EFFECT OF FISCAL AND MONETARY POLICY ON PRIVATE INVESTMENT IN VIETNAM

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Abstract. This paper aims to identify the effect of fiscal and monetary policy on private investment in Vietnam, a transition economy having robust economic growth. The quantitative analyze process employs the Autoregressive Distributed Lag (ARDL) model with a quarterly database in 2004–2020. The bound test study indicates that there is a long-term cointegration relationship between the policy variables and private investment. In the long run, the estimated result shows that the government expenditure and money supply have positive and significant impacts on private investment, however, the exchange rate has a negative and significant impact on private investment. In the short run, government expenditure also has a significant positive impact on private investment in Vietnam, besides, the lag of the private investment variable has a positive and significant which shows the supporting impact on private investment on itself. The coefficients of the tax revenue are positive and insignificant in the estimated functions. Therefore, the evidence suggests that the government needs to increase its expenditure which helps improve private investment in Vietnam in the future.

Keywords: private investment, fiscal policy, monetary policy, ARDL.

JEL Classification: E22, E52, E62.

Introduction

In a market economy platform, the private sector and private investment play an important role in maintaining economic growth as well as supporting sustainable development (Acosta & Loza, 2005; Adams, 2009; Fujii et al., 2013; Tung, 2019). Operating based on the "invisible hand" law, private investment is generally more efficient than public investment. However, private investment is highly sensitive to socio-economic changes and this financial resource is affected by a variety of macroeconomic factors (Monadjemi & Huh, 1998; Quan, 2004; Wang, 2005; Jongwanich & Kohpaiboon, 2008; Al-Sadig, 2013). Besides, the political and economic environment of each country has its own characteristics, hence, the fluctuations of private investment in countries are also different. Because of the importance of private investment in development strategy in countries, therefore, it is necessary to identify issues related to this macroeconomic variable. Besides the "invisible hand" run the market operation, countries also have the "visible hand" which is the regulatory activities of the public system for operating the economy (Bernanke & Mihov, 1998; Blanchard & Perotti, 2002; Feldstein, 2009; Dungey & Fry, 2009; Barro & Redlick, 2011; Sims, 2012). Government regulation in economic activities is popularly reflected by macroeconomic policies, which have impacts on the objects in the economy such as private investment.

Specifically, governments often use macroeconomic policies, for example, fiscal policy and monetary policy, as popular tools to regulate the economy when the market mechanism fails or the policymakers try to get a stronger breakthrough in achieving socioeconomic goals, such as promoting faster economic growth (Forni et al., 2009). Hence, it is very necessary to revisit and analyze about how to operate these policies more effectively (Feldstein, 2009; Sims, 2012). There are some opinions that claim the implementation of fiscal policy and monetary policy are needed to support the private sector and private capital flows. On the other hand, when these policies implement inappropriately, they cause macroeconomic instability and lead to a decrease in the private investment sector, or eventually slowing down economic growth, or pushing the economy into prolonged recession.

Over the recent three decades, Vietnam has transformed from a centrally planned economy to a

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market-oriented economy. Vietnam's transition is also a successful case when the economic growth rate has always been at the top level in the Asia-Pacific region (Barker & Üngör, 2019). Besides the success in attracting FDI inflows, the development of the private sector and the increase of private investment has been achievements in Vietnam in the past decades. In detail, private investment accounts for only 22.9% of the total national investment in 2000, increasing to 36.1% in 2010, and reaching 44.9% in 2020 (General Statistics Office, 2021). However, the increase of private investment in Vietnam has been faced some challenges when there were periods of sideways movements, declines, or even recession in some years (Tung & Thanh, 2015; Tung, 2018). To study the impact of these macroeconomic policies on private investment, this paper has the research objective including the following three issues: firstly, modeling the impact of fiscal and monetary policy on private investment. Secondly, quantitatively analyze the impact of these macro policies on private investment, thirdly, compare the impacts between the short-run and the long-run. Finally, the paper also provides some implications for policymakers to improve the effectiveness of policy administration in Vietnam in the coming time.

The content of this paper has five sections. Section 1 introduces the literature review of previous studies. Section 2 includes methodology and data source. The quantitative result and discussion are presented in section 3. Finally, some main conclusions will be shown in the end of the paper.

1. Literature review

According to the operating principles of macroeconomic policies, fiscal policy is implemented mainly based on two tools including taxes and government expenditure, on the other hand, monetary policy is operated through changes in the money supply (Acosta & Loza, 2005; Martin & Milas, 2009; Dungey & Fry, 2009; Yunanto & Medyawati, 2014). However, the exchange rate also is considered as a tool of monetary policy (Bhandari & Upadhyaya, 2010; Heidari & Pourvaladi, 2011). In general, governments popularly employ macroeconomic policies, especially fiscal and monetary policies, as "the visible hand" to regulate the economy. In operation principles as well as the expectation of policymakers, fiscal and monetary policies can help the economy run more efficiently. However, there some debates about the actual impacts of these policies on private investment in an economy. Furthermore more, there are previous studies showing conflicting results across countries.

On the side of fiscal policy evidence, Soli et al. (2008) investigate the relationship between fiscal policy, private investment, and economic growth in Ghana. The authors find that the impact of government spending on private investment becomes insignificant after two years while changes in capital expenditure are insignificant in the short run, however, it turns significantly positive after three years. The impact of fiscal policy on private investment is almost the opposite of the impact of government spending on economic growth. Besides, the tax revenue has a significantly positive for economic growth but significantly negative for private investment. Feldstein (2009) suggests a good tax policy can contribute to ending the economic recession by financial fundings for increased government spending. To more effective, public spending should be large, robust, and targeted at increasing aggregate activity (includes private investment) and employment. In a study from Sub-Saharan Africa, Adams (2009) finds that government expenditure has a positive and significantly correlated with domestic investment. The finding implies that expansionary fiscal policies can improve the size of private investment in this region. Petrevski et al. (2016) quantitatively analyze the dynamic effects of monetary and fiscal policies in three South-Eastern European economies. The authors report evidence that the expansionary fiscal policy can lead to an increase in economic activity, which implies an increase in private investment as well.

Besides, Kasselaki and Tagkalakis (2016) examine the effect of fiscal policy on financial markets and economic sentiment in the transmission of fiscal policy shocks. The authors conclude that a tax-based fiscal consolidation has a more pronounced and more protracted negative effect on private investment relative to an expenditure-based fiscal consolidation. However, government spending improves financial markets and boosts economic sentiment, it can reduce the direct negative effect of fiscal consolidation on private investment. On the other hand, an increase in tax level leads to negative effects of fiscal adjustment. Alesina et al. (2002) find a significant negative effect of public spending on firm profit and business investment. Besides, this result is consistent with different theoretical models where tax revenue also has negative impacts on business profit. Monadjemi and Huh (1998) identify the relationship between private investment and government spending in some selected OECD countries. The evidence implies that a weak "crowding out" impact of the government investment on private investment. Hence, the authors conclude that an expansionary fiscal policy can reduce private investment in these economies. Wang (2005) analyze the relationship between government expenditures and private investment in Canada in 1961–2000. The empirical evidence shows that government expenditure has positive effects on private investment, however, the statistical significance depends on the kinds of expenditure from the government. Castro (2007) investigates the impact of fiscal policy in Spain and concludes fiscal shocks involve significant effects on some macro variables such as private investment. However, the empirical evidence shows that the tools of fiscal policy (government spending and net taxes) lead to the raising of private investment in the short-run and reducing in the long run.

In an empirical study, Forni et al. (2009) highlight those innovations in fiscal policy tend to be rather persistent. The impacts of tax revenue are significant in decreasing favors investment and output in the medium run. Besides, Fujii et al. (2013) claim that public investment can

decrease private investment, however, the effects depend on the individual private sectors. The results conclude that public investment reaps different benefits in different sectors, and it has negative effects in the case of resource misallocation on some specific sectors. Yunanto and Medyawati (2014) make a comparative analyze to identify which policy more effective between monetary and fiscal policy in Indonesia. The estimated results show that government consumption and money supply have positive effects on private investment in this country. Afonso and Jalles (2015) evaluate the relevance of fiscal policy for private and public investment in a large sample of countries in 1970–2008. The estimated results confirm a negative effect of government expenditure and of government consumption spending (the proxies of fiscal policy) on private investment. Furthermore, the interest payments and subsidies have a negative effect on both types of investment, especially in the case of the emerging economies group. Omojolaibi et al. (2016) explore the relationship between fiscal policy and private investment in five selected African countries in 1993–2014. The authors show the existence of a significant crowding-in effect (a positive side) of government expenditure and tax revenue while non-tax revenue showed a crowding-out effect (a negative side). Besides, recurrent expenditure and external debt also showed negative effects, however, these are insignificant. Akinlo and Oyeleke (2018) revisit the relationship between government expenditure and private investment in Nigeria in 1980–2016. The authors conclude that there is a long-run relationship between the variables. In detail, government expenditure has a significant positive impact on private investment in the short run, however, the relationship is insignificant in the long run. The paper suggests that the government needs to improve the public expenditure, focusing on infrastructural facilities, to attract more investment flows from within and outside the country.

On the side of monetary policy, in general, the empirical results indicate that an increase in money supply has a positive effect on private investment. Acosta and Loza (2005) do an empirical study of the macroeconomic elements that can affect investment in Argentina. The quantitative results investigate that exchange rate is an important factor that influences investment decisions in the short run. On the other hand, the authors find a crowding-out effect of public investment (a tool of fiscal policy) on private investment. Bhandari and Upadhyaya (2010) focus on the effect of real exchange rate on private investment in some countries in Southeast Asia. The estimated evidence confirms that the real exchange rate uncertainty has negatively affected private investment in these countries. Jongwanich and Kohpaiboon (2008) examine the determinants of private investment in Thailand in 1960–2005. By an ARDL process, the authors explore that public investment and real exchange rate uncertainly have positive and significant effects on private investment in this economy. Heidari and Pourvaladi (2011) visit the impact of the exchange rate regime on investment in the Iranian economy in 1960–2007. The authors claim that

there are many unusual policy changes and resulting in the high fluctuation of Iranian macroeconomic variables. The empirical study investigates that the uncertainty regime of the exchange rate has negative impacts on investment in Iran.

Besides, Hamuda et al. (2013) analyze the determinants of investments in Tunisia by an annual data in 1961–2011. The authors find that the monetary base (denotes money supply) has a positive impact on investment. The result implies that an expansionary monetary policy can help to increase private investment in this economy. Al-Sadig (2013) employed the GMM method to identify the determinants of private investment in developing countries. The result shows the money demand (denotes as a proxy of monetary policy) has a positive impact on private investment. This evidence is in line with the argument that the more liquidity the higher the private investment rate is. However, the impact is only positively and statistically significant in high-income countries which maybe have not a huge external debt. Hailu and Debele (2015) conduct a study focusing on the dynamic impact of monetary policy on private investment in Ethiopia. In the short run, the estimated result suggests that private investment is positively and significantly influenced by public investment, money supply, however, it is received negatively and significantly by real exchange rate. In the long run, the results confirm a positive and significant effect of public investment and broad money supply on private investment, besides, private investment negatively and significantly influenced by the real exchange rate. Finally, the authors imply that monetary policy measures are more influential than fiscal policy in promoting private investment in Ethiopia.

Furthermore, Ndikumana (2016) suggests some policy implications of monetary policy for domestic investment in sub-Saharan African countries. The econometric evidence confirms that contractionary monetary policy affects domestic investment negatively in all cases of the analyze process. The author argues that government maybe maintain a low-interest rate regime to enhance bank lending to the private sector. This solution can robustly support domestic investment. Furthermore, the study suggests some policy implications to reach the national development goals in this region, focusing on employment creation and poverty reduction. Brima and Brima (2017) claim that the development of private sector investment is an important objective for the government of Sierra Leone. The empirical study examines the fluctuation in monetary policy that can affect the behavior of private investment in 1980–2014. The econometric evidence suggests that money supply exerts a positive and statistically significant effect on private investment. The authors suggest that an important policy implication emerging issue is the governments need to facilitate the establishment of financial institutions to support the private sector and enhance private investment. Bora et al. (2020) try to explore the effect of some selected monetary indicators (tools of the monetary policy) on private investment in Nigeria. The quantitative finding indicates that the broad money

supply increases private investment in the long run, on the other hand, the relationship between exchange rate and private investment is an inverse one. The authors suggest proper coordination of monetary and fiscal policies can help proper channeling of financial resources to the private sector as well as private investment.

In summary, the impact of fiscal and monetary policy on private investment much depends on the policies themselves and the particularities of each economy. The previous results seem to show when fiscal and monetary policy are implemented with a reasonable, there would be a stimulating effect on the increase of private investment. However, if these policies are overused, there will be the opposite effect, impacting in the direction of inhibiting the growth of the private investment. In the next section, the paper presents the quantitative methodology to analyze the impact of fiscal and monetary policy on private investment in Vietnam in recent years.

2. Methodology

Following the theoretical framework of the fiscal policy and monetary policy, the significant factors affecting the private investment include four variables: taxes revenue and government expenditure (denotes the tools of fiscal policy), money demand, and exchange rate (denotes the tool of monetary policy). The equation for private investment is constructed for empirical investigation.

$$PINV_t = f(TAX_t, GE_t, M_t, EXCH_t), \quad (1)$$

where $PINV_t$ is the private investment in t year. Besides *TAX* denotes tax revenue, *GE* is government expenditure, *M* is money supply and *EXCH* is the exchange rate in t year, respectively. Besides, the time series database is transformed into the natural logarithm values to obtain direct elasticities among variables. Hence, the Equation (1) can be written, using the natural logarithm of all variables, as follows.

$$LnPINV_t = \varphi_0 + \varphi_1 LnTAX_t + \varphi_2 LnGE_t + \varphi_3 LnM_t + \varphi_4 LnEXCH_t + \varepsilon_t. \quad (2)$$

To examine the cointegration of a long-run relationship between the fiscal and monetary policy and private investment in Vietnam, the Autoregressive Distributed Lag (ARDL) method and the bound test are employed (Pesaran et al., 2001). This approach has some advantaged points, firstly, the ARDL can be conducted when the testing function has a mixture of I(0) and I(1) processes, secondly, the bound test can be used with a single-equation format, thirdly, the ARDL helps to conclude the cointegration with a sample size, which has smaller observations than others. Based on these reasons, the ARDL bound test is considered as a powerful method in studying the cointegration relationship of time series database form. The general ARDL function employing Equations (2) can be rewritten in the below format.

$$\Delta LnPINV_t = \propto_0 + \sum_{i=1}^{k} \propto_{1i} \Delta LnPINV_{t-i} + \sum_{i=0}^{k} \propto_{2i} \Delta LnTAX_{t-i} + \sum_{i=0}^{k} \propto_{3i} \Delta LnGE_{t-i} + \sum_{i=0}^{k} \propto_{4i} \Delta LnM_{t-i} + \sum_{i=0}^{k} \propto_{5i} \Delta LnEXCH_{t-i} + \beta_1 LnPINV_{t-1} + \beta_2 LnTAX_{t-1} + \beta_3 LnGE_{t-1} + \beta_4 LnM_{t-1} + \beta_5 LnEXCH_{t-1} + \varepsilon_t. \quad (3)$$

Following the theoretical framework of econometrics (Pesaran et al., 2001), the ARDL modeling includes two main steps. Firstly, the ARDL function would be estimated by the Ordinary Least Squares (OLS) regression and then using selection criteria to determine the optimal lag length for the ARDL specification in the quantitative analyze process. The long-term cointegration relationship between the variables is done by Wald's test (F-statistics) to check the hypotheses. In detail, the null hypothesis of H_0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ and against the alternative hypothesis: H_1: $\beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0$. The F-statistic value is used to test the null hypothesis of no cointegration or alternative one among variables. If the F-statistic value is below the lower limit of the bound value, the null hypothesis cannot be rejected. Besides, if the F-statistic value is higher than the upper limit of the bound value, the null hypothesis can be rejected. On the other hand, the cointegration cannot be concluded in the case that the F-statistic value is between the lower limit and upper limit of the bound values.

When the ARDL cointegration test confirms there is a long-term equilibrium relationship between the variables, the Error Correction Model (ECM) is employed to investigate the balance between the long-term and the short-term dynamic relationship. Besides, to identify the long-term function, the ECM form for quantitative analyze of the short-term relationship among variables can be written as follows.

$$\Delta LnPINV_t = \delta_0 + \sum_{i=1}^{k}\delta_{1i}\Delta LnPINV_{t-i} + \sum_{i=0}^{k}\delta_{2i}\Delta LnTAX_{t-i} + \sum_{i=0}^{k}\delta_{3i}\Delta LnGE_{t-i} + \sum_{i=0}^{k}\delta_{4i}\Delta LnM_{t-i} + \sum_{i=0}^{k}\delta_{5i}\Delta LnEXCH_{t-i} + \gamma ECM_{t-1} + \mu_t. \quad (4)$$

A quarterly database is used to perform the quantitative analyze of the impact of policies on private investment in Vietnam. The collected period is from the first quarter of 2004 to the end of the fourth quarter of 2020, hence, there are 68 observations. The time series variables (except for the exchange rate variable) are adjusted by the constant price before included in the calculation process. In detail, data on private investment, tax revenue, and government expenditure are sourced from the General Statistics Office of Vietnam, units are trillion Vietnam Dong. The money supply data is sourced from the State Bank of Vietnam, the unit is trillion Vietnam Dong. Finally, the exchange rate is the nominal exchange rate between Vietnam Dong and US Dollar, and it is sourced from the State Bank of

Vietnam. All data of the above variables are converted to the natural base logarithm before included in the ARDL model. The descriptive statistics of the variables are reported in Table 1.

Table 1. The descriptive statistics of the variables

Statistic indicator	LnPINV	LnTAX	LnGE	LnM	LnEXCH
Mean	3.279	3.836	3.919	2.065	2.973
Median	3.339	3.868	4.023	2.082	3.036
Maximum	4.255	4.645	4.465	2.241	3.159
Minimum	2.309	3.185	2.140	1.792	2.755
Std. Dev.	0.508	0.303	0.421	0.131	0.150
Skewness	–0.229	–0.023	–1.427	–0.528	–0.342
Kurtosis	2.355	2.664	6.161	2.115	1.448
Observations	68	68	68	68	68

3. Result and discussion

The results of the unit root test for the variables in the ARDL model are performed by two methodologies including the Augmented Dickey-Fuller (ADF) and the Phillip-Perron (PP). In Table 2, the ADF testing result shows that there is only LGE is stationary at the level with the significance of 1%, however, the PP test indicates that the LnPINV, LnTAX, and LnGE are stationary at the level with the significance of 1%. Employing the tests for first difference data, the results confirm that all these time series are stationary at the first difference with 1% significance with both ADF and PP criteria.

Applying the bound testing approach of Pesaran et al. (2001), the optimal lag length is selected by the Akaike Info Criterion (AIC) for identifying the general ARDL model. Comparing the received AIC criteria values, the optimal lag length for the bound testing process is determined as ARDL (1,0,0,0,0). The lag of the policy variables implies the high sensitivity of private investment responding to the fluctuations of fiscal and monetary policy in Vietnam. Using the Wald test calculates the F statistical value is 13.21798 at 1% significance. The F-statistic continues to be used to check the cointegration relationship with the bound values of Pesaran et al. (2001). The F value exceeds all upper bounds of bound values; therefore, it confirms

the null hypothesis of $H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ is rejected at the statistical significance of 1% level (Table 3). The bound testing result helps to conclude that there is a long-term cointegration relationship between the tools of fiscal and monetary policy and private investment in Vietnam.

Table 3. Result of the ARDL bound test

Dependent variable	Function form ARDL (1,0,0,0,0)		F-statistic	
LnPINV	F(LnPINV/LnTAX, LnGE, LnM, LnEXCH)		13.21798 (P-value: 0.000)	
Critical bound values				
1%		2.5%		5%		10%	

I(0	I(1)	I(0	I(1)	I(0	I(1)	I(0	I(1)
3.29	4.37	2.88	3.87	2.56	3.49	2.20	3.09

The ARDL bound test confirmed the existence of a long-term cointegration relationship between the policy variables and private investment. Hence, the long-term equation is estimated to determine the coefficients representing the long-term impacts of policy instruments on private investment. The specification of a logarithmic linear model is that the estimated coefficients are the elasticity of the dependent variable according to the explanatory variables. Since then, the estimation results of the ARDL model have shown that in the long run, government expenditure and money supply have positive impacts on private investment with a statistical significance of 5%. In detail, if government expenditure and the money supply increase by 1%, which can lead to an increase in private investment by 0.61% and 3.39%, respectively. This finding is consistent with some previous results (for example, Wang, 2005; Soli et al., 2008; Fujii et al., 2013; Hailu & Debele, 2015; Brima & Brima, 2017). On the other hand, the exchange rate has a negative and significant impact on private investment, where a 1% increase in the exchange rate leads to a decrease in private investment by 1.64%. This evidence is in-line with other countries (see Bhandari & Upadhyaya, 2010; Heidari & Pourvaladi, 2011; Hailu & Debele, 2015). Finally, the long-term result also shows that tax revenue has a positive effect on private investment, but this effect is not statistically significant. The short-term

Table 2. The unit root test for the variables

Variable	Augmented Dickey-Fuller test		Phillips–Perron test	
	Level	First – diffirence	Level	First – diffirence
LnPINV	–2.898348	–15.90940***	–8.819863***	–26.97601***
LnTAX	–2.533779	–13.60987***	–7.923400***	–27.55365***
LnGE	–9.475285***	–8.387487***	–9.506849***	–41.08404***
LnM	–1.879093	–9.177137***	–2.596870	–14.51120***
LnEXCH	–0.668571	–7.699524***	–0.762320	–7.698541***

Notes: *** indicates 1% significance level.

Table 4. The results of ARDL estimation

Panel A: Long run coefficients. The dependent variable is the Private investment (LnPINV) Included observations: 68				
Variable	Coefficient	Standar Error	t-Statistic	P-value
Constant	–1.4227	0.8944	–1.5905	0.1167
LnTAX	0.0637	0.1349	0.4727	0.6380
LnGE	0.6106**	0.2794	2.1848	0.0326
LnM	3.3903**	1.2854	2.6374	0.0105
LnEXCH	–1.6453*	0.9553	–1.7222	0.0899
R-squared = 0.6481		Adjusted R-squared = 0.6257		

Panel B: Short run coefficients. The dependent variable is Δ Private investment (ΔLnPINV) Included observations: 66				
Variable	Coefficient	Standar Error	t-Statistic	P-value
Constant	–0.0449	0.0612	-0.7348	0.4654
ΔLnPINV(−1)	0.3034**	0.1244	2.4384	0.0178
ΔLnTAX	0.1059	0.0811	1.3066	0.1964
ΔLnGE	1.0473***	0.1939	5.4004	0.0000
ΔLnM	6.5353	6.7374	0.9700	0.3360
ΔLnEXCH	–0.9828	2.7390	-0.3588	0.7210
ECM(−1)	–1.5004***	0.2011	–7.4604	0.0000
R-squared = 0.6600		Adjusted R-squared = 0.6255		

Short run diagnostic test	Test-statistic	P-value
Normality test (Jarque-Bera)	0.0249	0.9876
Breusch-Godfrey Serial Correlation	0.6067	0.4392
Heteroskedasticity: Breusch-Pagan-Godfrey	0.9302	0.4802
Ramsey Reset	0.2275	0.8208

Notes: ***, ** and * display significant at 1%, 5% and 10% levels, respectively.

result will be presented by Equation (4) with the ECM values calculated from the long-term estimations.

The short-term estimated result is also quite consistent with the long-term result. Among the tools of fiscal and monetary policy, there is only the coefficient of government spending that has a positive effect on private investment at the 1% significance level. Both the long-term and long-term estimated results find positive effects of government expenditure on private investment during the study period. This evidence highlighted the importance of fiscal policy on improving the expansion of private investment as well as the private economic sector. Besides, the coefficient of private investment lagged by one quarterly is positive and significant at 5%, which meaning the private investment help to drive itself (see Adams, 2009). The coefficient of the correction error terms (denoted by ECM_{t-1}) is –1.5 with a statistical significance of 1%, which shows that the adjustment speed from short-run to long-run equilibrium is very fast after policy shocks. The regression result also indicates that the short-term model explains 66% of the short-term volatility of private investment in the economy, which indicates that the estimated model has a reasonably good fit. In Table 4, the diagnostic tests conclude that the basic conditions of econometrics continue to be satisfied, ensuring the reliability of the regression results (Pesaran et al., 2001). Besides, the the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of the squares of recursive residuals (CUSUMSQ) values are completely within the range of the upper and lower critical bound values at the 5% significance level (Figure 1). The diagnostic tests imply that the short-term regressive coefficients of the ARDL model are stable and ensuring the reliability of the estimated results.

Conclusions

The paper aims to investigate the impact of fiscal and monetary policy on private investment in Vietnam, a transition country that has robust economic growth. The
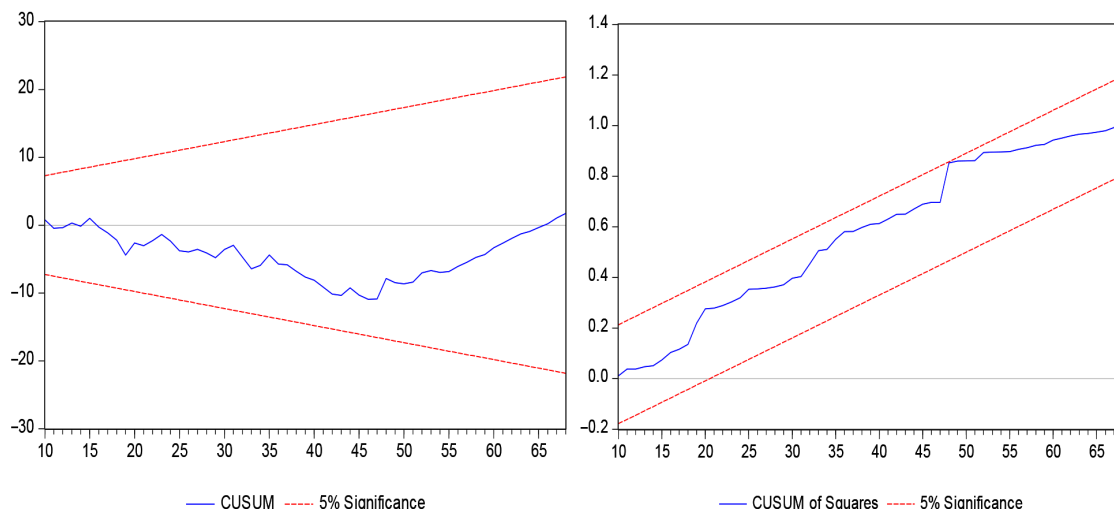

Figure 1. Plots of the CUSUM and the CUSUMSQ statistics

methodology is the ARDL bound test and the study data is a quarterly form collected for the period 2004–2020. The results show some remarkable findings as follows. In the long run, the tools of fiscal policy have positive impacts on private investment, however, there is only the coefficient of the government expenditure variable is statistically significant. Besides, the tools of monetary policy have inverse impacts on private investment in the long run. Specifically, the money supply has a positive effect (statistical significance at 5%) and the exchange rate has a negative impact (statistical significance at 10%) on private investment. In the long run, the impact of fiscal and monetary policy on private investment is quite clear. In the short run, the estimated result shows that only government expenditure has a positive and statistically significant effect on private investment. The regression coefficients of other policy variables are not statistically significant. Besides, private investment in the previous period is found to have a positive and significant impact on private investment in the current period. Finally, the estimated results have shown that, excluding the government expenditure variable, all the policy variables have lags before their impacts are statistically significant on private investment.

Based on the research results, policymakers need a proper direction to operate these important policies in Vietnam in the following time. First, there is a need to use government expenditure as an important tool to promote private investment. Obviously, government expenditure, especially on infrastructure systems, is essential to spur private investment. Besides, the results show that money supply has a strong impact on private investment because the financial leverage from the banking system is a common solution in business in developing countries such as the Vietnamese market. Policymakers need to continue to use the banking system as well as credit as effective tools to support the development of private investment. Finally, exchange rate policy needs to be kept in mind because its volatility is confirmed to have a negative impact on private investment. However, Vietnam's economy has a huge rate of trade openness, the adaptation of the exchange rate tool is understandable, so the evidence from this study is useful for the policymaking process in near future.

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