

Political Determinants of Government Budget Allocation in Thailand

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ABSTRACT

This study analyzes the military influence and coalition party hypotheses on the allocation of budgetary spending among the administrative ministries in Thailand. Using the annual data on ministry budgets during the period of 1980-2013, the empirical findings reveal strong military and coalition parties relationships with the budget allocations. For instance, the share of budgetary spending for the Ministry of Science and Technology and Ministry of Agriculture and Cooperative are negatively affected by a non-elected government, an executive minister being in the same party as the prime minister, or having an outsider minister.

Keywords: Ministry budget; Budget allocation; Political influence.

JEL classification: D72; H30; H50.

1. Introduction

The budget formulation process in Thailand involves a large number of stakeholders ranging from political parties, the prime minister and his executive Cabinet, as well as, civil and military bureaucrats. Since a ministry's budget must pass the approval of its minister, the prime minister, and the Cabinet of ministers, this study would like to address the question of how the characteristics of the prime minister and his executive Cabinet, an eligibility of an administrative government, and the negotiation power of a coalition party influence the share of budgetary spending for each administrative ministry.

Although Thailand has enacted the parliamentary regime since 1932, the democratic system of the country was deprived by various military coup d'états and weak political institution. Over the course of 83 years, the country encountered altogether 24 military rebellions with 13 successful attempts. 11 of the total of 28 Prime Ministers (PM) in Thailand did not come from a democratic election but were appointed by the junta. Four of them were retired senior civil officers, while the others were former senior commanders in the force. Another former commander in chief was designated to be PM twice by majority of the political parties that won the national election. With both military and democratic electoral supports, General Prem Tinnasulanonda was the PM who held the office for the longest period of 8 years (1980-88). After General Prem, however, a number of retired military commanders had become officials through various competitive elections. There thus exists a strong correlation between Thai armed force and the political administrations of the country throughout history of Thailand.

The stability of Thai governments seems to rely more or less on the military's endorsement regardless of how the governments were qualified. Yet, no empirical evident has tested whether or not the armed force had a significant influence on government budget setting.

In another word, whether the pattern of budget allocation under an elected government differs significantly from that of a junta; whether or not the military background of the PM matters in public budgeting. Answers to these questions will shed some light on the role of military on public spending in Thailand. Findings from this study hence will contribute to a better understanding of the government budget allocation in a developing country where military plays a key role in shaping political regime of the country.

Furthermore, prior to the electoral reforms in 1997, none of the political parties in Thailand could win enough seats in the House of Representatives to form a single-party government. A party with the largest number of representative can turn out to be an opposition government if it fails to hit a deal with a number of smaller parties to secure its agendas in the parliament. A party with merely a few members in the parliament sometimes became a ‘swing voter’ in determining which party can form an administrative government. The bargaining power of a coalition party usually depended on the number of votes it held in the House. A coalition party can negotiate for positions in the Cabinet and likely may request for a higher expenditure share for the ministers they were in charge either to carry out the party’s public policies, or to maximize their own benefits. It is, therefore, the second objective of this study to investigate the effect of a coalition party on the share of public expenditure allotted to each line ministry. We wonder whether there exist any political factors that affect the budget allocation for any ministry in particular or can be used to explain the share of budgetary spending for most of the ministries.

It is worth noted here that, the overall public spending in Thailand is predetermined annually by four economic agencies known as the Gang of Four, i.e., the Bank of Thailand, the Ministry of Finance, the National Economic and Social Development Board, and the Bureau of

the Budget¹. The four agencies will jointly calculate the possible public revenue that Thai government will generate over the year according to their assumptions of the economic activities, as well as, the level of public debt if necessary for capital investment or any public programs in accordance with the National Development Plan. The budget framework will first be approved by the parliament, and then be used as a guideline for government budgetary spending. As a consequence, each line minister cannot plan its expenditure in excess of the overall ceiling but have to negotiate with their coalitions for a share within the total amount approved by the parliament.

The pattern of budget setting in Thailand is quite consistent with the recent empirical tests where researchers have shifted their focus from the level of public expenditure to the change in its composition. For an increase in the overall government spending can easily be observed by media thus will be questioned and require for a justification to both the public and the parliament. On the contrary, a change in the composition of government spending can be excused as an adjustment in the government's policies to better fit an annual economic situation or government's action plans. Therefore, this study will analyze government's budget share to each line ministry to see whether the characteristics of an executive minister and his political party have any influence on the budget allocation of the central government.

Using the annual data during the period of 1980-2013 and the econometric model of budget allocation, the study empirically found that prime ministers with military background robustly allocated more budget shares towards the Ministry of Foreign Affairs and Ministry of Education at the expense of the Ministry of Finance and Ministry of Justice. As the percent share of members in the parliament of the leader party increase, more public spending is allotted to the

1. See Blöndal and Kim (2006) for a detailed report on the budget formulation process in Thailand.

Central Fund for the prime minister and less to the Office of the Prime Minister. Finally, it is interesting to find that the share of budgetary spending for the Ministry of Science and Technology and Ministry of Agriculture and Cooperative are significantly negatively affected by a non-elected government, an executive minister being in the same party as the prime minister, or having an outsider minister. The results thus indicate a negative effect of a military coup and weak political institutions on the country's long term investment in the science and technological advancement and the agricultural development in particular.

The remainder of the paper is as follows. Section two provides a related literature review on this area. Section three presents an empirical model for the analysis together with the hypotheses testing. Data description and the empirical issues are discussed in section four. The empirical results are analyzed in section five. Then, we conclude in section six.

2. Literature review

Political factors can have a significant influence on government budget setting. The issue has been investigated extensively using both empirical and theoretical methodologies. The political budget cycle theory explained that elections may place pressure on politicians to pursue the policies that increase their chances to be re-elected. According to Nordhaus (1975), one of the main goals of incumbent governments is to remain in power. They hence are likely to stimulate the economy prior to an election so as to increase their re-election probabilities.

Election years were found to affect the pattern of public expenditures (Rogoff and Sibert 1988) as well. Focusing on the dynamics of the overall budget, a recent study by Vergne (2009) pointed out that politicians would attempt to change the allocation of public expenditures in an

election year by shifting towards more visible current spending and away from capital investment as the latter would take years before its outcomes be realized by voters.

Another strand in the literature is partisan theory (Hibbs 1977; Alesina 1987). Since different governing parties may pursue different economic goals, for instance, a left-wing party prefers a lower unemployment rate over low inflation; whereas a right-wing party would put their emphasis on a low inflation rate instead. This contradict policy objective might lead to different government budget settings. In addition, the number of governing parties in a coalition government can be related to the size of the government expenditures. Weingast et al. (1981) illustrated that the size of the government expenditures is larger with more parties in a coalition, for the decision costs increase with the number of decision-makers involved in the budget formulation.

Furthermore, other studies have focused their attention on the federal budget allocation towards the state governments. Larcinese et al. (2006), for instant, analyzed the impact of the US president on the federal budget allocation to the states during the period of 1982-2000. They found that presidents are engaged in a tactical distribution of federal funds. States with a high share of presidential votes in the past presidential election or with a governor belonging to the party of the president tend to be rewarded with more federal funds; whereas states with a governor from the opposition parties tend to be penalized in terms of federal funds received. Grossman (1994), Levitt and Synder (1995), and Solé-Ollé and Sorribas-Navarro (2008) found that aligned states received more funds than unaligned states (controlled by opposition parties). In particular, Solé-Ollé and Sorribas-Navarro (2008) showed that aligned municipalities in Spain received over 40 percent more grants than unaligned municipalities. These findings are consistent with the ‘rewarding loyalty’ (or ‘core supporters’) hypothesis, in which government

funds are allocated more to municipalities where voters are clearly attached to the incumbent party. In contrast, Wright (1974) and Wallis (1987) found that more budgets are allocated to states with more volatility of the presidential vote in the elections. This is compatible with the 'swing voter' hypothesis, in which incumbent governments manipulate government funds to target swing and marginal states in the elections.

The first study that investigated government's budgeting in Thailand was Tinakorn and Sussangkarn (1996). They estimated the predicted share of Thai central government budgetary spending classified by functions compared to the average fiscal expenditures of 28 developing countries. The authors found that, on average, the government expenditure in Thailand was below the average pattern of the developing countries except for the spending of the national defense. Tinakorn and Sussangkarn (1996) argued that the result was not a surprise for Thai government administrations have often been under the military regimes. Tinakorn and Sussangkarn's study thus support the military influence hypothesis, but their study has not yet analyzed the effect of coalition parties on the public budget allocation.

In a subsequent work that attempted to incorporate political factors in the empirical model, Sudsawasd (2008) investigated the budget allocation of the Bangkok metropolitan administration to its districts. The study did not find any significant influence of political parties on the budget allocation of the Bangkok metropolitan administration. However, the results could be due to the fact that the Democrat party always won the majority votes in Bangkok province with enough representatives to form a single-party government. An analysis in this study that incorporates both military and coalition party characteristics in its empirical model not only fills in the scarce study on this issue from Thailand perspective, but it also helps to gain an

understanding of the national budget allocation among line ministries, where there are more players involved and could have a larger impact on the economic development of the country.

It is worth noting that most studies on government budget allocation focused on budget transferring from central government to local governments (e.g., Levitt and Snyder 1995; Larciness et al. 2006; Solé-Ollé and Sorribas-Nvarro 2008; Sudsawasd 2008) or other compositions of public spending like the functional classification or the economic classification (e.g., Tinakorn and Sussangkarn 1996; Potrafke 2006; Vergne 2009). However, we decide to examine the compositions of government expenditure using the administrative classification, for the budget allocation game in Thailand usually occurred within the administrative Cabinet where the planned budgetary spending for each line ministry is the payoff outcome of the bargaining game. The administrative classification thus is suitable for a country with a high political instability like Thailand, where governments may pursue their own interests and stability rather than the wellbeing of the citizens. To the authors' knowledge, none of the study has ever analyzed public expenditure at the ministerial level. We hence hope that an administrative classification of government spending may provide an illustration of how the central government budget allocation in developing country was influenced by the military and coalition parties.

3. Model specification

A variation of Vergne (2009)'s model on the allocation of public spending is employed in this study to examine the relationship between a number of political characteristics and the expenditure share to each line ministry. While Vergne (2009) analyzed the impact of elections on the composition of government expenditures using the functional classification of government expenditures, we instead analyze the impact of both the military and the coalition parties on the

composition of government expenditures using the administrative classification. Our empirical model is as follows.

$$Budget_{i,t} = \beta_0 + \beta_1 Budget_{i,t-1} + \beta_2 X_t + \beta_3 Political_{i,t} + \varepsilon_t ,$$

where $Budget_{i,t}$ stands for ministry i 's share of the planned expenditure budget in the fiscal year t .

The lagged dependent variable $Budget_{i,t-1}$ is included in the set of explanatory variables to capture the fact that Thai government administrations normally use the previous year expenditures budget as a guideline to form their current outlays. Vector X is the set of control variables. Following Vergne (2009), the vector X includes the level of development, measured by the logarithm of real income per capita ($GDPPC$). As a country becomes more developed, the composition of the budget allocation may change. Likewise, the degree of urbanization, measured by the logarithm of the percentage of urban population ($URBAN$), is included to examine whether level of urbanization could influence public spending on infrastructure, resulting in more budgetary funds for the Ministry of Transport. The degree of trade openness, measured by the ratio of exports plus imports to Gross Domestic Product (GDP) ($OPEN$), and the terms of trade (TOT) are included. They are used as proxies of how a country relies on the international trade; this may have some influence on the way a government allocates its spending also.

In order to control for demographic change, the study adds the young-age population aged between 0 and 14 years old as a percentage of the total population ($AGE14$) and the old-age population aged 65 and above as a percentage of the total population ($AGE65$). These two variables clearly should relate to the budgets of the Ministry of Education and the Ministry of Public Health. Furthermore, the effects of population, measured by the logarithm of number of

population (*POP*), and the unemployment rate (*UNEMPLOY*) are examined. As an increase in the number of population and the rate of unemployment may rise public spending on some unemployment aid programs and/or other forms of governmental assistance. That is, more budgetary funds could be allocated to the Ministry of Interior and the Ministry of Education who are involved with the well-being workers.

The time trend variable (*TREND*) is added to capture the overall pattern of change over time. In addition, the year 2003 dummy variable (*YEAR2003*), taking on the value of zero for years before 2003 and one for years 2003 and onwards, is introduced to capture the structural change of Thai ministries since 2003.² The recession dummy variable (*RECESSION*) equals to one for the years: 1997, 1998, and, 2009 when Thailand entered into a recession period, and zero otherwise. *RECESSION* thus is account for the effect of an economic downturn.

For the vector of political variable (*Political*), it consists of five explanatory variables of interest for this research. They are used to test our military influence hypothesis and a coalition party influence hypothesis on the budget allocation of Thai central government as follows.

1. *Non-elected government*. As mentioned that the democracy process in Thailand has not been stable, the political regime of the country has constantly moved back and forth between democratic elected and non-elected (post-coup) government. For the time period used in this analysis during the fiscal years of 1980-2013, three out of the 18 administrative cabinets were post-coup governments. We wonder whether a non-elected administration will allocate public spending differently from their elected counterparts. It is likely that a post-coup government may provide more federal fund for the military spending in order to gain trust and support from the ruling junta, but how this affects other ministries has not yet been investigated. The existing

2. In 2003, there was the creation of new ministries and departments (splitting from old ministries), which definitely have impacts on budgets allocated to the old ministries.

empirical finding on the post-coup government impact thus is still unclear. They seem to vary across countries, time period of data analyzed, and the explanatory variables employed (Zuk and Thompson 1982).

2. *Military background of a prime minister.* In addition to a non-elected government variable, prime ministers with high ranks in the armed force may have a different view of how to run the country as compared to their civilian counterpart. They perhaps may prioritize and divert more government budgetary funds toward military projects and foreign affairs while civilian PMs may emphasize on other economic activities. An empirical testing in this study will help to explain whether the military background of a prime minister has any influence on public spending and consequently the economic development in the long run.

3. *Share of Members in the Parliament.* As mentioned that the administrative government in Thailand usually were multi-party coalition governments. The share of Members in the Parliament (*Share of MP_i*) of a coalition party should indicate the party's negotiation power for executive positions in the Cabinet as well as the budget share for the ministers they are in charged. We will test this hypothesis to see whether or not the *Share of MP_i* has a positive influence on the composition of government expenditure at the administrative level.

4. *Political party of a minister.* The political party of an executive minister could have a large influence on how the budgetary funds would be allocated. There are several possible models explaining the role of political parties in the allocation of federal outlays (Levitt and Snyder 1995). For instance, there is the strong party model, in which a governing party that controls the government administration can target government expenditures to maximize some mix of policy and re-election goals. If a government administration allocates more budgetary funds to a ministry where its minister is a member of the PM's party, this will support the

hypothesis of rewarding loyalty. In contrast, a government administration might try to use a government budget as a tactical instrument to recruit the “partner parties” in the current cabinet or as compensation in joining a coalition government. Under this viewpoint, a ministry with its minister coming from the partner parties may be favored to receive more budget expenditures. This is compatible with the idea that incumbent governments distribute government funds to swing states in order to increase their chances of winning the next election (Lindbeck and Weibull 1987). The relationship between a political party of a minister and the ministry’s budget composition thus requires an investigation.

5. *Outsider ministers.* Outsider ministers are defined as those ministers appointed from “outside” the parliamentary system (or non-parliamentarians). Having an outsider as the minister-in-charge may present a serious handicap in the bargaining power of the ministry due to the lack of political power to negotiate for the budget as compared with those “inside” the parliamentary system. However, Yong and Hazell 2011 showed that many outsider ministers are found to have political experiences and received supports from the PM or political parties that invited them to join the cabinet. In Thailand, many outsider ministers are known as major financial supporters of governing parties. They thus might have more political power to manipulate the government budget than some “insider” ministers. It is unclear whether having an ‘*outsider*’ minister would have any significant influence on the central government budgetary allocation. It is now an empirical matter.

Table 1**The Vector of Political Variables**

Variable	Definition
<i>Non-Elected Government</i>	= 1 if a government is a non-elected government administration, = 0 otherwise.
<i>MILITARY PM</i>	= 1 if a prime minister is a former military officer, = 0 otherwise.
<i>Share of MP_i</i>	The percent share of Members in Parliament that minister <i>i</i> holds.
<i>LEADER_i</i>	= 1 if a minister <i>i</i> is from a quota of a prime minister or a member of a leader party in a multi-party coalition government or a member of a ruling single-party government, = 0 otherwise.
<i>OUTSIDER_i</i>	= 1 if a minister <i>i</i> is appointed from outside the parliamentary system, = 0 otherwise.

4. Data and empirical issues

The budgeting data used in this analysis are annual data of 13 ministries during the period of 1980-2013³. In addition, the study also includes an analysis of the Central Fund for the prime minister as it also shares a portion of public spending. The Central Fund normally is an expenditure budget setting aside for the prime minister to implement on any program that the PM requires but is not a responsibility to any administrative ministry. Data on the ministry budget are the planned expenditure budget and not the actual spending; for the composition of planned

3. Those 13 ministries are the Office of the Prime Minister, Ministry of Defense, Ministry of Finance, Ministry of Foreign Affairs, Ministry of Agriculture and Cooperatives, Ministry of Transport, Ministry of Commerce, Ministry of Interior, Ministry of Justice, Ministry of Science and Technology, Ministry of Education, Ministry of Public Health, and Ministry of Industry. The choices and scopes of ministries covered in this study are selected based on data availability for the entire period of 1980-2013. Hence, those five new ministries established after 1980 are not included in this analysis.

budget allocated to each line ministry were considered as the payoff outcomes of the executive Cabinet's budget bargaining game as explained. They are obtained from the annual report of *Thailand's Budget in Brief*. The macroeconomic data were extracted from the World Bank's *World Development Indicators*, the IMF's *International Financial Statistics*, and the *Penn World Table 8*. Data on military and political party variables derive from various sources ranging from newspapers, government websites, and government published documents (such as the Secretariat of the Cabinet and the Secretariat of the House of Representatives of Thailand, etc.)⁴

Table 2 presents the expenditures budget for each ministry during the fiscal years of 1980 - 2013. In the fiscal year of 1980, a total budget expenditure of 114,556.5 million baht was divided among administrative ministries. About 94 percent of the total budget was allocated to these 13 ministries⁵ plus the Central Fund for the prime minister. Ministry of Interior received the highest budget share of 21.2 percent. Ministry of Defense and the Central Fund of the PM came in second and third ranks of the total budget shares of 17.73 percent and 13.83 percent respectively. However, for the fiscal year of 2013, the total budget expenditures increased by almost 2,000 percent to the amount of 2,400 billion baht, and the ranking of budget composition also changed remarkably. Most of the budgetary fund was allotted to the Ministry of Education (19.17 percent), which ranked seventh in 1980. Though Ministry of Interior and the Central Fund for the PM remained in top three ranking, the budget composition for the Ministry of Defense has dropped down dramatically for 10.19 percent point. It is interesting to examine whether these changes occur due to changes in the economic phenomenon over time thus should be explained by the demographic and/or the macroeconomic variables contained in vector X , or they can be

4. Summary descriptive statistics for all variables are available upon requested to the authors.

5. The rest of the government budget was assigned to expenditures such as the state enterprise's budget and the revolving - budgetary funds' budget, in which the sizes of the budget share had been substantially increased from 6 percent to 25 percent during the study period.

better explained by the military thrust and the coalition party hypotheses indicated in the vector of political variables. Since the patterns of a ministry's budget share are distinct from each other, it is inappropriate to assume that the determinants of each line ministry's budget share are identical, especially when the roles of each ministry have changed over time.

For the estimation techniques, the disturbance terms are likely to be correlated across equations, since the budget share for each ministry is clearly correlated with each other. The Seemingly Unrelated Regression Equations (SURE) introduced by Zellner (1962) thus is an appropriated estimation for this study. Since the data employed is time series, the augmented Dickey–Fuller test is performed for the unit root test. If a series has a unit root, then the first differences are taken. This study also performs the Durbin alternative statistical test for serial correlation when the model contains a lagged dependent variable⁶. The test results cannot reject the null hypothesis of no first order serial correlation for each of the estimated equations at the 1 percent level of significance. In addition, the Breusch-Pagan test for heteroskedasticity is applied⁷. The findings cannot reject the null hypothesis of homoskedasticity.

6. See pages 420-421 of Woodridge (2006).

7. See pages 436-437 of Woodridge (2006).

Table 2

Ministry budget expenditures for the Fiscal Years (FYs) 1980 and 2013

Rank in FY 1980	Rank in FY 2013	Ministry	Ministry budget in FY 1980 (Million baht)	Ministry budget in FY 2013 (Million baht)	Share of budget in FY 1980 (in percentage of total budget)	Share of budget in FY 2013 (in percentage of total budget)	Percentage change in share of budget (in FY 1980-2013)
1	3	Ministry of Interior	24,290	309,205	21.20	12.88	-8.32
2	4	Ministry of Defense	20,307	180,811	17.73	7.53	-10.19
3	2	Central Fund	15,848	319,207	13.83	13.30	-0.53
4	5	Ministry of Finance	13,639	179,249	11.91	7.47	-4.44
5	8	Ministry of Agriculture and Cooperatives	9,440	73,039	8.24	3.04	-5.20
6	7	Ministry of Transport	8,828	96,072	7.71	4.00	-3.70
7	1	Ministry of Education	7,863	460,075	6.86	19.17	12.31
8	6	Ministry of Public Health	4,495	100,153	3.92	4.17	0.25
9	9	Office of the Prime Minister	902	25,382	0.79	1.06	0.27
10	11	Ministry of Science and Technology	855	8,962	0.75	0.37	-0.37
11	14	Ministry of Industry	526	6,425	0.46	0.27	-0.19
12	12	Minister of Foreign Affairs	462	7,902	0.40	0.33	-0.07
13	10	Ministry of Justice	389	19,534	0.34	0.81	0.47
14	13	Ministry of Commerce	240	7,460	0.21	0.31	0.10
		<i>Total planned budget</i>	<i>114,556.5</i>	<i>2,400,000</i>			

Source: The data are obtained from the *Thailand's Budget in Brief* (various years).

5. Empirical results

This section begins with the baseline estimation of each ministry's budget share using first vector X of the economic and demographic determinants as described in the model specification. In order to test the military influence and coalition party hypotheses, the baseline model is extended by including the military or political variables described in Table 1. At the end, we perform the robustness test to see if the results hold for different sets of explanatory variables.

5.1 Baseline Specification

The estimation results of the baseline specification in Table 3 confirm that the basic determinants of budget share for each individual ministry are dissimilar. Hence, they should be estimated separately. The findings can be summarized as follows.

An increase in the previous year budget share has a significant and negative effect on the current year budget share of the Office of the Prime Minister, Ministry of Defense, Ministry of Foreign Affairs, Ministry of Agriculture and Cooperatives, Ministry of Transport, Ministry of Commerce, Ministry of Public Health, and Ministry of Industry, but the effect is positive for the budget share of the Central Fund for the prime minister, Ministry of Justice, and Ministry of Science and Technology at the 10 percent level of significance.

As Thailand becomes more developed, measured by an increase in the real income per capita, Ministry of Agriculture and Cooperatives receives a larger share of government budget. Surprisingly, the degree of urbanization reduces the budget share allocated to the Ministry of Foreign Affairs, Ministry of Agriculture and Cooperatives, Ministry of Justice, and Ministry of Public Health respectively.

For the trade openness, an increase in total trade shares to GDP negatively affects the shares of government budget to Ministry of Foreign Affairs, while an increase in the terms of trade positively affects Ministry of Transport. For the demographic factors, as the young-age population ratio declines, budget composition of the Central Fund for the prime minister, the Office of the Prime Minister, and Ministry of Transport dwindle consequently. On the contrary, a rise in the old-age population ratio reduces the budget share of the Ministry of Justice.

Furthermore, an increase in the number of population negatively affects the shares of public expenditure for the Ministry of Defense, Ministry of Agriculture and Cooperatives, Ministry of Interior, Ministry of Public Health, and Ministry of Industry respectively. But an increase in the unemployment rate has a positive implication on the government budget allocated to the Ministry of Education and the Ministry of Public Health. This finding supports the view that governments raise education budgets when unemployment surges.

For the time-trend effect, holding other factors constant, Ministry of Justice experienced a significant positive time-trend effect on its budget share. The estimation results also reveal the importance of economic conditions on the government budget allocation, for more budgetary fund is allocated to the Office of the Prime Minister during a recession period.

5.2 Alternative Specifications

Table 4 presents the summary of the estimated results for each political variable on a ministry's budget share as follows.⁸

Non-elected government administrations and military background of a prime minister.

The origin of an administrative government is found to have a statistically significant influence

8. Due to space limit, the full regression results are not presented but available upon request.

on the government budget setting. As asserted by the military influence hypothesis, a non-elected government trends to divert more budgetary funds towards military related spending, mostly under the Ministry of Defense and the Ministry of Foreign Affairs. The result is consistent with Tinakorn and Sussangkarn's (1996), who found that the share of Thai central government budgetary spending on national defense was significantly higher than the average of 28 developing countries. An increase in the military related expenditure is likely to serve the interests of the ruling juntas or to gain a military support. However, it is worth to note that the more budgetary funds to finance military activity comes at an expense of the Ministry of Agriculture and Cooperatives and Ministry of Science and Technology, as the budget shares of these two ministries decline significantly.

In addition, it is interesting to find that a non-elected government also shifted a significant amount of funds to finance the activities of the Ministry of Commerce which customarily spends an enormous proportion of its budget on some populist programs like the price support for certain agricultural products, or price subsidies on some consumer goods. A populist policy of a non-elected government implies that a post-coup government also needs to gain a political approval from Thai citizens though they are not under a representative regime. Alternatively, a populist policy of a non-elected government may support Nordhaus' (1975) hypothesis that an incumbent government is likely to stimulate the economy prior to an election so as to increase their probabilities to win an upcoming election. It is possible for a junta government usually will follow by a general election within few years. However, the hypothesis on the populist policy of a non-elected government would require further investigation.

The military background of a prime minister is another relevant factor in the formulation of a government budget at the ministerial level. Similar to the non-elected government, a prime

minister with a military position reveals his military motives by allotting more budgetary funds to the defense related function as indicated in the estimation of the Ministry of Defense and Ministry of Foreign Affairs budget share, as well as the budget share to the Ministry of Education. An increase in the budgetary spending of these three ministries comes at an expense of the Ministry of Finance and Ministry of Justice, as the budget shares of the latter two ministries contract significantly.

Political party of a minister and the Share of MP of a minister. For the Ministry of Foreign Affairs, Ministry of Commerce, Ministry of Interior, and, Ministry of Education, the estimated results indicate that the share of budgetary spending on these four ministries increase as the administrative minister i and the PM belongs to the same political party. This relationship thus supports the “rewarding loyalty” hypothesis, in which a government administration targets its budgetary funds to reward loyal members of the leader party in the former election.

However, the opposite results hold for the Ministry of Agriculture and Cooperatives, Ministry of Transport, Ministry of Science and Technology, and Ministry of Public Health. That is the budget share to this other four ministries decline as the ministers in charge and the PM are members of the same political party. The finding supports the hypothesis that the leading party uses its budget as a tactical instrument to recruit partner parties to form a coalition for the current cabinet and/or for winning the next election. The leader party hence has to reduce the budget share for its own ministries.

For instance, notice that the share of budgetary spending for the Ministry of Transport usually ranks on the top-five of government budget share. The ministry is normally a quota of the leader party. Therefore, giving out this quota to a coalition party would imply that the leader party cannot gain substantial control of vote in the parliament thus require supports from its

coalitions. In this case, the bargaining power shifts to the partner parties. As a consequence, when the Ministry of Transport belongs to a coalition rather than the leader party, the share of budgetary spending of the ministry goes up.

For the share of MP, it is obvious that the variable has a significantly positive correlation with the share of budgetary spending for the Central Fund for the PM but negative correlation with the Office of the Prime Minister. As the vote of the leader party in the parliament increases, the party can keep more funds for their own leader and less to the Office of the Prime Minister which is a joint ministry of coalition parties. Furthermore, the budget share for the Ministry of Defense, Ministry of Foreign Affairs, Ministry of Commerce, and Ministry of Education also receive a significant positive influence as the share of MP of their minister rise. The result thus supports our coalition party hypothesis that an increase in the share of MP increases the negotiation power of the coalition party. However, the hypothesis does not hold for the Ministry of Agriculture and Cooperatives, Ministry of Transport, and Ministry of Public Health as the budget share to this later group declines as the share of MP of their minister increases.

Outsider ministers. *Outsider minister* gives a mixed result. For the Ministry of Agriculture and Cooperatives, Ministry of Interior, Ministry of Science and Technology, and Ministry of Industry, the regression results suggest that non-parliamentarian ministers have a statistically significant negative impact on the share of public spending allotted to their ministries. It reflects the fact that *outsider* ministers have less negotiation power compared to their *insider* counterpart. However, for the Ministry of Foreign Affairs, Ministry of Commerce, and, Ministry of Education, their budget share increase significantly as the ministry is governed by an *outsider*.

5.3 Robustness Test

The estimation results raise the question whether they will hold for different sets of explanatory variables. In this section, the baseline regression is extended by including all five political variables as regressors so as to identify the estimated coefficients of each political variable, if the estimated coefficient still remains significant with the same sign as before. The testing results are referred to as ‘robust relationship.’ If the coefficients become insignificant or the signs turn opposite, the robustness testing results are referred to as ‘non-robust relationship.’ The results for robustness testing are reported in Table 5 as follows⁹.

The relationships between a non-elected government and military-related expenditures are non-robust, while the positive impact of a non-elected government on the budget share allocated to the Ministry of Commerce remains robustly significant. The test results imply that our previous finding that the non-elected government would spend more budgets on the defense function as compared to the elected government is not necessary hold as the set of explanatory variables are adjusted. However, the negative impact of a ‘*non-elected*’ government on the share of budgetary spending of the Ministry of Agriculture and Cooperatives and Ministry of Science and Technology are robustly significant. The robustness result hence underscores that science and technology development of Thailand in particular the agricultural development could be hindered by a post-coup government. As the political regime of Thailand is interrupted by several military coup d’états, this can have a long term impact on the sustainable development of the country.

For the military background of a prime minister, the robustness test confirms that prime ministers with high military ranking behave differently from their civilian counterparts. They

9. All estimation results (when all five political variables) are added as regressors are available from the authors on request.

robustly allocated more budget shares towards the Ministry of Foreign Affairs and Ministry of Education, while the Ministry of Finance and Ministry of Justice would receive less.

For the political party of a minister, the estimation results that the share of budgetary spending is positively influence as the administrative minister and the PM belongs to the same political party is robust for the Ministry of Foreign Affairs and the Ministry of Interior, but the negative influence also holds for the Ministry of Agriculture and Cooperatives and the Ministry of Transport respectively.

For the share of MP, the test shows that as the share of MP of the leader party increases, government robustly allocates more budgets to the Central Fund for the prime minister, and less to the Office of the Prime Minister. Lastly, most of the results for ‘outsider’ minister are robust except for the Ministry of Commerce and Ministry of Interior.

Table 3**Baseline results**

(Dependent variable: Ministry budget share in total government budget)

VARIABLES	(1) Central Fund (<i>Budget</i>)	(2) Office of the Prime Minister (<i>Budget</i>)	(3) Ministry of Defence (<i>D_Budget</i>)	(4) Ministry of Finance (<i>D_Budget</i>)	(5) Ministry of Foreign Affairs (<i>D_Budget</i>)	(6) Ministry of Agriculture and Co. (<i>D_Budget</i>)	(7) Ministry of Transport (<i>D_Budget</i>)
<i>D_Budget</i> _(t-1) (or <i>Budget</i> _(t-1))	0.0771 (0.0653)	-0.199** (0.0780)	-0.271** (0.109)	-0.0415 (0.0668)	-0.350*** (0.0614)	-0.144* (0.0792)	-0.214*** (0.0586)
<i>D_log</i> (<i>GDPPC</i>)	17.73 (19.30)	3.433 (3.119)	0.141 (4.292)	-20.77 (13.34)	-0.0046 (0.302)	5.940** (2.928)	-1.807 (4.078)
<i>D_URBAN</i>	2.395 (2.674)	-0.290 (0.432)	0.323 (0.602)	1.269 (1.852)	-0.0774* (0.0419)	-1.055*** (0.402)	-0.302 (0.567)
<i>D_OPEN</i>	0.0244 (0.0560)	-0.0141 (0.0091)	-0.0061 (0.0124)	-0.0375 (0.0388)	-0.0016* (0.0009)	0.0047 (0.0084)	0.00766 (0.0118)
<i>TOT</i>	-0.0519 (0.125)	-0.0119 (0.0202)	-0.0533* (0.0281)	0.0355 (0.0862)	-0.0018 (0.00196)	-0.0288 (0.0189)	0.0699*** (0.0264)
<i>D_AGE14</i>	9.727** (3.916)	1.333** (0.638)	-2.540*** (0.887)	-4.707* (2.723)	0.0541 (0.0612)	-1.102* (0.590)	3.020*** (0.826)
<i>AGE65</i>	0.533 (2.481)	-0.297 (0.400)	0.198 (0.552)	-0.0293 (1.708)	-0.0375 (0.0387)	0.493 (0.377)	-0.837 (0.523)
<i>D_log</i> (<i>POP</i>)	133.8 (191.3)	34.73 (30.87)	-122.8*** (45.65)	375.8*** (133.2)	2.191 (2.996)	-93.99*** (30.23)	-19.23 (40.40)
<i>D_UNEMPOY</i>	-0.196 (0.424)	0.0016 (0.0685)	0.0416 (0.0943)	-0.210 (0.293)	0.0021 (0.0066)	0.0443 (0.0643)	-0.0259 (0.0897)
<i>TREND</i>	-0.413 (0.536)	0.0276 (0.0865)	-0.150 (0.122)	0.267 (0.370)	0.0038 (0.0084)	-0.119 (0.0821)	0.133 (0.113)
<i>RECESSION</i>	2.409 (2.498)	0.720* (0.404)	-0.258 (0.555)	-2.481 (1.725)	-0.0485 (0.0391)	0.0286 (0.375)	0.354 (0.527)
<i>YEAR2003</i>	4.738** (2.412)	1.060*** (0.373)	0.433 (0.510)	-0.692 (1.587)	0.0945*** (0.0362)	-0.0452 (0.352)	1.754*** (0.487)
Constant	22.08 (16.38)	3.999 (2.636)	6.234* (3.685)	-15.11 (11.28)	0.396 (0.257)	2.793 (2.463)	-3.256 (3.447)
Observations	32	32	32	32	32	32	32
R-squared	0.643	0.486	0.454	0.479	0.257	0.532	0.578

Note: Figures in parentheses are standard errors. *D_* denotes the first difference.

***, **, * indicate significance levels at 1%, 5%, and 10%.

VARIABLES	(8) Ministry of Commerce (<i>D_Budget</i>)	(9) Ministry of Interior (<i>D_Budget</i>)	(10) Ministry of Justice (<i>Budget</i>)	(11) Ministry of Science and Technology (<i>D_Budget</i>)	(12) Ministry of Education (<i>D_Budget</i>)	(13) Ministry of Public Health (<i>D_Budget</i>)	(14) Ministry of Industry (<i>D_Budget</i>)
<i>D_Budget</i> _(t-1) (or <i>Budget</i> _(t-1))	-0.307*** (0.0998)	-0.0102 (0.0467)	0.0949 (0.0684)	0.0808 (0.0678)	-0.00195 (0.0413)	-0.277*** (0.0550)	-0.323** (0.129)
<i>D_log</i> (<i>GDPPC</i>)	-0.607 (0.655)	9.158 (13.44)	-0.781 (0.804)	0.660 (1.622)	7.239 (7.744)	0.635 (2.968)	0.220 (0.239)
<i>D_URBAN</i>	-0.0740 (0.0908)	2.531 (1.866)	-0.273** (0.112)	-0.147 (0.225)	-1.685 (1.077)	-1.200*** (0.409)	0.0442 (0.0331)
<i>D_OPEN</i>	-0.00295 (0.00189)	0.0453 (0.0386)	0.0012 (0.0023)	0.0027 (0.0047)	0.0083 (0.0224)	0.0118 (0.0085)	0.0002 (0.0007)
<i>TOT</i>	-0.0017 (0.0042)	0.0619 (0.0878)	-0.0117** (0.0052)	-0.0004 (0.0105)	-0.0171 (0.0507)	-0.0020 (0.0191)	0.0012 (0.0015)
<i>D_AGE14</i>	-0.0664 (0.133)	1.474 (2.705)	-0.105 (0.165)	-0.499 (0.330)	-0.309 (1.568)	-0.510 (0.600)	-0.0626 (0.0481)
<i>AGE65</i>	-0.0875 (0.0839)	0.719 (1.735)	-0.198* (0.102)	-0.0134 (0.208)	0.337 (1.011)	0.231 (0.379)	0.0007 (0.0303)
<i>D_log</i> (<i>POP</i>)	-1.617 (6.505)	-260.4** (132.3)	13.36* (7.961)	-9.048 (16.21)	-25.88 (77.99)	-89.44*** (29.88)	-9.011*** (2.613)
<i>D_UNEMPOY</i>	-0.0117 (0.0144)	0.269 (0.294)	0.0229 (0.0176)	0.0122 (0.0357)	0.370** (0.170)	0.120* (0.0649)	-0.0047 (0.0052)
<i>TREND</i>	0.0147 (0.0182)	-0.283 (0.377)	0.0414* (0.0222)	0.0163 (0.0450)	-0.0516 (0.222)	-0.0845 (0.0820)	-0.0029 (0.0066)
<i>RECESSION</i>	-0.0911 (0.0847)	0.550 (1.731)	-0.0492 (0.104)	-0.0277 (0.210)	1.064 (1.002)	0.167 (0.383)	0.0116 (0.0309)
<i>YEAR2003</i>	0.0485 (0.0780)	-1.240 (1.591)	0.595*** (0.0955)	-0.109 (0.194)	1.298 (0.922)	0.990*** (0.355)	-0.0504* (0.0287)
Constant	0.511 (0.554)	-4.115 (11.37)	2.060*** (0.678)	-0.308 (1.377)	1.107 (6.612)	1.307 (2.500)	-0.0628 (0.202)
Observations	32	32	32	32	32	32	32
R-squared	0.123	0.230	0.891	0.225	0.311	0.632	0.470

Note: Figures in parentheses are standard errors. *D_* denotes the first difference.

***, **, * indicate significance levels at 1%, 5%, and 10%.

Table 4**Summary of the estimated coefficients for each political variable**

(Dependent variable: Ministry budget share in total government budget)

Ministry\Political variable	<i>Non-Elected Government</i>	<i>MILITARY PM</i>	<i>Share of MP_i</i>	<i>LEADER_i</i>	<i>OUTSIDER_i</i>
Central Fund (Dep. var: <i>Budget</i>)	0.319 (1.665)	-0.0109 (1.536)	4.046*** (1.506)		
Office of the Prime Minister (Dep. var: <i>Budget</i>)	-0.164 (0.268)	-0.222 (0.245)	-0.814*** (0.253)		
Ministry of Defence (Dep. var: <i>D_Budget</i>)	0.801** (0.342)	0.635* (0.325)	0.740** (0.330)	0.187 (0.137)	-0.115 (0.175)
Ministry of Finance (Dep. var: <i>D_Budget</i>)	0.715 (1.151)	-2.762*** (0.958)	1.544 (1.232)	-15.25 (11.28)	-0.0875 (0.331)
Ministry of Foreign Affairs (Dep. var: <i>D_Budget</i>)	0.0734*** (0.0242)	0.0433* (0.0226)	0.0899*** (0.0238)	0.0439*** (0.00802)	0.0188*** (0.00607)
Ministry of Agriculture and Cooperatives (Dep. var: <i>D_Budget</i>)	-0.466** (0.236)	0.152 (0.232)	-0.801*** (0.184)	-0.175*** (0.0645)	-0.240** (0.104)
Ministry of Transport (Dep. var: <i>D_Budget</i>)	-0.486 (0.344)	0.250 (0.321)	-0.900*** (0.210)	-0.549*** (0.0542)	-0.132 (0.127)
Ministry of Commerce (Dep. var: <i>D_Budget</i>)	0.177*** (0.0471)	-0.00176 (0.0521)	0.180*** (0.0466)	0.0824*** (0.0252)	0.0701*** (0.0122)
Ministry of Interior (Dep. var: <i>D_Budget</i>)	-1.647 (1.119)	-0.0135 (1.064)	-0.577 (0.813)	1.715*** (0.307)	-2.121*** (0.294)
Ministry of Justice (Dep. var: <i>Budget</i>)	-0.0178 (0.0691)	-0.150** (0.0588)	-0.0659 (0.0628)	-0.0173 (0.0267)	-0.0561 (0.0522)
Ministry of Science and Technology (Dep. var: <i>D_Budget</i>)	-0.275** (0.134)	0.0700 (0.129)	-0.176 (0.115)	-0.104** (0.0420)	-0.273*** (0.0577)
Ministry of Education (Dep. var: <i>D_Budget</i>)	0.264 (0.667)	1.034* (0.590)	0.937* (0.528)	0.296** (0.134)	0.343* (0.177)
Ministry of Public Health (Dep. var: <i>D_Budget</i>)	-0.255 (0.251)	0.162 (0.234)	-0.355** (0.157)	-0.0872* (0.0457)	-0.0755 (0.136)
Ministry of Industry (Dep. var: <i>D_Budget</i>)	-0.0120 (0.0203)	0.0248 (0.0183)	-0.0002 (0.0215)	0.0138 (0.0143)	-0.0753*** (0.0117)

Note: Figures in parentheses are standard errors. *D_* denotes the first difference.

***, **, * indicate significance levels at 1%, 5%, and 10%.

Table 5**Robustness checks: Effects of political variables on each ministry's budget share**

Ministry\Political variable	<i>Non-Elected Government</i>	<i>MILITARY PM</i>	<i>Share of MP_i</i>	<i>LEADER_i</i>	<i>OUTSIDER_i</i>
Central Fund	X	X	+		
Office of the Prime Minister	X	X	-		
Ministry of Defence	X	X	X	X	X
Ministry of Finance	X	-	X	X	X
Ministry of Foreign Affairs	X	+	+	+	+
Ministry of Agriculture and Cooperatives	-	X	X	-	-
Ministry of Transport	X	X	X	-	X
Ministry of Commerce	+	X	X	X	X
Ministry of Interior	X	X	X	+	X
Ministry of Justice	X	-	X	X	X
Ministry of Science and Technology	-	X	X	X	-
Ministry of Education	X	+	X	X	+
Ministry of Public Health	X	X	X	X	X
Ministry of Industry	X	X	X	X	-

Note:

X = The estimated coefficient does not remain robustly significant with the same sign.

+ = The estimated coefficient remains robustly significant with the same positive sign.

- = The estimated coefficient remains robustly significant with the same negative sign.

6. Concluding remarks

This study examined whether the allocation of budgetary spending in Thailand was affected by any military or political influence. Using the share of expenditure budget divided to each individual ministry during 1980-2013, the foremost finding for this research is such that the share of budgetary spending for the Ministry of Science and Technology and Ministry of Agriculture and Cooperative are significantly negatively affected by a non-elected government, an executive minister being in the same party as the prime minister, and having an outsider minister. The results thus indicate an indirect effect of a military coup and weak political institutions on the science and technological advancement of the country especially on the agricultural development.

In addition, the military background of a prime minister also plays a crucial role in Thai government budget formulation. The prime ministers with military background robustly allocated more budget shares towards the Ministry of Foreign Affairs and Ministry of Education at the expense of the Ministry of Finance and Ministry of Justice. Finally, as the percent share of Members in the Parliament of the leader party increase, more public spending is geared towards the Central Fund for the prime minister and less to the Office of the Prime Minister.

It can be concluded that military influence and coalition parties does have a significant influence on the expenditure budget allocation in Thailand. The impact could go beyond public consumptions of the present government into the science and technological development which is a key engine to drive the economy in the future. This study thus suggests that there should be some earmark for R&D expenditure so as to guard the science and technological development of the country from either military or coalition party influences in the future. For further study, we suggest that the hypothesis on populist policy of a non-elected government should be

investigated. The long term impact of government budget formulation on the sustainable development of the country is also worth a thorough examination.

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