negative relationship between interest rates and private participation in infrastructure correctly captures the situation in Zimbabwe. Due to many episodes of high inflation, the central bank has always responded by raising interest rates and these high interest rates have discouraged borrowing and investment in infrastructure. For instance, in December 2023 the central bank increased the borrowing rate to 130% and accordingly resulted in Zimbabwe having the highest interest rates in Africa and only second globally to Argentina, where the official rate was 133%.

The results confirm the Neoclassical view, which suggests a negative sign on the relationship between private investment and real interest rates. The results con-

form with previous studies that support the Neo-classical view. [35] sought to establish the relationship between real interest rates and investment in real estate in China. The study established interest rates were inversely related to investments in housing. This is because high interest rates are a cost to the firm, hence, private investors will shy away from investing when interest rates are high. Furthermore, [36] studied the relationship between interest rates and investment in SA. The results of the study showed a negative relationship between interest rates and investment.

## 2) Foreign Direct Investment

The prior expectation was that the effect of FDI on private-sector investment was either positive or negative. Regression results have shown FDI has a positive impact on private-sector investment in the country, that is, as FDI increases, we expect private-sector investment to increase. The data points to a unit increase in FDI leading to a 1.2 unit increase in private sector investments. This shows that for the country to improve private sector investment, it needs to attract more FDI. This assertion is statistically significant at a five percent level of significance. [37] pointed out that the FDI net inflows in Zimbabwe were very low from 1980 to 1990, because of the policy environment, which was unfavourable to foreign investors. These policies included the excessively long process required to approve foreign investors' proposals, ownership restrictions, which required at least 51% local participation in some sectors, and the restrictive repatriation of profits policy. FDI flows to Zimbabwe are far below the country's potential. According to the UNCTAD's World Investment Report 2023, FDI inflows amounted to USD 342 million in 2022, up by 36.6% on the year but still significantly below the pre-COVID crisis level (USD 745 million in 2018). FDI is mainly directed towards the mining sector (diamonds, gold, nickel, platinum), infrastructure, the wood industry, health care, water and sanitation, financial services, tourism, manufacturing and agriculture.

The government should promote legal and regulatory reforms that encourage long-term investment, including greater policy certainty, to strengthen the environment for FDI. When it comes to the political and legal environments that affect specific infrastructure projects, investors require political stability and regulatory clarity.

The results confirm the economic literature, drawing on the endogenous growth theory that suggests FDI and private investment are positively correlated through the crowding-in effect. Therefore, the findings of this study corroborate other previous studies, whose results confirm the crowding-in hypothesis. Studies with the same results include [38] in 69 developing countries and [39] in China. [40] highlight the crowding-in effect is based on the well-known fact that Multi-national Companies (MNCs) bring complex and cutting-edge technologies from their parent offices with them to remain competitive. More technology will be introduced into the local market due to increased competition. According to the argument made by [41], foreign firms will increase the number of rivals and in-

roduce new strategies for them to be competitive.

### 3) Credit to the private sector

The prior expectation was that the effect of bank credit on private-sector investment was positive. Regression results have revealed a positive and statistically significant relationship between bank credit to the private sector and private investment in infrastructure. Thus, an increase in bank lending to the private sector is expected to significantly increase private sector investment. The average value for domestic credit to the private sector in Zimbabwe during the period 1979-2020 was 17.87 percent with a minimum of 0 percent in 1980 and a maximum of 84.81 percent in 2002. The latest value from 2020 is 6.45 percent. For comparison, the world average in 2020 based on 151 countries is 61.27 percent. This therefore shows that access to credit has been on the low side in Zimbabwe and this has had the effect of reducing investment in infrastructure in the country.

There is, therefore, a need for government support to the banks in terms of policies that would encourage lending to the private sector. The results conform to the supply-leading hypothesis. According to this hypothesis, first put forth by Schumpeter in 1911, financial institutions serve as conduits for increasing an economy's level of output. [42], and [43], are further notable proponents of the supply-leading hypothesis; all defended financial development as having a favourable impact on economic expansion.

The findings are consistent with results from the qualitative enquiry, where it was determined macroeconomic stability and supportive government policies were critical in attracting private capital into infrastructure.

## 5. Conclusions and Recommendations

Findings from econometric analysis seem to suggest that FDI, credit to the private sector and real interest rates are key determinants of PPI while findings from qualitative enquiry revealed that the political, macroeconomic and regulatory environment were rated as the foremost critical determinants of private sector investment. For the past decade, the country has continued to witness increased levels of macroeconomic and political instabilities, thereby diminishing the chances of mobilising private sector capital. Based on the above findings, the study, therefore, concludes the country will not attract significant levels of private sector capital should the current volatile political and macroeconomic environments persist. Macroeconomic and political stability are important ingredients for the leveraging of private capital into infrastructure investment as well as providing a more conducive investment environment which ensures that investors realise a return from their investments.

The authors therefore recommend that the government should enact robust legal and regulatory frameworks, and spelt out investment policies, with the government ensuring the policies are implemented and there are no policy inconsistencies and reversals. Furthermore, the government should work towards improving both the political and macroeconomic environment through respect for hu-

man rights and the rule of law, addressing the exchange rate challenges and investment policies.

## Conflicts of Interest

The authors declare no conflicts of interest.

## References

- [1] Chakamera, C. and Alagidede, P. (2018) The Nexus between Infrastructure (Quantity and Quality) and Economic Growth in Sub Saharan Africa. *International Review of Applied Economics*, **32**, 641-672. <https://doi.org/10.1080/02692171.2017.1355356>
- [2] Echendu, A.J. and Okafor, P.C.C. (2021) Smart City Technology: A Potential Solution to Africa's Growing Population and Rapid Urbanization? *Development Studies Research*, **8**, 82-93. <https://doi.org/10.1080/21665095.2021.1894963>
- [3] Kyriakopoulos, G.L. and Sebos, I. (2023) Enhancing Climate Neutrality and Resilience through Coordinated Climate Action: Review of the Synergies between Mitigation and Adaptation Actions. *Climate*, **11**, 1-27. <https://doi.org/10.3390/cli11050105>
- [4] Hub, G.I. (2020) PPP Risk Allocation Tool 2019 Edition-Transport Sydney Global Infrastructure Hub. <https://www.github.org/resources/publications/ppp-risk-allocation-tool-2019-edition/>
- [5] Matisoff, A. (2022) Multilateralism with Chinese Characteristics. The Emergence of the Asian Infrastructure Investment Bank and Its Place in the International Economic Order. University of California, Los Angeles.
- [6] Batjargal, T. and Zhang, M. (2022) Review on the Public-Private Partnership. *Management Studies*, **10**, 1-11. <https://doi.org/10.17265/2328-2185/2022.01.001>
- [7] World Bank (2022) Private Participation in Infrastructure. 2022 Annual Report. World Bank Publications.
- [8] Dealogic (2015) Project Finance Review.
- [9] AfDB (2021) 2021 African Development Bank Group Annual Report.
- [10] Chilunjika, A. (2023) Public Private Partnerships (PPPs), Road Tolling and Highway Infrastructure Investment in Zimbabwe. *International Journal of Research in Business and Social Science*, **12**, 575-584. <https://doi.org/10.20525/ijrbs.v12i3.2436>
- [11] Cicchiello, A.F. (2019) Building an Entrepreneurial Ecosystem Based on Crowdfunding in Europe: The Role of Public Policy. *Journal of Entrepreneurship and Public Policy*, **8**, 297-318. <https://doi.org/10.1108/jep-05-2019-0037>
- [12] Mengistu, T. (2013) Determinants of Private Participation in Infrastructure in Low and Middle Income Countries (LMICs). Pardee RAND Graduate School.
- [13] Ayeni, R.K. (2014) Macroeconomic Determinants of Private Sector Investment—An ARDL Approach: Evidence from Nigeria. *Global Advanced Research Journal of Management and Business Studies*, **3**, 82-89.
- [14] Kasri, R.A. and Wibowo, F.A. (2015) Determinants of Public-Private Partnerships in Infrastructure Provision: Evidence from Muslim Developing Countries. *Journal of Economic Cooperation & Development*, **36**, 1-34.
- [15] Fleta-Asín, J. and Muñoz, F. (2021) Renewable Energy Public-Private Partnerships in Developing Countries: Determinants of Private Investment. *Sustainable Development*, **29**, 653-670. <https://doi.org/10.1002/sd.2165>

- [16] Basílio, M.S. (2022) Is Climate Risk Affecting Private Participation in Infrastructure Projects? Empirical Evidence from Developing Countries. *European Journal of Applied Business and Management*, 31-50.
- [17] Halcomb, E.J. and Hickman, L. (2015) Mixed Methods Research. *Nursing Standard*, **29**, 41-47. <https://doi.org/10.7748/ns.29.32.41.e8858>
- [18] World Bank (2009) Infrastructure Consortium for Africa (ICA) and PPIAF, “Attracting Investors to African Public-Private Partnership: A Project Preparation Guide”, World Bank Publications.
- [19] Cheung, Y.W., De Haan, J., Qian, X. and Yu, S. (2012) China’s Outward Direct Investment in Africa. *Review of International Economics*, **20**, 201-220. <https://doi.org/10.1111/j.1467-9396.2012.01017.x>
- [20] Pongsiri, N. (2002) Regulation and Public-Private Partnerships. *International Journal of Public Sector Management*, **15**, 487-495. <https://doi.org/10.1108/09513550210439634>
- [21] IMF (2010) Reserve Accumulation and International Monetary Stability. *Policy Papers*, **2010**, 35. <https://doi.org/10.5089/9781498337557.007>
- [22] Osei-Kyei, R. and Chan, A.P.C. (2015) Review of Studies on the Critical Success Factors for Public-Private Partnership (PPP) Projects from 1990 to 2013. *International Journal of Project Management*, **33**, 1335-1346. <https://doi.org/10.1016/j.ijproman.2015.02.008>
- [23] Jobst, A.A. (2018) Credit Risk Dynamics of Infrastructure Investment: Considerations for Financial Regulators. Policy Research Working Paper 8373. World Bank Working Group.
- [24] Macri, M. (2018) Building Consensus for Fair and Sustainable Development. <https://www.globalgovernanceproject.org/building-consensus-for-fair-and-sustainable-development/mauricio-macri/>
- [25] Chan, A.P.C., Lam, P.T.I., Chan, D.W.M., Cheung, E. and Ke, Y. (2010) Critical Success Factors for PPPs in Infrastructure Developments: Chinese Perspective. *Journal of Construction Engineering and Management*, **136**, 484-494. [https://doi.org/10.1061/\(asce\)co.1943-7862.0000152](https://doi.org/10.1061/(asce)co.1943-7862.0000152)
- [26] Tam, C.M. (1999) Build-Operate-Transfer Model for Infrastructure Developments in Asia: Reasons for Successes and Failures. *International Journal of Project Management*, **17**, 377-382. [https://doi.org/10.1016/s0263-7863\(98\)00061-1](https://doi.org/10.1016/s0263-7863(98)00061-1)
- [27] Hurwitz, L. (1973) Contemporary Approaches to Political Stability. *Comparative Politics*, **5**, 449-463. <https://doi.org/10.2307/421273>
- [28] Iheduru, O. (2001) Agyeman Attah-Poku. African Ethnicity: History, Conflict Management, Resolution and Prevention. *Journal of Asian and African Studies*, **36**, 239-241.
- [29] Zhang, X.Q. (2005) Critical Success Factors for Public-private Partnerships in Infrastructure Development. *Journal of Construction Engineering and Management*, **131**, 3-14. [https://doi.org/10.1061/\(asce\)0733-9364\(2005\)131:1\(3\)](https://doi.org/10.1061/(asce)0733-9364(2005)131:1(3))
- [30] Li, B., Akintoye, A., Edwards, P.J. and Hardcastle, C. (2005) Critical Success Factors for PPP/PFI Projects in the UK Construction Industry. *Construction Management and Economics*, **23**, 459-471. <https://doi.org/10.1080/01446190500041537>
- [31] Ke, Y., Wang, S. and Chan, A. (2012) Risk Management Practice in China’s Public-Private Partnership Projects. *Journal of Civil Engineering and Management*, **18**, 675-684. <https://doi.org/10.3846/13923730.2012.723380>

- [32] Demuijnck, G. and Ngnodjom, H. (2011) Public-Private Partnerships and Corruption in Developing Countries. *Business and Professional Ethics Journal*, **30**, 253-268. <https://doi.org/10.5840/bpej2011303/412>
- [33] Ng, S.T., Wong, Y.M.W. and Wong, J.M.W. (2012) Factors Influencing the Success of PPP at Feasibility Stage—A Tripartite Comparison Study in Hong Kong SAR. *Habitat International*, **36**, 423-432. <https://doi.org/10.1016/j.habitatint.2012.02.002>
- [34] Mladenovic, G., Vajdic, N., Wüdsch, B. and Temeljotov-Salaj, A. (2013) Use of Key Performance Indicators for PPP Transport Projects to Meet Stakeholders' Performance Objectives. *Built Environment Project and Asset Management*, **3**, 228-249. <https://doi.org/10.1108/bepam-05-2012-0026>
- [35] Xu, T. (2017) The Relationship between Interest Rates, Income, GDP Growth and House Prices. *Research in Economics and Management*, **2**, 30-37. <https://doi.org/10.22158/rem.v2n1p30>
- [36] Xaba, N. (2018) The Impact of Interest Rates on Savings and Investments in South Africa. Master's Degree, University of Witwatersrand.
- [37] Gwenhamo, F. (2011) Foreign Direct Investment in Zimbabwe: The Role of Institutional and Macroeconomic Factors. *South African Journal of Economics*, **79**, 211-223. <https://doi.org/10.1111/j.1813-6982.2011.01283.x>
- [38] Borensztein, E., De Gregorio, J. and Lee, J. (1998) How Does Foreign Direct Investment Affect Economic Growth? *Journal of International Economics*, **45**, 115-135. [https://doi.org/10.1016/s0022-1996\(97\)00033-0](https://doi.org/10.1016/s0022-1996(97)00033-0)
- [39] Tang, L. and Shen, Q. (2013) Factors Affecting Effectiveness and Efficiency of Analyzing Stakeholders' Needs at the Briefing Stage of Public Private Partnership Projects. *International Journal of Project Management*, **31**, 513-521. <https://doi.org/10.1016/j.ijproman.2012.10.010>
- [40] Wang, J. and Blomström, M. (1992) Foreign Investment and Technology Transfer. *European Economic Review*, **36**, 137-155. [https://doi.org/10.1016/0014-2921\(92\)90021-n](https://doi.org/10.1016/0014-2921(92)90021-n)
- [41] Driffield, N. and Love, J.H. (2003) Foreign Direct Investment, Technology Sourcing and Reverse Spillovers. *The Manchester School*, **71**, 659-672. <https://doi.org/10.1046/j.1467-9957.2003.00372.x>
- [42] Gurley, J.G. and Shaw, E.S. (1967) Financial Structure and Economic Development. *Economic Development and Cultural Change*, **15**, 257-268. <https://doi.org/10.1086/450226>
- [43] McKinnon, R.I. (2010) Money and Capital in Economic Development. Rowman & Littlefield Publishers. <https://doi.org/10.5771/9780815718499>