

Macroeconomics Indicator, Institutional Quality, and Public Private Partnership: A Case of Indonesia

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Abstract

Objective: This study aims to investigate the effect of macroeconomic conditions (inflation and GDP growth) and institutional quality (control of corruption, stability politics, and voice and accountability) on private participation in PPP infrastructure projects in Indonesia as proxied by a total investment of PPP project.

Design/Methods/Approach: This study utilizes annual data of Indonesia's country-level variables from 2003 to 2019. The data sources are obtained from the World Bank Database (WGI, WDI, and PPI). In addition, this study employs regression analysis to test the hypothesis.

Findings: The results show that inflation, GDP growth, and stability politic have no significant effect on the total investment of the PPP in Indonesia. Meanwhile, control of corruption has a significant positive effect on the total investment of PPP, and voice and accountability have a significant negative effect on the total investment of PPP projects in Indonesia.

Originality: This study differs from previous research since variables such as inflation, GDP growth, political stability, corruption control, voice, and accountability have never been used in the Indonesian context.

Practical/Policy implication (optional): These findings are likely to imply government to improve corruption control so that private participation in PPP projects increases and increasingly involves citizens' participation in PPP projects.

Keywords: Infrastructure, Institutional, Public Private Partnership, Private Participation

JEL Classification: H41, H42



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I. Introduction

One of the important factors in achieving advanced and equitable economic growth is the provision of adequate infrastructure (Démurger, 2001; Handayani & Surachman, 2017; Wibowo & Alfen, 2014). In the National Medium-Term Development Plan (RPJMN) 2020-2024, infrastructure development is a national priority to create a competitive nation. However, the allocated infrastructure budget cannot meet the relatively large infrastructure needs or only covers about 37% (Bappenas, 2020). Therefore, the government must find alternative financing to fill the infrastructure funding gap.

One of the infrastructure financing patterns developed by the government involves the private sector or business entities through the Government and Business Entity Cooperation (PPP) scheme. The government intensively pushes the PPP scheme in line with the infrastructure funding paradigm that prioritizes creative financing schemes rather than the APBN/APBD (Bappenas, 2020). The PPP scheme with the concept of the part (hybrid) or all project procurement contracted to the private sector has become a global trend for governments in many countries (Sclar, 2015). Some scholars agree that the high cost of public debt, the limited public budget, and the private sector's skills are the reasons for implementing the PPP scheme in a country (Ke et al., 2009). Compared to conventional procurement methods, PPP schemes can overcome inefficiency problems (Ye et al., 2018). This is because PPP is managed by emphasizing cost management, innovation, life cycle cost management, and risk management to increase the value for money (Zhang et al., 2015).

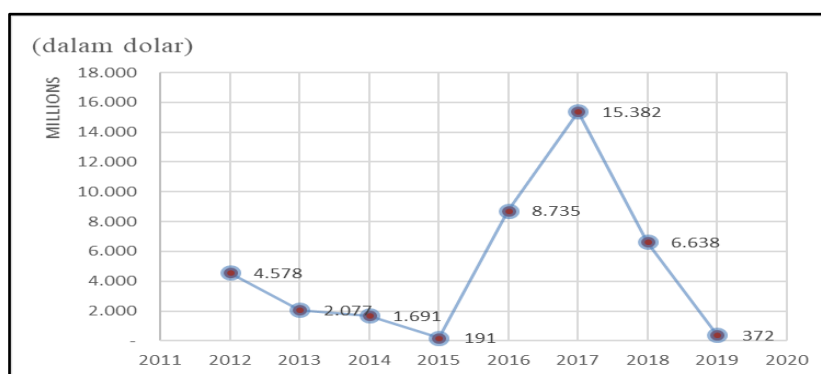
However, the number of reported PPP project problems has also increased. Compared to developed countries, developing countries have found it difficult to attract the private sector to PPPs over the past few years (Chan, 2017; Wang et al., 2019). During the tender period, the risk of project failure occurs because there are no applicants or applicants who do not fulfill, so a re-tender must be carried out.

Table 1. Number of ppp infrastructure projects in indonesia

Status	2010	2011	2012	2013	2015	2017	2018	2019	2020
Already tendered	4	5	12	21	22	17	8	9	15
Ready to Offer	1	13	3	0	6	1	7	1	14
Prospective/ Under Preparation	26	21	26	14	8	21	21	19	37
Potential	73	45	29	13	24				
Total	104	84	70	48	60	39	36	29	66

Source: Bappenas (2020)

Meanwhile, based on the 2019 PPP Book data shown in table 1, the PPP projects tendered from 2010 to 2020 are around 40% each year on average. In addition, from 2017-2019, the value of private investment in PPP infrastructure projects in Indonesia shows a decline in the role of the private sector, as shown in Figure 1. Regarding the infrastructure score, Indonesia occupies the ninth position among Asia Pacific countries in the Infrastructure Risk/Rewards Index. (RRI) in 2021 which is still below Malaysia (4), Vietnam (5), and the Philippines (8) (Liang et al., 2015). Thus, it is not easy for the government to attract private interest in PPP projects in Indonesia. Indonesia is one of the countries with the greatest opportunity in terms of investment in the infrastructure sector (Wibowo & Alfen, 2014). Therefore, analyzing the factors that significantly influence private participation in PPP infrastructure projects in Indonesia is important.



Source: Processed from the World Bank (2021)

Figure 1. Investment value of PPP infrastructure projects in Indonesia

According to the literature study that has been carried out, many studies have analyzed the determinants of investment in PPP infrastructure projects. The private sector's willingness to participate in PPP infrastructure projects is influenced by internal functions (for example, the nature of the company) and external factors (for example, institutions, government behavior, and project characteristics) (Chan, 2017; Xiao & Lam, 2020; Ye et al., 2018). In

Indonesia, several studies using different methods also discuss critical factors for PPP projects (Surachman et al., 2020; Wibowo & Alfen, 2014). Surachman et al. (2020) in his research found the main success factors of the PPP Water project in Indonesia, including stakeholder support which includes all communities, both users and communities affected by the project, government readiness which includes policy making, and providing guarantees, arrangements including project feasibility, and project preparation. Wibowo and Alfen (2014) identify the critical success factors of the macro-environment (CSF) and key areas for improvement of infrastructure public-private partnership (PPP) in Indonesia. The findings show that there are 16 factors indicated as CSF, namely commitment to maintaining policy sustainability, business trust, commitment to financial transparency, commitment to eradicating corruption, procurement rules, financial regulatory regimes, banking system services, government response to PPP business, corrupt company policies, taxation policies, availability of physical infrastructure, property rights and compensation for expropriations, financial sector for assessing lending decisions, judicial performance, registration and permit times, and tax rates for companies.

Sharma (2012), in his research, has found that macroeconomic stability plays an important role in the number and total of PPP investments. The countries with stable economic indicators create a conducive investment environment (Chan, 2017). Inflation results in higher project costs, thereby reducing profits which can affect the willingness of the private sector to participate (Wu et al., 2018). The large economic growth of a country represents a large market size so that it will attract more private investment (Banerjee et al., 2006).

Recent studies have found that the government or institutional environment determines the willingness of the private sector to participate in PPP projects (Baker, 2016; Wang et al., 2019). Another study proved that PPP projects are more common in countries with less corruption (Yehoue et al., 2006). Political instability has led to the failure of several PPP projects in developing countries, preventing private sector participation (Chan, 2017). Meanwhile, public involvement increases support for PPP in the USA transportation sector to attract more private companies (Boyer et al., 2016; Wang et al., 2019). However, the study by Galilea & Medda (2010) shows that many private companies are more interested in participating in PPPs in countries with low democratic governance.

Based on previous research, it can be concluded that macroeconomic and institutional factors can affect PPP projects. However, previous research on institutions was mostly done with different proxies and objects, thus showing different results. Limited research discusses macroeconomic, institutional, and PPP indicators in one research model, especially in Indonesia. Therefore, this study intends to examine the indicators that affect PPP investment with objects in Indonesia.

This article attempts to contribute to this line of inquiry in several new ways. First, it complements previous research focusing on risk analysis and critical success factors. Second, given that each PPP project is unique due to different country conditions, this study provides empirical evidence on indicators that significantly influence PPP investment in Indonesia. The existence of a plan to relocate Indonesia's capital city makes the PPP scheme alternative funding for infrastructure provision. So, improvements in indicators that have a significant impact are expected to increase private interest in participating in the provision of PPP infrastructure.

2. Literature Review and Hypotheses Development

New Public Management Theory

Disappointment with managerial competence in public organizations prompted the emergence of New Public Management (NPM) in the UK (Sclar, 2015). NPM views private sector business practices as superior to public sector management. One of the main features of NPM, according to Kajimbwa (2013), is to expand public-private partnerships (Public Private Partnership) and privatization. Private participation in the public sector is important because the private sector is considered to have financial capabilities, is more competitive, and can overcome the lack of management skills in public organizations (Hadikusumo, 2015). Although NPM offers advantages, some scholars argue that the practice of NPM can cause the indirect costs of public services to increase. In addition, it is feared that paid services will cause the government to lose its identity as a provider of public services for all parties and encourage profitable public services to be distributed to the private sector (Olson et al., 2001).

Prospect Theory

According to prospect theory, individuals tend to be risk aversion. Individuals will choose certain prospective and definite benefits (certain gains) over probable outcomes even if these possible outcomes offer higher utility. Smaller risk indicates a higher level of certainty about the return on investment (Wang et al., 2019). Thus, according to this theory, investors will consider the risk before deciding to participate in achieving the most prospective profit. The project sponsor or funder of the Public Private Partnership will estimate the advantages and disadvantages before they decide to start or not join a project. Projects that provide prospective and high returns will attract high private participation in PPP projects.

PPP Project Determinants

a. Macroeconomic Condition Factors

Several studies find that macroeconomic stability is an important issue in PPP (Azar et al., 2013; Sharma, 2012). The studies stated that a favorable macroeconomic environment significantly reduces commercial risk, thereby increasing the prospects for private profitability (Sharma, 2012). Stable economic conditions enable investors to make realistic project financial assessments (Chan, 2017).

b. Institutional Environmental Factors

In PPP, the government is not only a transaction partner or project partner but also a regulator and arbitrator (Baker, 2016). The government can make arrangements and determine actions or policies to encourage a conducive environment for PPP development. Government can be defined as an institution that exercises authority in a country. The governance includes 1) the process by which the government is selected, monitored, and put in place, 2) the capacity of the government to formulate policies and implement them effectively, and 3) the respect of citizens and the state in the institutions that regulate the economy and society. These three aspects of governance are divided into six institutional dimensions: voice and accountability, political stability, government effectiveness, quality of regulations, the rule of law, and corruption control (Kaufmann et al., 2011).

Hypothesis Development

Unstable inflation marked by continuous price increases can affect consumers' ability to use paid infrastructure utility services (Banerjee et al., 2006). In addition, a sharp increase in prices, including labor and material prices, will cause project costs to increase directly. High project costs due to inflation will further affect the profits earned by investors (Wu et al., 2018). Some scholars also stated that inflation has a negative impact on private investment in emerging markets (Banerjee et al., 2006). Other studies show that inflation has a significant negative impact on the amount and total investment in PPPs (Sharma, 2012; Yehoue et al., 2006). Accordingly, the hypothesis in this study is created as follows:

H₁: Inflation has a significant negative effect on private sector participation in PPP infrastructure projects in Indonesia.

The increasing economic growth of a country is considered to have good economic competitiveness, attracting investor confidence to invest (Sari & Baskara, 2018). Due to future growth, a great potential market tends to attract more private companies to engage in PPP projects (Sharma, 2012). A country with a large GDP indicates that it has the capability of financial resources to support the implementation of PPP projects. So, countries with large GDP growth will attract more private investment in PPP projects (Wang et al., 2019). Mainly in the transportation sector, a country's GDP growth has a positive correlation with the success of PPP projects but is not significant (Galilea & Medda, 2010). Another result showed that GDP growth is significantly positively correlated with the flow of private investment in infrastructure projects (Banerjee et al., 2006). Likewise, the study results by Wang et al. (2019) show a significant positive effect of GDP growth on private investment in PPP projects. Accordingly, the second hypothesis in this research is made as follows:

H₂: GDP growth has a significant positive effect on private sector participation in PPP infrastructure projects in Indonesia.

Control of corruption reflects the perception of corruption in a country. Several studies showed that corruption makes investors less interested in investing (Galilea & Medda, 2010; Pusok, 2016). Another study found that corruption risk factors were identified as the main critical factors influencing PPP projects (Azar et al., 2013; Silvius et al., 2015). Countries that are considered corrupt by investors are considered to require higher investment costs. Therefore investors will avoid a corrupt investment environment (Banerjee et al., 2006). Another study showed a critical factor in corruption causing delays in the compensation process and increasing the risk of PPP project failure (Nguyen et al., 2020).

On the contrary, another study shows different results that corruption invites more private investment in infrastructure (Banerjee et al., 2006). Meanwhile, Yehoue et al. (2006) found that less corruption was positively correlated with the number of PPP projects and total investment. Wang et al. (2019) explain that eradicating corruption can reduce the negative effects of risks borne by the private sector to encourage more private investment in PPP projects. Accordingly, the hypothesis in this study is created as follows:

H₃: Corruption control has a significant positive effect on private sector participation in PPP infrastructure projects.

Political stability means the government's resilience from unconstitutional or violent means, including terrorism (Kaufmann et al., 2011). Political stability can also be interpreted as the absence of political violence, a long-lived and legitimate government based on the constitution (Chan, 2017). Countries with stable political conditions will provide a safe and favorable investment environment for investors, encouraging more private sector investment (Wang et al., 2019). Countries perceived as politically unstable may risk expropriation of assets, breach of contracts, civil wars or disputes, and ethnic tensions (Banerjee et al., 2006). This can affect the viability of the project, so it has a negative impact on the profitability of the company. The study found that political stability significantly affects PPP project opportunities (Sachs et al., 2007). Another study showed that a stable political environment had no significant positive effect on the

total PPP investment (Sharma, 2012). The study conducted in 138 developing countries showed that political stability was not significantly positively correlated with the percentage of private investment in PPPs (Wang et al., 2019). Therefore, the hypothesis in this study is stated as follows:

H₄: Political stability has a significant positive effect on private sector participation in PPP infrastructure projects in Indonesia.

The voice dimension reflects perceptions of citizen participation in elections and government decision-making processes, freedom of expression, and free press media (Kaufmann et al., 2011). This includes the demand for government accountability by the people (Panayides et al., 2015). According to a study conducted in China, China's limited citizen voice opportunities may increase the risk of neglecting the public interest (Wang et al., 2019). This can lead to conflict and uncertainty about investment security. Thus, involving the community in PPP projects can reduce the risk of conflict, hoping it will attract greater investment in PPPs. However, Panayides et al. (2015) showed that the variables of voice and accountability had no significant effect on the success rate of the Port PPP project initiative. Meanwhile, Galilea & Medda (2010) shows that governance with low democratic accountability is significant to PPP outcomes. Thus, the hypothesis in this study is stated as follows:

H₅: Voice and Accountability have a significant positive effect on private sector participation in PPP infrastructure projects in Indonesia.

3. Method

Overview of Research Objects

The object of this research is PPP infrastructure projects in Indonesia in four sectors, namely energy, water, ICT, and transportation which have reached a financial close. This type of research includes quantitative approach research to test and analyze factors that are thought to influence the dependent variable. This research was conducted by analyzing data using multiple regression to see whether there is a significant influence and the direction of the relationship. Sampling was carried out using a purposive sampling technique considering the completeness of the data for all variables annually from 2003 to 2019.

Method of collecting data

In this study, the research data used is annual data for 2003 to 2019. Data on the investment value of PPP infrastructure projects are obtained from the World Bank's Private Participation in Infrastructure (PPI) Database. The independent variable data was taken from the World Development Indicator (WDI) and the World Government Indicator (WGI). The data was processed using the Eviews 10 application program for statistical analysis. Then to confirm the results of statistical testing with existing theories and facts, Confirmation interviews were conducted with PPP project academics in Indonesia.

Variable Operational Definition

Table 2. Variable definition

	Definition	Source
Independent Variable		
Inflation	describes a condition when there is a continuous change in the price level (Cheung & Chan, 2011). Inflation used in this study is the inflation rate measured based on the implicit deflator of GDP growth rate, namely the ratio of current GDP in local currency to GDP in local currency constant.	WDI
GDP growth (PPDB)	describes a country's economic growth (Panayides et al., 2015). The GDP growth rate (%) used in this study represents GDP growth at market prices based on constant local currency.	WDI
Political Stability (SPOL)	reflects the political stability of the ruling government in a country. A higher value means the country faces less risk of political change, such as expropriation of assets (Xiao & Lam, 2020).	WGI
Corruption Control (PKOR)	reflects the perception of a country's level of corruption. A higher value indicates that the government is corrupt-free (Xiao & Lam, 2020).	WGI
Voice and accountability (SNA)	reflect citizens participating in government and holding accountable for its policies or actions (Kaufmann et al., 2011). Higher scores indicate that citizens' participation in government and accountable government is higher (Xiao & Lam, 2020).	WGI
Dependent variable		
Total investment in PPP infrastructure project	Reflect interest and commitment of private investors in infrastructure projects. The private commitment to the financial closure agreement shows	PPI

that the PPP proposal has attracted private funding (Panayides et al., 2015). Meanwhile, based on the data of this study, the portion of private funding (percent private) is larger than the government, with an average of 94%. Thus, the greater the value of the PPP investment, the greater the participation of the private sector.

Research Model

The regression model is stated in the following equation:

$$NINV_t = \alpha + \beta_1 INFLATION_t + \beta_2 PPDB_t + \beta_3 SPOL_t + \beta_4 PKOR_t + \beta_5 SNA_t + \varepsilon_t \tag{1}$$

Where, $NINV_t$ is investment value of PPP infrastructure projects in Indonesia, $INFLASI_t$ is inflation, $PPDB_t$ is PDB growth, $SPOL_t$ is political stability, $PKOR_t$ is corruption control, SNA_t is voice and accountability, α is constant value, $\beta_1 \dots \beta_5$ is regression coefficient, and ε_t is error correction term.

4. Result and Discussion

4.1. Descriptive Statistical Analysis

The investment value of PPP infrastructure projects (NINV) has an average value smaller than the standard deviation. This shows that the data on the investment value of PPP infrastructure projects tends to be more varied (heterogeneous). Meanwhile, the variables of inflation, GDP growth, Corruption Control, Political Stability, and Vote and Accountability have an average value greater than the standard deviation, so they tend to be homogeneous. Meanwhile, inflation from 2003 to 2019 was in the range (average) of 7.834 percent. The purchasing power and currency values at an average inflation rate of below 10% are generally still believed to be valuable (Dewi & Cahyono, 2016).

Table 3. Descriptive statistics of research data

	NINV	INFLATION	PPDB	PKOR	SPOL	SNA
Mean	2826.795	7.834	5.421	30.576	20.158	48.615
Median	941.800	5.487	5.170	31.553	21.327	48.826
Max	15381.990	18.150	6.345	48.077	32.381	53.695
Min	32.000	1.605	4.629	15.152	3.015	40.385
Std. Dev.	4070.903	5.019	0.561	10.107	9.527	3.983
Obs	17	17	17	17	17	17

Source: Taken from the Eviews 10 app

4.2. Classic Assumption Test Results

4.2.1. Normality Assumption

The normality test aims to determine whether the residual distribution is normal. Based on the normality test results in Figure 2, the probability value of JB 0.5272 is greater than the significance level of 0.05 (0.5272>0.05). Thus, the residual data has a normal distribution with an error rate of 5 percent.

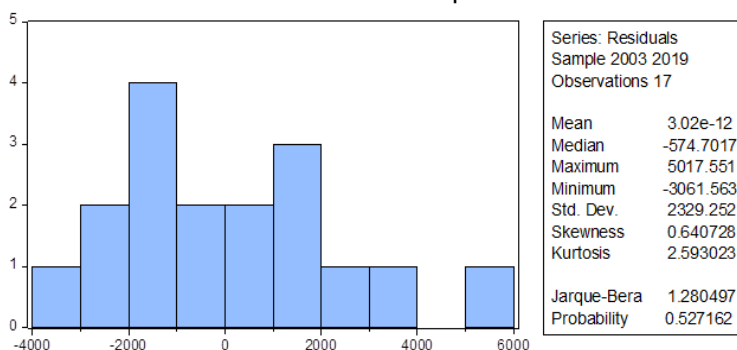


Figure 2. Data normality test results

4.2.2. Heteroscedasticity Assumption

The heteroscedasticity test is used to evaluate the consistency of the residual variance from one observation to another. The test results in Table 4 show that the value of Prob. F is equal to 0.5778, greater than the 0.05 significance level. Thus, the research model does not find heteroscedasticity problems.

Table 4. Heteroscedasticity test results with glejser

F-statistic	0.7908	Prob. F(5,11)	0.5778
Obs*R-squared	4.4951	Prob. Chi-Square(5)	0.4805
Scaled explained SS	2.4085	Prob. Chi-Square(5)	0.7902

Source: Taken from the Eviews 10 app

4.2.3. Nonmulticollinearity Assumption

The multicollinearity test aims to evaluate the existence of a significant relationship between the independent variables. The test results show the centered VIF value of all independent variables ranging from 1.703 to 8.631. The VIF value is lower than 10 ($VIF < 10$), so in this study, there were no symptoms of multicollinearity.

Table 5. Multicollinearity test results

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
INFLASI	46766.15	8.570526	2.388450
PPDB	2670533.00	170.7523	1.703018
PKOR	15153.57	33.65655	3.138380
SPOL	46905.44	49.69022	8.630887
SNA	251273.30	1287.394	8.082501

Source: Taken from the Eviews 10 app

4.2.4. Non-autocorrelation Assumption

The autocorrelation test intends to determine whether there is a relationship or correlation between the residual variables at one time of observation with other observations. The test results obtained a Chi-square Probability value of 0.1278 which is greater than the 0.05 significance level ($0.1278 > 0.05$). Therefore, the regression model does not experience autocorrelation problems.

Table 6. Autocollinearity test results

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.437007	Prob. F(2,9)	0.2873
Obs*R-squared	4.114721	Prob. Chi-Square(2)	0.1278

Source: Taken from the Eviews 10 app

4.3. Hypothesis Test Results

Based on the results of the multiple regression testing that has been carried out, it can be obtained an estimation of the study's multiple linear regression model, which is shown in Table 7 below. The summary results of the model estimation in Table 7 can be expressed in the regression equation as follows:

Table 7. The summary of the regression results

Variable	Coefficient	t-Statistic	Prob.		Effect
C	39315.61	2.020428	0.0684		
INFLASI	-12.34688	-0.057094	0.9555	-	Not significant
GDP_GROWTH	578.9153	0.354255	0.7298	+	Not significant
CC	402.6002	3.270518	0.0075	+	Significant
PS	343.6568	1.586768	0.1409	+	Not significant
VA	-1208.835	-2.411537	0.0345	-	Significant
R-squared	0.672621				
Adjusted R-squared	0.523812				
F-statistic	4.520032				
Prob(F-statistic)	0.017443				

The value of the coefficient of determination is indicated by the R-squared value of 67.26 percent, while the adjusted R-squared is 52.38 percent. These results indicate that the model can explain the variation in the investment value of PPP projects in Indonesia by 52.38 percent. The rest is explained by other factors not included in the model.

The t-test was conducted to evaluate the effect of the independent variables individually on the dependent variable. The independent variable is considered significant if the independent variable has a p-value below the 0.05 level of significance so that H_a is accepted. However, if the independent variable has a p-value above the 0.05 level of significance, then the independent variable is considered insignificant, so H_a is rejected, and H_0 is accepted.

H1: The Effect of Inflation on Private Participation in PPP Infrastructure Projects in Indonesia

The p-value of Inflation (INFLATION) is 0.956. A probability value of more than 0.05 means that inflation has no significant effect on PPP project investment. The coefficient value is also negative, indicating that an increase in inflation will reduce PPP investment. Therefore H_1 is rejected.

H2: The Effect of GDP Growth on Private Participation in PPP Infrastructure Projects in Indonesia

The p-value of GDP Growth is 0.7298, so GDP Growth has no significant effect on the total PPP investment. The coefficient value is also positive, which means that an increase in GDP growth will increase investment in PPP projects so that H_2 is rejected.

H3: Effect of Corruption Control on Private Participation in PPP Infrastructure Projects in Indonesia

The p-value of Corruption Control is 0.0075. Because the p-value is less than 0.05, Corruption control has a significant effect on PPP Project investment. The coefficient value is also positive, so it can be concluded that Corruption Control positively relates to PPP Project investment. Therefore H_3 is accepted.

H4: The Effect of Political Stability on Private Participation in PPP Infrastructure Projects in Indonesia

The p-value of Political Stability is 0.1409, so Political Stability has no significant effect on the total PPP investment. The coefficient value is also positive, which means that an increase in Political Stability will increase investment in PPP projects. Thus, H_4 is rejected.

H5: Influence of Voice and Accountability on Private Participation in PPP Infrastructure Projects in Indonesia

The p-value of Voice and Accountability is 0.0345. Since the p-value is less than 0.05, Voice and Accountability have a significant effect on PPP Project investment. The coefficient value is also negative, so it can be concluded that Voice and Accountability are negatively related to PPP Project investment. Therefore, H_5 is rejected.

4.3. Discussion of Research Results

4.3.1. *The Effect of Inflation on Private Participation in PPP Infrastructure Projects in Indonesia*

Inflation is needed to analyze the project's feasibility, especially about tariffs. Meanwhile, for the government, the amount of inflation is used to determine the number of contingent liabilities for government support to business entities (Wibowo, 2012). High inflation can cause a decrease in the purchasing power of users of infrastructure services. On the one hand, it can also increase project costs and impact investment profits. The regression results of this study show that the negative coefficients are supported by previous research (Banerjee et al., 2006). However, statistically, the effect between inflation and the investment value of the PPP project in this study is not significant. These results are supported by the previous study, which found that inflation has no significant effect on foreign direct investment in Indonesia (Dewi & Cahyono, 2016).

This insignificant result can be explained due to four possibilities. *First*, from the aspect of the object and time of sampling. Yehoue et al. (2006) used a sample of data from 1990 to 2003 from all developing countries. *Second*, the average inflation during the period of this study was 7.83% per year, which means it is still below 10% per year. Purchasing power and currency values at an average inflation rate below 10% are generally believed to be valuable (Dewi & Cahyono, 2016). *Third*, the characteristic aspects of PPPs in Indonesia. Based on a study conducted in Indonesia, there is a policy to immunize business entities from inflation risk, namely the application of tariff adjustments the following inflation for PPP projects (Wibowo, 2012). If it is associated with prospect theory, this tariff adjustment pattern can reduce inflation risk because the tariff adjusts to the condition of the inflation rate (Wibowo, 2012). According to the interview results, the private sector will be concerned about whether or not the policy adheres. *Fourth*, from the aspect, the Indonesian economic system is not liberal. Based on the interview results, in countries that implement an economic system based on market mechanisms, inflation will have a significant effect on the willingness of the private sector to participate.

4.3.2. *The Effect of GDP Growth on Private Participation in PPP Infrastructure Projects in Indonesia*

A higher GDP growth rate reflects a higher level of demand for private investment in infrastructure projects (Wang et al., 2019). A country with a high GDP indicates sufficient financial resources to support a PPP project. A positive coefficient supports the concept of linking a country's income level with the addition of private investment in PPP infrastructure projects (Wang et al., 2019; Yehoue et al., 2006). The regression results of this study indicate that it does not significantly support the previous research. The previous research found that the GDP growth of a country

is positively correlated, although not significant, to the success of PPP projects (Galilea & Medda, 2010). However, this result also matches previous research that GDP growth had no significant effect on foreign direct investment in Indonesia (Sari & Baskara, 2018).

The insignificant effect can be explained in three possibilities. *First*, it can be caused due to the different data samples and the scope of the dependent variable. Research proved it using the dependent variable of total private investment in infrastructure consisting of PPP projects (KPBU) and non-PPP projects (divestiture). It used panel data from 40 developing countries from 1990 to 2000 (Banerjee et al., 2006). *Second*, data on GDP growth in Indonesia from 2003 to 2019 an average of 5.42%, indicates the economy's condition is growing positively. *Third*, this research is in line with the study of Wibowo & Alfen (2014) that the GDP growth variable was not identified as the 16 most crucial factors determining the success of PPP in Indonesia. They identified the critical factors of 40 variables using the gap analysis (GA) and importance-performance analysis (IPA) methods (Wibowo & Alfen, 2014). The interviews also support that Indonesia's economic system is neither liberal nor fully based on market mechanisms.

4.3.3. *The Effect of Corruption Control on Private Participation in PPP Infrastructure Projects in Indonesia*

The regression results of this study indicate a significant influence and a positive direction in line with the study conducted by Wibowo & Alfen (2014), in the context of the Indonesian case placing commitment to eradicating corruption into the top 3 critical factors for the success of PPP infrastructure and prioritized improvements. Likewise, Yehoue et al. (2006) research showed that corruption control is significantly positive on the number and total investment of PPP projects in developing countries. Wang et al. (2019) found that corruption control has a significant positive correlation with the level of private investment in PPP projects.

Based on data from the KPK report cited in Guntara (2020), the largest type of corruption committed by officials from 2003 to 2019 was infrastructure bribery. This reinforces that infrastructure projects are vulnerable to corruption. According to a study by Wibowo & Alfen (2014), the failure to attract the private sector at the 2005 and 2006 Infrastructure Summits is thought to have something to do with the reputation of corruption in government that is not good. Therefore, corruption control must be improved, so the environment is conducive to investment. One of the Indonesian government's serious efforts to eradicate corruption is the establishment of the Corruption Eradication Commission (KPK) in 2002 through Law Number 30 of 2002. In addition, in the first period of President Susilo Bambang Yudhoyono's administration, he reformed infrastructure policies to encourage private investment. One of the changes made was revoking the monopoly of state-owned enterprises that previously controlled the infrastructure market, such as Pelabuhan Indonesia, controlling port infrastructure, and Jasa Marga, controlling toll roads (Wibowo & Alfen, 2014).

4.3.4. *The Effect of Political Stability on Private Participation in PPP Infrastructure Projects in Indonesia*

Countries perceived as politically unstable are at risk of contract breaches and expropriation of assets that can affect the project's viability—the better the political stability, the smaller the risk of political change, creating a conducive environment. The regression results of this study indicate that political stability has no significant effect on the participation of the private sector in PPP projects in Indonesia, in line with the research of Wang et al. (2019). They said that political stability has no significant effect on the level of private investment in PPP projects. This is because the government does not easily control political stability. Likewise, Sharma (2012) found that political stability has no significant positive correlation with the number of projects and the total PPP investment.

The insignificant effect in this study can be explained due to four possibilities. *First*, the characteristics of the sample of this study indicate that political conditions are stable compared to the period 1998-2002, not experiencing a brief change of government power. Political instability due to the one-year government term was claimed to be Thailand's main obstacle to Build Operate Transfer (BOT) in 1999 (Wang et al., 2019). *Second*, private perception views that the central Government of Indonesia is politically more secure. Based on the interview results, the regional government's stability is considered riskier, so the private sector tries to involve the central government in the project. *Third*, from the aspect of PPP characteristics in Indonesia, the government has provided guarantees for infrastructure projects against political risks since 2006 through the issuance of PMK 38/2006, The Ministry of Finance Regulation Number 38 of 2006, which later changed PMK 260/2010, The Ministry of Finance Regulation Number 260 of 2010. Guarantees are given for the risks caused by the implementation or failure of an action, or policy, including the existence of a unilateral decision. In addition, this is due to the inability of the government to carry out the obligations assigned to him as stated in the agreement (Wibowo, 2016). Concerning prospect theory, the private sector may see this guarantee as reducing political risk in the project country.

4.3.5. *Influence of Voice and Accountability on Private Participation in PPP Infrastructure Projects in Indonesia*

According to Kaufmann et al. (2011), election rights describe citizens' participation in the government decision-making process. When public participation is low, including not being responded to by the government, the public's concern for government accountability will be lower. Meanwhile, government accountability will not be achieved without a demand for accountability from its citizens (Panayides et al., 2015). Boyer et al. (2016) stated that citizen participation can increase support for PPP. This is because citizen participation can reduce the risk of conflict and the risk of neglecting the public interest. However, this study's regression results indicate a significant negative relationship between voice

and accountability with the total investment in PPP infrastructure projects. The results of this study indicate two possibilities. The indications of the first study support the results of research by Galilea & Medda (2010) on the transportation sector in 72 countries. The study by Galilea & Medda (2010) shows that lower democratic accountability is positively correlated to PPP project performance and success than more democratic accountability. Lower democratic (low AD) governments have more authority and are judged to be more able to meet the long-term requirements of PPP projects.

Meanwhile, the higher the democratic accountability, the greater the risk of a shift in support. Meanwhile, the second indication is that citizens' participation has been less involved in PPP infrastructure projects in Indonesia. Based on the results of interviews, the quality of community involvement is still limited in PPP infrastructure development planning in Indonesia. Lack of community involvement proved to be a bottleneck for the project. This second indication supports the research of Sihombing et al. (2021) in Indonesia about the concept of Public People Private Partnership (4P) financing in the provision of infrastructure. In the 4P concept, people (NGOs, experts, academics, professional organizations, local communities, and the media) can be involved in formulating and even being part of financing through the role of providing land (Sihombing & Santos, 2021; Zhang et al., 2015). There are two indications from the results of this study. Further research is needed to fill the research gap that exists in this study.

5. Conclusion

This study aims to determine the effect of macroeconomic conditions (inflation and GDP growth) and institutional governance (corruption control, political stability, and voice and accountability) on private participation in PPP infrastructure projects in Indonesia as proxied by the investment value of PPP projects. This study uses secondary time series data from the annual period 2003 to 2019. Research data sources are obtained from the World Bank Database (WGI, WDI, and PPI). Data analysis was carried out using the multiple regression method, which first tested the fulfillment of classical assumptions.

Based on the research objectives and discussion of hypothesis testing, it can be concluded that inflation, GDP growth, and political stability have no significant effect on private sector participation in PPP infrastructure projects in Indonesia but have a coefficient direction following the previous research concept. Meanwhile, controlling corruption has a significant and positive effect on private sector participation in PPP infrastructure projects in Indonesia. This means that better corruption control increases the investment value of PPP projects in Indonesia. Voice and accountability have a significant and negative effect on private sector participation in PPP infrastructure projects in Indonesia. This means that a decrease in voice and accountability results in the increased investment value of PPP projects in Indonesia.

Implementation of the research finds several limitations encountered by the author. The data on the investment value of PPP projects released by the PPI World Bank does not include small and local projects, so this research is only for large category projects. In addition, WGI's institutional governance indicator data sources are not only surveys of the private sector but also households, non-governmental organizations, and other public bodies. Kaufmann et al. (2011) estimate that different perceptions may be based on each respondent's experience of data sources.

The implication of this research is for the government to attract more private investment in PPP project infrastructure, which is expected to improve corruption control in its environment so that corruption is reduced. Improvements and a strong Government commitment are very much needed in eradicating corruption, considering that the PPP project life cycle is generally long-term. Efforts to prevent corruption are carried out, not only focusing on the government environment. However, it also involves the private sector as PPP partners in building anti-corruption values and fighting unhealthy business practices. The government can increase citizen involvement in PPP project decision-making, especially in the community around the affected project. For further research, it fills the research gap based on the results of this study.

Author Contribution

Author 1: conceptualization, writing original draft, data curation, formal analysis, investigation, methodology. Author 2: review and editing, writing review and editing, supervision, validation, visualization, proofreading.

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Conflict of Interest

Hereby I declare that the research entitled 'Indicators Affecting Private Involvement in Public Private Partnership (PPP), A Case in Indonesia' is absence from any commercial or financial relationships that could be construed as a potential conflict of interest.

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