

Fiscal Effects of Foreign Aid in Thailand

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Abstract

This paper examines impacts of foreign aid on domestic borrowing, expenditure, and revenue, in Thailand from 1961 to 2014 by using VAR model and Granger causality tests. Our main findings are as follows. First, a negative relationship is found between foreign aid and domestic borrowing, which is considered to have an impact on Thailand's fiscal budget. Second, a clear relationship is not necessarily evident about the relationship between foreign aid and governmental expenditure. Third, no relationship is seen between governmental revenue and foreign aid. Fourth, it is difficult to acquire evidence of the impact of foreign aid on fiscal budget if limited to the 1960s and the 1970s. Overall, foreign aid to Thailand has certain impact on its fiscal budget through diminishing domestic borrowing although this result is different if the period is limited to the 1960s and the 1970s.

Keywords Foreign Aid, Thailand, Fungibility

5.1 Introduction

An element that offsets the impact of foreign aid is changing the recipient country's usage of their own budget. This problem is called "fungibility," which is a long-established term. Fungibility happens when the donor and recipient countries think differently, and use other methods that do not contribute to strengthening the productivity unless the recipient country receives the aid. More generally, Lloyd et al. (2009) summarizes that aid for investment (that promotes growth) may be "redirected" to consumption spending (which does not promote growth), and this undermines aid's effectiveness.

Thailand experienced the economic boom during the 1970s. First oil crisis in 1973 raised agricultural prices such as rice, maize, rubber, and sugar, and the macroeconomic operation went well. During the 1970s, governmental expenditure was increased. However, the second oil crisis happened in 1979 hit Thai economy. Unlike the first oil crisis in 1973, agricultural prices were not raised. Due to the world recession, inflation, decreased export and current account deficit happened. At the same time, the fiscal deficit was enlarged by the increased expenditure and diminished revenue. As a result, Structural Adjustment Loan was

financed by the World Bank in 1982 and 1983, together with the economic reform including the fiscal policy discipline. During the head of 1980s, Thai government made effort for policy and system change including eliminating the fiscal deficit, and the yen appreciation after 1985 boosted Thai economy until 1997 financial crisis. From the historical point of view, the fiscal policy discipline in Thailand seems to have been worked relatively well especially after 1980s. Hence foreign aid to Thailand also seems to facilitate as substitute of the fiscal budget in Thai government.

This chapter is organized as follows. Section 5.2 summarizes the literature review about the fungibility. Section 5.3 describes the methodology and empirical result about foreign aid and fiscal response in Thailand in the whole term and from the 1970s to the 1980s. Section 5.4 concludes the study.

5.2 Literature Review

In the 70-year history of foreign aid, the concept of fungibility has existed from the beginning. Nurkse (1953) introduces the concept of fungibility as an apocryphal story between the Economic Cooperation Administration (ECA) and the Austrian government following World War 2, “The Austrian government, so the story goes, asked for the release of counterpart funds to reconstruct the Vienna opera. The E.C.A. is said to have replied that this would not be a productive investment and that the release could not be granted for this purpose. Then the Austrian government remembered that it was itself financing the construction of an electric power plant in the mountains. It went back to the E.C.A. and asked for a release of counterpart funds to pay for this piece of construction, to which the E.C.A. agreed. So all that happened was a switch: the wily Austrians, having got the E.C.A. to take over the financing of the power plant, now financed the reconstruction of the opera from their own resources.” (Nurkse, 1953, p. 96). World Bank (1998) also implied that the problem of fungibility is difficult to solve. Normally, fungibility occurs when the donor country and the recipient country have differing opinions, and the project includes the problem of the induce effect as mentioned earlier. The recipient country increases government consumption expenditure or reduces governmental investment expenditure.

The analysis of fungibility is divided into two parts. The first part is examining each field such as sanitation and education. The second part pertains to analyzing the macroeconomic point of view by measuring the fiscal response such as the domestic borrowing, governmental

expenditure, and governmental revenue. This research examines the effect of fungibility from the macroeconomic perspective.

The impact of foreign aid on the fiscal budget of the recipient country is divided into two methods: calibrating the economic model and regressing with time series data. The first is through the “fiscal response model,” maximizing the governmental utility function under the budget constraint. Franco-Rodriguez et al. (1998) completes this model and analyzes the fiscal response by the foreign aid in Pakistan from 1956 to 1995. The results show that the increase in foreign aid reduces the governmental consumption income nearly two times, increases governmental investment expenditure at 5%, and reduces the total governmental expenditure. This indicates that foreign aid does not necessarily result in fungibility. Although this approach still exists, there are two differing opinions: how we measure the utility function of the government, and that the way for impacts may be more complicated.

The second method is examining the relationship between foreign aid and fiscal budget, such as governmental revenue, expenditure, and domestic borrowing by using the vector autoregression (VAR) model. This methodology is further divided into two: estimating ordinary least squares (OLS) as the long-term relationship and using the VAR model as the short-term relationship. Studies have primarily used the VAR model since the impact of foreign aid may be more complicated. For the practical use of the VAR model, Bwire (2012) and McGillvray and Morrissey (2004) summarized the impact of foreign aid with regard to the governmental budget. Since most of the foreign aid goes into the governmental sector, the effect can be seen in the governmental budget. More precisely, the governmental budget is divided into three parts: domestic borrowing, governmental expenditure, and government revenue. First, the inflow of foreign aid leads to the decrease in domestic borrowings, which is evidenced by several studies. Hence, fungibility can be a result if domestic borrowings does not decrease despite the increase in foreign aid. Second, the impact on governmental expenditure will decrease with the increase in foreign aid. If not, this can be considered as fungibility. Since governmental expenditure is decided by the political situation, previous studies do not always clearly indicate the impact. In McGillvray and Morrissey (2004) mentions as follows: “In other words, the absence/presence of aid did not directly alter public expenditure patterns but rather affected government borrowing from the domestic economy” (McGillvray and Morrissey 2004, p. 88). Governmental expenditure can also be divided into governmental consumption and investment expenditure. Under normal circumstances, the governmental consumption expenditure does not decrease if the recipient country has profits.

However, governmental investment expenditure is not considered as fungibility since it contributes to capital accumulation. Third, the impact of increased foreign aid on governmental revenue will be considered, which, in theory, is affected by tax reduction and increased productivity. However, many previous studies do not indicate a relationship between foreign aid and governmental revenue.

From regional analysis, studies show that fungibility primarily happens in African countries (Aiyar and Ruthbah, 2008; Osei et al., 2005; Martins, 2010) as shown in Table 5.1. As regards Asian countries, similar analyses were held prior to the 1990s (Franco-Rodriguez et al., 1998; Khan and Hoshino, 1992; McGillvray and Ahmed, 1999). However, fungibility has not been examined for Asian countries in recent times because the fiscal budget seems to have been used efficiently in recent years.

Table 5.1 Impact of foreign aid per 1% GDP increase

	Full sample		Africa		Aid dependent	
	Short-run	Long-run	Short-run	Long-run	Short-run	Long-run
Absorption	0.30***	0.83***	0.41***	1.11***	0.45***	1.13***
Spending	0.56***	1.60***	0.79***	2.14***	0.68***	1.48***
Reserves	0.05	0.05	0.01	0.00	0.06	0.00
Investment	0.14***	0.26***	0.15***	0.26***	0.19***	0.33***

Note From Aiyar and Ruthbah (2008) and Martins(2010).

***: significance at 1%, **: significance at 5%, *: significance at 10%.

This study analyzes the effect of Thailand's foreign aid on its governmental budget. The contributions of this study are as follows. First, the efforts in protecting fiscal regulation and development are compatible in the example of Thailand. Second, the attitude of the recipient country is important for combining both sides, as compared to the situation prior to the 1970s. Third, the results of this study can be applied to emerging developing countries in southeast Asia, such as Myanmar and Vietnam. Given this background, this study examines fungibility in Thailand from 1961 to 2014 using the VAR model, the Granger causality tests, and the impulse response tests.

5.3 Methodology

5.3.1 Data

We use annual fiscal data for Thailand from 1961 to 2014 since 1977 in “Fiscal Budget in Thailand” by the Ministry of Finance, Royal Thai Government. In addition, fiscal data is also available in the “Monthly Bulletin” since 1961 by the Bank of Thailand. Although data from the Bank of Thailand covers a longer period, it has been changed in its definition after the 1997 crisis. In contrast, data from the Ministry of Finance holds the same definition although it covers a shorter period. In this study, from the Bank of Thailand, we use data prior to 1998, and from the Ministry of Finance, we use data from 1998 onwards. Aid data has been adopted from Development Assistance Committee and Organisation for Economic Co-operation and Development, which includes loan, grant, and technical assistance in the net base. Since this data is in US dollars, it has been converted into Thai baht using International Financial Statistics in International Monetary Fund. Finally, all statistics have been adjusted by Consumer Price Index (2010 price). Data description is shown in Table 5.2. All variables are I(1) from the result of the unit root test.

Table 5.2 Data description (billion Thai Baht, 2010 prices)

Title	Name	Number	Mean	Std	Maximum	Minimum
Domestic Borrowing	DB	54	61.725	104.258	455.493	-99.054
Governmental Revenue	R	54	738.216	589.899	1,978.129	68.260
Governmental Expenditure	GD	54	791.436	651.327	2,267.706	70.483
Governmental Consumption Expenditure	GDC	54	602.166	508.125	1,859.472	56.034
Governmental Investment Expenditure	GDK	54	185.178	153.567	516.786	14.449
Net Official Development Assistance	NETODA	54	12.387	17.013	49.669	-49.819

(Source) Author’s calculation.

5.3.2 Total Governmental Expenditure

We will first estimate governmental expenditure as one variable. We will assume that domestic borrowing is regressed by foreign aid, governmental revenue, and governmental expenditure.

First, we check whether or not there is cointegration. We will then assume that the domestic borrowing is regressed by foreign aid, governmental revenue, and governmental

expenditure through OLS, and the residual is tested by the Engle-Granger test. The residual is I(0) and is estimated in equation (5.1).

$$DB_t = -0.712NETODA_t - 0.557R_t + 0.588GD_t + 16606.55 + u_t \quad (5.1)$$

(0.392)* (0.054)*** (0.050)***

*Adj. R*² = 0.813 *D.W.* 1.507

Note DB_t : Domestic Borrowing, $NETODA_t$: Net ODA, R_t : Governmental Revenue, GD_t : Governmental Expenditure, in period t.
Standard error in parentheses. ***: significance at 1%, **: significance at 5%, *: significance at 10%.

From equation (1), Durbin-Watson ratio is relatively low, but foreign aid reduces domestic borrowing at the 10% significance level. In addition, both governmental revenue and governmental expenditure are significant at 1%, and the sign conditions are the same. From this equation, the long-term relationship is not necessarily seen among foreign aid and fiscal budget.

Next, the VAR model is estimated in equation (5.2), and the cointegration is estimated by the level series. The VAR model is used to estimate domestic borrowing (DB), net official development assistance (NETODA), governmental revenue (R), and governmental expenditure (GD) at the previous period (t-1). α_i (i = 1,2,3,4) is the constant term, $\beta_i, \gamma_i, \delta_i, \kappa_i$ are the endogenous terms, and u_{it} is the error term.

$$\begin{bmatrix} DB_t \\ NETODA_t \\ R_t \\ GD_t \end{bmatrix} = \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \\ \alpha_4 \end{bmatrix} + \begin{bmatrix} \beta_1 & \gamma_1 & \delta_1 & \kappa_1 \\ \beta_2 & \gamma_2 & \delta_2 & \kappa_2 \\ \beta_3 & \gamma_3 & \delta_3 & \kappa_3 \\ \beta_4 & \gamma_4 & \delta_4 & \kappa_4 \end{bmatrix} \begin{bmatrix} DB_{t-1} \\ NETODA_{t-1} \\ R_{t-1} \\ GD_{t-1} \end{bmatrix} + \begin{bmatrix} u_{1t} \\ u_{2t} \\ u_{3t} \\ u_{4t} \end{bmatrix} \quad (5.2)$$

The VAR model estimates that each variable in the previous period influences the ones in the present period. In this chapter, we primarily examine the significance, sign condition, and coefficient of $NETODA_{t-1}$ compared to other variables, $DB_t, R_t,$ and GD_t , since the aim is to decipher the fiscal response of foreign aid. The estimated results from the VAR model are shown in Table 5.3. Examining the impact of foreign aid in the previous period, $NETODA(-1)$, on $DB, R,$ and GD , it can be seen that the relationship between foreign aid in the previous period and domestic borrowing in the present period is negatively estimated at the 1% significance level, and the relationship between foreign aid in the previous period and governmental expenditure meets with the sign condition at 1%. This result indicates that increased foreign aid decreases domestic borrowing and governmental expenditure, which is ideal for the substitution of governmental budget.

Next, the Granger causality test is estimated. We also see causality from foreign aid (NETODA) in relation to other variables (DB, R, and GD) since the aim of this study is to examine the effect of foreign aid.

Table 5.4 shows that the Granger causality for foreign aid to domestic borrowing is significant at the 5% level. In addition, the effect of foreign aid on domestic borrowing is inferred in the negative since the sign condition is minus in the VAR model in Table 5.3. In contrast, governmental expenditure and revenue by foreign aid do not have causality in terms of the Granger causality test.

Table 5.3 VAR model (net Official Development Assistance, domestic borrowing, governmental revenue, and governmental expenditure)

	DB	NETODA	R	GD
DB(-1)	0.271 (0.204)	-0.056 (0.038)	0.503 (0.236)**	0.531 (0.233)**
NETODA(-1)	-1.261 (0.561)**	0.609 (0.105)***	0.179 (0.651)	-1.574 (0.642)***
R(-1)	-0.244 (0.142)*	-0.008 (0.027)	1.263 (0.164)***	0.852 (0.162)***
GD(-1)	0.284 (0.145)*	0.009 (0.027)	-0.269 (0.168)	0.196 (0.166)
C	20.680 (17.153)	7.032 (3.206)**	18.678 (19.891)	33.007 (19.613)*
Adj. R-squared	0.646	0.537	0.985	0.988

Note DB: domestic borrowing, NETODA: net ODA, R: governmental revenue, GD: governmental expenditure in the period t. (-1) denotes the previous period. Standard deviation in parentheses. ***: significance at 1%, **: significance at 5%, *: significance at 10%.

Table 5.4 Granger causality tests

Null hypotheses	obs.	F-statistics	Null hypotheses	obs.	F-statistics
NETODA → DB	53	4.796**	R → NETODA	53	0.491
DB → NETODA	53	6.204**	NETODA → R	53	0.136
R → DB	53	3.666*	GD → NETODA	53	1.117
DB → R	53	2.328	NETODA → GD	53	1.351
GD → DB	53	4.512**	GD → R	53	0.345
DB → GD	53	6.160**	R → GD	53	24.849***

Note DB: domestic borrowing, NETODA: net ODA, R: governmental revenue, GD: governmental expenditure. Standard deviation in parentheses. ***: significance at 1%, **: significance at 5%, *: significance at 10%.

These results show that increased foreign aid affects domestic borrowing relatively in the short-term, but not governmental revenue or expenditure, which consistent with results of previous studies. In addition, these results are also adequate to the effort of protecting the fiscal policy discipline in the Thai government.

5.3.3 Categorizing Consumption Expenditure and Capital Expenditure

The impact of foreign aid on fiscal budget, specifically governmental expenditure, is divided into governmental consumption and capital expenditure.

First, we check if the variables have cointegration. OLS is estimated in equation (5.3), and the error term is tested by the Engle-Granger test, which is I(0).

$$DB_t = -0.354NETODA_t - 0.524R_t + 0.661GDC_t + 0.232GDK_t + 11.951 + u_t \quad (5.3)$$

(0.333) (0.047)*** (0.044)*** (0.087)*** (10.022)

*Adj. R*² = 0.872 *D.W.* 1.453

- (Note)1. DB_t : Domestic Borrowing, $NETODA_t$: Net ODA, R_t : Governmental Revenue, GDC_t : Governmental Consumption Expenditure, GDK_t : Governmental Capital Expenditure, GD_t : Governmental Expenditure, in period t.
 2. Standard error in parentheses. ***: significance at 1%, **: significance at 5%, *: significance at 10%.

From equation (5.3), it can be seen that foreign aid is insignificant and is not satisfied with the sign condition. Other explanatory variables, that is, governmental revenue, governmental consumption expenditure, and governmental capital expenditure, are significant and satisfied with the sign condition.

Next, the VAR model is estimated similar to equation (5.2). The only difference is that governmental expenditure is divided into governmental consumption expenditure (GDC) and governmental capital expenditure (GDK). In addition, the Granger causality tests were applied. We can also see the correlation of foreign aid (NETODA) to other variables. The estimated results of the VAR model and the Granger causality tests are shown in Table 5.5. The results of the VAR model show that the foreign aid in the previous period, $NETODA(-1)$, is negatively estimated in the domestic borrowing at 5%, and GDC and GDK at 10%. In contrast, there is no effect on governmental revenue. These results are consistent with the results in governmental consumption as a whole. Next, the Granger causality tests show that only domestic borrowing is significantly estimated. This also estimates the impact of foreign aid from the previous period to the present period in each governmental budget variable.

Table 5.5 VAR model and Granger causality tests

	DB	NETODA	R	GDC	GDK
DB(-1)	0.018 (0.287)	-0.061 (0.054)	0.091 (0.320)	-0.283 (0.186)	0.023 (0.152)
NETODA(-1)	-1.154 (0.565)*	0.613 (0.107)***	0.372 (0.630)	-0.643 (0.367)*	-0.574 (0.299)*
R(-1)	-0.381 (0.182)**	-0.011 (0.034)	1.080 (0.203)***	-0.002 (0.118)	0.391 (0.096)***
GDC(-1)	0.502 (0.223)**	0.014 (0.042)	0.043 (0.249)	1.127 (0.145)***	-0.296 (0.118)***
GDK(-1)	0.223 (0.158)	0.005 (0.030)	-0.428 (0.176)**	-0.175 (0.103)*	0.380 (0.084)***
C	19.072 (17.072)	6.978 (3.237)**	19.621 (19.030)	17.847 (11.099)	16.143 (9.052)*
Adj. R-squared	0.648	0.527	0.986	0.994	0.954

Null hypotheses	obs.	F-statistics	Null hypotheses	obs.	F-statistics
NETODA → DB	53	4.796**	GDC → NETODA	53	1.408
DB → NETODA	53	6.204**	NETODA → GDC	53	1.529
R → DB	53	3.666*	GDK → NETODA	53	0.286
DB → R	53	2.328	NETODA → GDK	53	0.613
GDC → DB	53	4.617**	GDC → R	53	3.790*
DB → GDC	53	4.130**	R → GDC	53	1.379
GDK → DB	53	3.089*	GDK → R	53	9.335***
DB → GDK	53	5.158**	R → GDK	53	21.445***
R → NETODA	53	0.491	GDK → GDC	53	1.015
NETODA → R	53	0.136	GDC → GDK	53	2.902*

Note DB: domestic borrowing, NETODA: net ODA, R: governmental revenue,

GD: governmental expenditure in the period t. (-1) denotes the previous period.

Standard deviation in parentheses. ***: significance at 1%, **: significance at 5%, *: significance at 10%.

These results indicate that the increase in foreign aid will cause a decrease in domestic borrowing in the short-term. In contrast, no causality was found in governmental revenue, governmental consumption expenditure, and governmental capital expenditure. These results are consistent with that of previous studies, where the results connect to the effort of reducing domestic borrowing, but it is difficult to see effects in governmental expenditure due to political conflict. These results are also suitable for the fiscal policy discipline in Thailand.

5.3.5 Impact of Foreign Aid in the 1960s and the 1970s

Although corruption has not been heard of in Thailand of late, the country seems to have experienced it in the 1960s and the 1970s. While foreign aid has been facilitated efficiently for the fiscal budget in Thailand during the whole period, it is still unclear if the different trend

may be included before the financial crisis and the introduction of foreign capital in the 1980s. Therefore, this section examines the effect of foreign aid from 1961 to 1979 using the VAR model and Granger causality tests. Since the estimation results do not depend on governmental expenditure divided into governmental consumption and capital, this is examined at a time as comparison. First, estimated equations are shown in (5.5) and (5.6). Both of error terms are I(0), cointegrated. Coefficients of the net ODA are insignificant while other variables are significant. These results indicate that foreign aid at that time was barely useful in reducing domestic borrowing in the long-term.

$$DB_t = 0.335NETODA_t - 0.678R_t + 0.274GD_t - 4.011 + u_t \quad (5.5)$$

(0.850) (0.164)*** (0.128)*** (6.952)

Adj. $R^2 = 0.776$ D. W. 2.295

$$DB_t = 0.336NETODA_t - 0.680R_t + 0.726GDC_t + 0.722GDK_t - 3.982 + u_t \quad (5.6)$$

(0.904) (0.279)** (0.330)** (0.299)** (8.339)

Adj. $R^2 = 0.760$ D. W. 2.295

Note DB_t : Domestic Borrowing, $NETODA_t$: net ODA, R_t : Governmental Revenue, GDC_t : Governmental Consumption Expenditure, GDK_t : Governmental Capital Expenditure, GD_t : Governmental Expenditure, in period t.

Standard error in parentheses. ***: significance at 1%, **: significance at 5%, *: significance at 10%

Since it includes cointegration, the VAR model applied in the level series. The estimation results are shown in Table 5.6. The column of net ODA shows that in the previous period with regard to domestic borrowing, governmental revenue, and governmental expenditure no variables are significantly estimated. This result does not change even if governmental expenditure is divided into governmental consumption and capital expenditure. Next, the Granger causality tests are shown in Table 5.7. Observing foreign aid to other variables, no variables are significantly estimated. This result does not change even if governmental expenditure is divided into governmental consumption expenditure and governmental capital expenditure.

From these results, we infer that foreign aid did not have an impact on fiscal budget even with domestic borrowing in Thailand during the 1960s and the 1970s.

Table 5.6 VAR model in the 1960s and the 1970s

	DB	NETODA	R	GD
DB(-1)	-0.387	0.107	0.043	-0.319
	(0.386)	(0.057)*	(0.190)	(0.410)
NETODA(-1)	1.426	1.086	-1.589	0.178
	(2.031)	(0.301)***	(0.999)	(2.157)
R(-1)	-0.628	0.137	0.820	0.357
	(0.375)	(0.055)**	(0.184)***	(0.398)
GD(-1)	0.738	-0.111	0.224	0.831
	(0.351)*	(0.052)**	(0.173)	(0.373)**
C	-10.692	-3.236	11.859	-2.441
	(16.603)	(2.458)	(8.163)	(17.633)
Adj. R-squared	0.496	0.610	0.986	0.958

	DB	NETODA	R	GDC	GDK
DB(-1)	-0.403	0.109	0.049	-0.208	-0.155
	(0.401)	(0.059)*	(0.198)	(0.209)	(0.253)
NETODA(-1)	0.724	1.189	-1.333	-1.178	-0.606
	(2.796)	(0.414)***	(1.378)	(1.459)	(1.762)
R(-1)	-0.502	0.118	0.774	0.433	0.276
	(0.509)	(0.075)	(0.251)***	(0.266)	(0.321)
GDC(-1)	0.547	-0.083	0.293	0.537	-0.240
	(0.620)	(0.092)	(0.306)	(0.324)	(0.391)
GDK(-1)	0.973515	-0.145927	0.137618	0.543009	0.948072
	(0.719)	(0.107)	(0.355)	(0.375)	(0.453)*
C	-9.393	-3.427	11.385	-3.265	4.460
	(17.514)	(2.594)	(8.635)	(9.139)	(11.039)
Adj. R-squared	0.460	0.583	0.985	0.982	0.744

Note DB: domestic borrowing, NETODA: net ODA, R: governmental revenue,
GDC: governmental consumption expenditure, GDK: governmental capital expenditure,
GD: governmental expenditure in the period t. (-1) denotes the previous period.
Standard deviation in parentheses. ***: significance at 1%, **: significance at 5%, *: significance at 10%.

Table 5.7 Granger causality tests in the 1960s and the 1970s

Null hypotheses	obs.	F-statistics	Null hypotheses	obs.	F-statistics
NETODA → DB	18	1.577	R → NETODA	18	4.036*
DB → NETODA	18	1.421	NETODA → R	18	0.771
R → DB	18	2.996	GD → NETODA	18	2.579
DB → R	18	3.689*	NETODA → GD	18	0.024
GD → DB	18	5.076**	GD → R	18	4.906**
DB → GD	18	4.725**	R → GD	18	5.001**

Null hypotheses	obs.	F-statistics	Null hypotheses	obs.	F-statistics
NETODA → DB	18	1.577	GDC → NETODA	18	3.089*
DB → NETODA	18	1.421	NETODA → GDC	18	0.094
R → DB	18	2.996	GDK → NETODA	18	1.076
DB → R	18	3.689*	NETODA → GDK	18	0.004
GDC → DB	18	3.770*	GDC → R	18	7.102**
DB → GDC	18	2.383	R → GDC	18	5.089**
GDK → DB	18	8.920***	GDK → R	18	1.872
DB → GDK	18	2.152	R → GDK	18	2.357
R → NETODA	18	4.036	GDK → GDC	18	0.003
NETODA → R	18	0.771	GDC → GDK	18	1.216

Note DB: domestic borrowing, NETODA: net ODA, R: governmental revenue, GDC: governmental consumption expenditure, GDK: governmental capital expenditure, GD: governmental expenditure.
Standard error in parentheses. ***: significance at 1%, **: significance at 5%, *: significance at 10%.

5.4 Conclusion

This chapter examined the impact of foreign aid on fiscal budget, especially with regard to domestic borrowing, governmental expenditure, and governmental revenue in Thailand by using the VAR model and Granger causality tests. Previous studies indicate that foreign aid impacts domestic borrowing while it barely has an influence on governmental revenue. Although the influence of foreign aid on governmental expenditure is often seen, it is difficult to see an impact on domestic borrowing partly because of political influence.

The results are the same in the case of Thailand. As for the relationship between foreign aid and domestic borrowing, a negative relationship is found. This result implies that foreign aid acts as a substitution, and is considered to have an impact on Thailand's fiscal budget. This result is also suitable for the stance of the government of Thailand, which has a severe fiscal deficit. With regard to the effect of foreign aid on governmental revenue, no relationship is seen. Most previous studies also show no relationship, and it is also difficult to show a relationship from a theoretical perspective. Therefore, a clear relationship is not necessarily evident about the relationship between foreign aid and governmental expenditure. This is partly

because governmental expenditure is easily influenced by politicians compared to domestic borrowing.

In Thailand's case, for the whole period, that is, the 1960s and the 1970s, it is difficult to acquire evidence of the impact of foreign aid on fiscal budget. This indicates that introducing severe fiscal discipline and implementing policies regarding foreign capital after the 1980s in the government of Thailand can change the impact of foreign aid. Overall, foreign aid to Thailand has certain impact on its fiscal budget through diminishing domestic borrowing. However, this result is different if the period is limited to the 1960s and the 1970s partly because the effort of the fiscal consolidation from the 1980s in Thai government facilitates well.

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