Improving the Efficiency of Government Expenditure in Lao PDR

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[1] The views expressed are those of the author and do not represent the views of the Ministry of Finance, Lao PDR and the Policy Research Institute, Ministry of Finance, Japan.

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ABSTRACT

This paper aims to find ways to improve the efficiency of government expenditure in Lao PDR in order to contribute to achieving the goals to be set by the 9th Five-Year National Socio-Economic Development Plan. Because of limited fiscal resources available for the Lao government, external borrowing has continued to worsen fiscal conditions and put public debt sustainability at risk. Against this background, fiscal consolidation aiming at fiscal sustainability along with the effort to improve the efficiency of government expenditure is of critical importance.

Literature review shows that the efficiency of government expenditure is not easy to measure because of methodological complications, limited data availability and the impact of exogenous factors. Alternative approaches to measure the efficiency of government expenditure are proposed, for example, parametric methods such as Stochastic Frontier Analysis (SFA) and non-parametric methods such as Free Disposal Hull (FDH) and Data Environment Analysis (DEA). These alternatives are based on the concept of efficiency frontier. The analysis based on individual spending areas (function-by-function approach) could be another alternative approach to measure the efficiency of government expenditure. In order to improve the efficiency of government expenditure, however, reliable measurements of efficiency need to be developed. This paper uses historical fiscal data to analyze how government expenditure contributes to economic growth. This paper also discusses how the efficiency of government expenditure is influenced by exogenous factors, not only by input and output.

This paper shows that the contribution of the total government expenditure to economic growth was too wide to obtain their causality due to the impact of exogenous factors. Using in-depth analysis, this paper finds that Laos' fiscal situation is constrained by limited domestic resources and relying on external borrowing which could be an obvious finding which links to the efficiency of government expenditure on how we could allocate limited fiscal resources and spending more efficiently as well as on how to take the government debt cost into account.

The efficiency of government expenditure can be improved in many different ways. The possible policy recommendations in the medium-to long-term are a strengthened project selection process for rational public investment spending; improvement of the priority exogenous factors and development of reliable efficiency measurement of government expenditure.

Keywords: *education, effectiveness, efficiency, efficiency measurement, government expenditure, health, Laos, public debt, sustainability.*

1. Introduction

This paper aims to find ways to improve the efficiency of government expenditure in Lao PDR in order to contribute to achieving the goals to be set by the 9th Five-Year National Socio-Economic Development Plan, which needs to be supported by government resources. Because of limited fiscal resources available for the Lao government (the ratio of domestic revenues to GDP is approximately 15%); external borrowing has continued to worsen fiscal conditions and put public debt sustainability at risk. The public and publicly-guaranteed debt is approximately 58% of GDP as of the end of 2016. Against this background, fiscal consolidation aiming at fiscal sustainability along with the effort to improve the efficiency of government expenditure is of critical importance.

Many papers have discussed the efficiency and effectiveness of government expenditure in developed and developing countries. Some conclude that the efficiency of government spending has a major impact on the productivity of the whole economy. Others illustrate that the efficiency of government expenditure is not easy to measure because of methodological complications, limited data availability and the impact of exogenous factors. Also, the impact of different factors depends on the specific situation in different countries. In order to improve the efficiency of government expenditure, the measurement of government expenditure efficiency needs to be developed. Despite the important policy implications of the efficiency of government expenditure, there has been little study on the subject both in developing countries generally as well as in Lao PDR. For these reasons, it is very crucial to conduct a study on the case of Laos in order to improve the efficiency of government expenditure. Improving the efficiency of government expenditure is becoming a more urgent policy challenge to ensure the sustainability of public finance and then to boost economic growth and to maintain macro-economic sustainability in the medium to-long term.

This paper uses historical fiscal data to analyze how government expenditure contributes to economic growth. It also discusses how the efficiency of government expenditure is influenced by exogenous factors, not only by input and output. The research focuses on the efficiency by addressing the following questions:

- How could we allocate limited fiscal resources more efficiently?
- How should we select public investment projects and manage spending more efficiently and effectively to improve outcome?
- How should we deal with the exogenous factors, such as institutions, human resources, management practice?
- How should we improve the efficiency measurements of government expenditure?

2. Literature Review

2.1. Concept of the efficiency and effectiveness of government expenditure

Ulrike Mandl, Adriaan Dierx, Fabienne Ilzkovitz (2008) explains the concept of the efficiency and effectiveness of public performance. They state that the analysis of efficiency and effectiveness is the relationship between inputs, outputs and outcomes. Also, the efficiency and effectiveness of the public sector was not generally straightforward to measure compared to the private sector. The investigation is made by asking the question on how to measure efficiency and underline the relevance for the policy maker (Farrell, 1957). Although techniques have been developed and the investigations become more frequent, there remains a conceptual challenge in terms of measurement of the efficiency and the effectiveness of public spending. This is because there are multiple objectives and thus the outputs of the public sector are not easy to quantify. The measure of efficiency can be made in terms of technical and allocative efficiencies. The technical efficiency is about the relation between input and output ratio and the allocative efficiency is the link between the optimal combination of inputs taking into account cost and benefits. The measure of effectiveness is the relation between input or output to the outcome, which shows the final success of the resources used based on the objectives. Moreover, the outputs and outcomes also are affected by the environmental or exogenous factors.

Input: it is not easy to obtain the actual cost of public sector activities. Thus, the public spending allocated to production of given public services such as public spending on health, education or infrastructure is considered as a measure of input. In addition, input could be defined by non-monetary factors, for example, the teacher/student ratio, class size and instruction time.

Output: the output of public sector activities mostly provided in the form of non-market goods and services is difficult to measure. Therefore, one of the commonly used measures of output is performance indicators, by which cross-country comparison is difficult so that appropriate indicators are needed. The more performance information we collect, the better we could measure the output.

Outcome: the measurement of achievement of public sector activities, including the long-term effects of public programs such as welfare and growth. The measurement could be determined by external factors such as life-style and socio-economic backgrounds.

Environmental factors: besides input and output, public sector performance could be influenced by factors such as institutional and structural ones or by other country-specific features. The recent

investigations show that those factors have an important impact on the efficiency level, which could lead to bias or improve the measurement of the efficiency and effectiveness of public spending.

2.2. How to measure efficiency and effectiveness

Ulrike Mandl, Adriaan Dierx, Fabienne Ilzkovitz (2008) outlines the conceptual framework and surveys the different methods used for cross-country comparison of the efficiency and effectiveness of the public spending by addressing the key questions as i) how to define efficiency and effectiveness; ii) how to measure efficiency and effectiveness of public spending and iii) what are the main determinants of efficiency and effectiveness of public spending? This paper shows that the efficiency in public services more generally and in public spending on education and R&D in particular varies significantly between countries. Clearly, there is potential for increased efficiency in public spending. However, this paper also illustrates the difficulties of measuring efficiency and effectiveness. The efficiency cannot be directly measured, but sometimes needs to be measured based on indexes and a performance indicators approach or based on the concept of efficiency frontier, which is considered as both input efficiency and output efficiency. The input efficiency aims at maintaining the fixed level of output and adjusts the amount of input necessary while the output efficiency keeps the input unchanged and aims at improving the level of output. Furthermore, this paper shows that the environmental conditions have to be considered as they can have a significant impact on efficiency and effectiveness.

Since efficiency cannot be directly measured, different approaches concerning data and methodological framework have been used. Sometimes indexes and performance indicators are used by themselves to measure efficiency. However, these approaches are rather a measurement of productivity, since the best possible result that is achievable with current technology is not taken into account. Ivan Ebejer and Ulrike Mandl (2009) also summarizes that measuring public sector efficiency is not generally straightforward and presents a difficult empirical issue, specifically in terms of adequate measurement of costs and outcomes.

There is an alternative approach based on the concept of efficiency frontier by using either parametric or non-parametric methods. The main difference between these two approaches is that the parametric frontier approach such as Stochastic Frontier Analysis (SFA) requires the ex-ante definition of the functional form of the efficiency frontier (a specific functional form for the relationship between input and output). The advantage of this method is that it is able to cover the effects of exogenous shocks, i.e., non-discretionary factors. The model can specify the equations based on such assumptions. For example, specific variables covering exogenous factors can be

included in the model. The non-parametric approach such as Free Disposal Hull (FDH) and Data Environment Analysis (DEA), does not require assumptions about the specific functional form of the production function, i.e., no data on input and output prices are required since the frontier relies on the input and output data only. The main disadvantage of this approach is its deterministic nature. Results tend to depend heavily on the composition and size of the sample as well as the selection of input and output variables used. Moreover, non-parametric methods tend to be sensitive to measurement errors, statistical noise and outliers.

2.3. The environmental factors

Beside inputs and outputs, there are factors that could affect the efficiency and effectiveness levels. Ulrike Mandl, Adriaan Dierx, Fabienne Ilzkovitz (2008) mentions that those environmental factors are institutional setting, structure framework conditions or, in the case of cross-country evaluation, country-specific features. They also state that defining the borderline between direct influence-factors (input) and such exogenous factors is not always straightforward.

Moreover, the public administration can be considered as an institution that affects the input, produces the output and has a significant impact on the outcome of government policies. Therefore, the functioning of the public administration will have an important influence on the efficiency and effectiveness of public spending. M. St. Aubyn (2007) indicates that modern and efficient public administrations have a positive impact on the productivity and growth. European Commission/EPC (2007) shows that EU Member States reformed their public administration in order to achieve efficiency gain.

2.4. The public financial management

Effective public financial management (PFM) is a cornerstone of good governance or the ability of governments to efficiently collect revenues and spend them in an accountable and transparent manner and therefore is instrumental for nations seeking to expand their economic growth and to increase available resources to pursue national objectives (Berkeley Hirsch. 2017).

Sustaining economic growth and achieving poverty reduction require a set of policies that will encourage stronger private sector investment and innovation as well as better and more efficient use of resources by the public sector. The key fiscal challenge will be finding the fiscal space to increase critical physical and human public investment without placing a greater burden on the private sector. The public expenditure review concentrates on some key reforms needed to achieve this by improving the efficiency of public spending—examples are found in the case of Moldova

such as i) reducing the size of government; ii) reorienting expenditure towards growth promotion; iii) reforming public sector remuneration system; iv) restoring the transport network for sustained economic growth; v) increasing the efficiency and quality of healthcare; vi) enhancing of efficiency of resource use in education; vii) promoting the fiscal sustainability of pensions; and viii) maximizing the benefit from social assistance (The World Bank Paper: A Public Expenditure Review for the Republic of Moldova. 2007).

2.5. The composition of government expenditure

Using public spending to stimulate economic activity has been a key option for successive governments since the 1930s when British economist John Maynard Keynes argued that public spending should be increased when private spending and investment were inadequate. There are two types of spending—one is current spending, which is expenditure on wages and raw materials and capital spending, which is expenditure on physical assets like roads, bridges, hospital buildings and equipment. Current spending is short term and has to be renewed each year. Capital spending is long term as it does not have to be renewed each year; it is also called spending on 'social capital' (Economic Online).

Cross-country empirical studies estimating the impact of the structure of spending on growth generally provides evidence that the mix of spending matters for growth. Often these papers classify government spending into productive and non-productive spending, depending on whether they are included in the production function or not (e.g., Barro, 1990). For instance, investment in infrastructure and education can raise the human and physical capital stock and, in turn, long-run growth. Since Kneller et al. (1999), a number of papers found that productive spending affects economic growth positively while unproductive spending does not. One of the key insights of Kneller et al. (1999) is the importance of controlling for the government's budget constraint as failing to do so would yield biased estimates. Recent studies consider this constraint by controlling for the size of government. For instance, Teles and Mussolini (2014) finds in a sample of developing and developed countries, that productive spending affects economic growth positively, although this impact declines as public debt increases. Gemmell et al. (2014) focuses on the long-run GDP impact of changes in total government spending and in the shares of different spending categories in total spending in OECD countries. Their results imply that reallocating total spending towards infrastructure and education would raise income in the long run. Increasing the share of social welfare spending is associated with modestly lower long-run GDP levels. (See Jean-Marc Fournier and Asa Johansson, Economic Department Working Paper No. 1344 for an overview).

2.6. The human capital development

Why is human capital important for development? The confluence of rapid technical change, globalization and economic liberalization in recent years has prompted governments in developed and developing countries alike to prioritize skills development as a key strategy for economic competitiveness and growth. The governments realize that the knowledge people gain through education helps develop an economy and leads to economic growth. Workers with more education tend to have higher earnings, which then increases economic growth through additional spending[2].

In developing countries, especially the poorest ones, the challenges are profound and complex. Policy makers acknowledge the critical role of a strong human resource base in complementing other investments and policies to boost productivity and economic progress. Yet while these countries report lower average levels of educational attainment than industrialized countries, in some countries the significant number of those with high levels of formal qualifications end up unemployed, working in jobs that under-utilized their skills or emigrating to other countries. The result is a misallocation and waste of resources that these countries can ill afford. Developing countries are therefore in urgent need of new strategies and approaches that focus more explicitly on the links and coherence between investments in skills development and employment and productivity (Katie TAYLOR, 2012).

As many papers state, early childhood education is a highly effective form of intervention, both in terms of generating income and in reducing inequality. Gennaioli et al (2013) applies a newly constructed panel dataset on regional education attainment and growth to a variation of Lucas model of human capital externalities. They conclude that human capital has strong explanatory power for regional variation in income, providing a regional-level extension of national-level studies of the 1990s and 2000s.

Ahmad Danu Prasetyo and Ubaidillah Zuhdi (2013) studies the government expenditure efficiency towards human development by comparing the efficiency level of government expenditure per capita in health and education sectors and transfers and subsidies in 81 countries towards the human development in the respective countries, using Data Envelopment Analysis (DEA) approach from 2006 to 2010. This paper finds that there are countries that always are positioned in the efficient frontier during the sample period, namely: Armenia, Australia, Bangladesh, Chile, Georgia, Japan, Republic of Korea, Lao PDR, Madagascar, Niger, Norway, Philippines, Sierra Leone, Singapore,

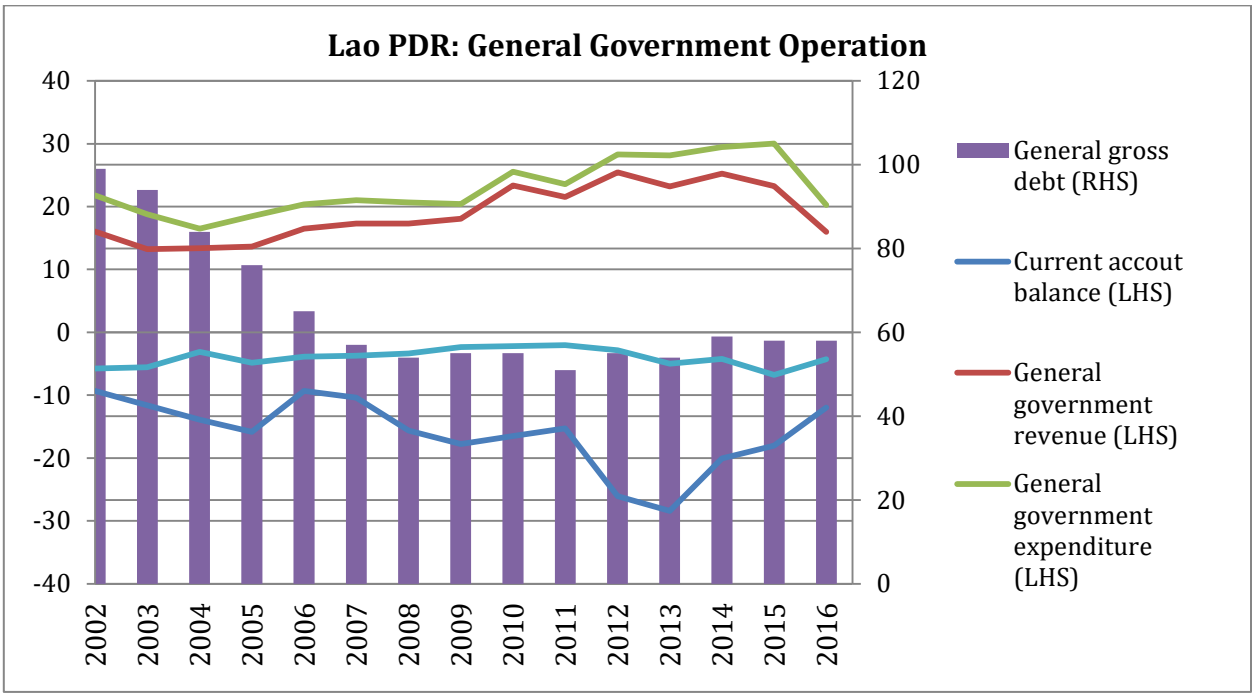
[2] https://www.investopedia.com. *"What is the relationship between human capital and economic growth*?".

the US, and Zambia. Nevertheless, only Singapore and Zambia succeed to maintain positive improvements among countries that are listed in the efficient frontiers.

3. The Lao Economy

The Lao economy is constrained by a negative saving-investment gap, which inevitably leads to twin deficits in fiscal and external current accounts. The current account balance in percent of GDP has been negative at 10% in 2002 and reached 28% in 2013, followed by a narrowing at 12% in 2016. The main factor driving the current account deficit was the deficit on trade balance (the import exceeds the export). The current account deficits need to be financed by capital inflows or in other words the surplus on financial and capital account. Against this background, the foreign fund flows need to be used wisely and productively, which is able to gain the returns, increasing the production for the Lao economy in the future. Those productivity gains could lead the current account to a surplus since they will allow Laos eventually to increase more exports, particularly the gains from the hydropower sector, which is the main sector covered by foreign direct investment flows.

Figure 1: General Government Operation



Source: IMF: WEO Database.

The economic growth of Lao PDR continued to remain robust. GDP growth rate has increased continuously since 2003 and recorded the highest rate of approximately 9% in 2006. This growth is driven by foreign investment inflows in the mining and hydro-power sector and growing mineral

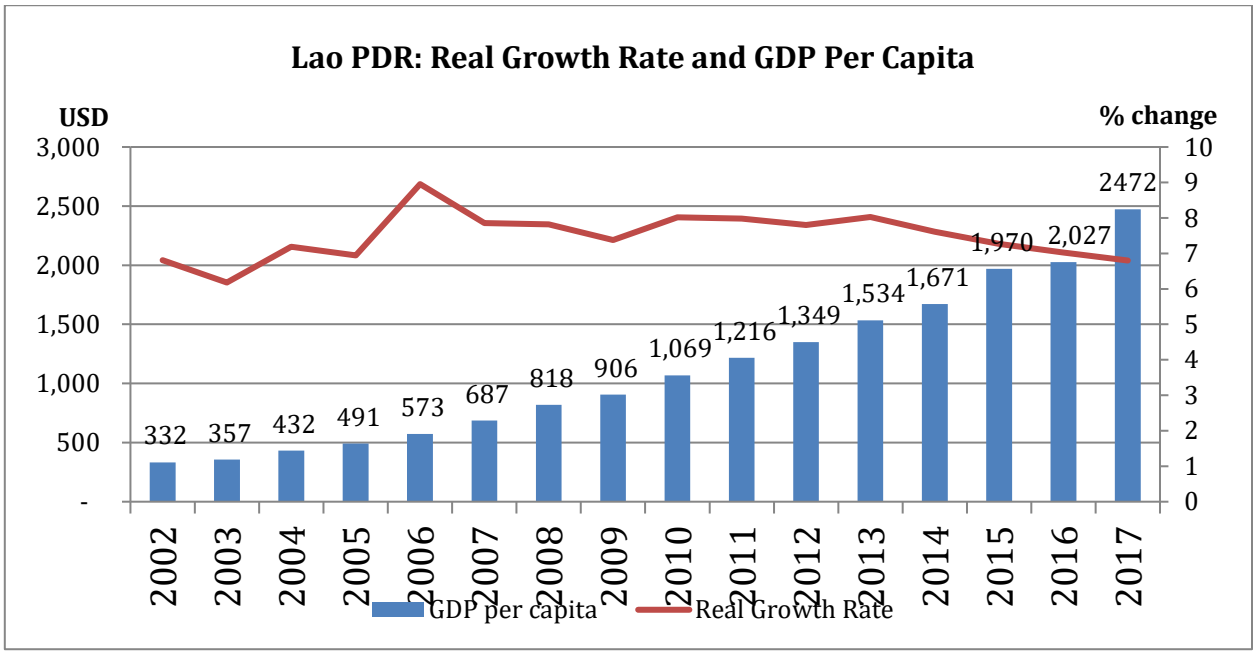
exports. Agriculture, manufacturing and services sectors are expected to sustain growth, due to rising FDI in agriculture, manufacturing, and increasing trend in tourism. As a result, the fiscal condition was also good due to the rapid growth of GDP since the revenue collection has increased, due to the new Tax law that broadens the tax base and to the increased receipts from large projects and tourism (Figure 2).

After the peak in 2006, growth has slightly declined due to the impact of the global financial crisis in 2008 to 2009 on the Lao economy while the impact was not as large as initially expected. Growth remained at around 8% until 2010, driven by the continued growth in the mining and hydropower sectors as well as the growth in the service and tourism and agriculture sector. The favorable economic growth enabled the government's revenue collection to exceed the targets approved by the National Assembly for three years continuously (2006-2010). The expenditures also rose steadily over years in response to the growing demand for development and provision of public services and growing spending on the major events hosted by Laos. The operation of the Nam Theun 2 hydropower project in 2010 also supported the economic growth and contributed to further development of the hydropower potential until 2011 to 2013, which drove growth stable at 8%.

GDP growth rates have been on a downward trend from 8% in FY2013 to 6.8% in FY2017 due to the impact of external and internal factors. For the external factor, a decline in commodity price leads to a fall in investment in the mining sector. While the impact from internal factors was due to a government revised policy on investment in the mining sector, a temporary stop granting new concessions on mining licenses, undertaking an assessment on implementation projects; and the stop in granting a quota for logging and exporting timber and strict controls on public investment projects. Still, the government faced a high budget deficit during those few fiscal years since the revenue has declined due to the declining of ODA. In line with the continued growth since 2002, GDP per capita increased from USD 332 in 2002 to USD 2,472 in 2017.

The medium-term growth is expected to remain high at around 7 percent, supported by new hydropower projects and strong FDI from China in agriculture, manufacturing assembly and services, including the construction of the Kunming-Vientiane railway under the Belt and Road Initiative (BRI) which began in early 2017 (IMF Article IV Consultation for Lao PDR 2017, March 2018).

Figure 2: Real Growth Rate and GDP Per Capita



Source: Ministry of Planning and Investment, Lao PDR and IMF: WEO Database.

4. Empirical Findings and Assessment of Efficiency of Government Expenditures in Lao PDR

Since there is a constraint on fiscal data limited for Lao PDR which is available only for fiscal annual data and component data, this paper uses the historical fiscal data to analyze and assess how government expenditure contributes to economic growth by three approaches. Firstly, this paper analyzes the government expenditure and economic growth, secondly it analyzes the government expenditure components and economic growth, and finally it analyzes the government debt cost and economic growth.

4.1. The government expenditure and economic growth

Lao PDR economy continued to grow steadily and the government expenditure continuously increased over the past 10 years. From a public finance perspective, since 2003 the growth rate has been driven by the favor of domestic and external resources[3], those rapid increases in revenues allowed greater spending on previously compressed public expenditures. Over the past years the average total expenditure was 23% of GDP. Government expenditure continued to expand in terms of GDP since 2005 after it reached 15% in 2004 at the lowest level in the past years. However, government expenditure has increased significantly in the year 2012 and 2013 due to an increase

[3] See the interpretation in Figure 1.

in salary and compensation of public servants. That rapid increase in expenditure caused the huge budget deficit at 6.3% of GDP (it exceeded the plan that the set budget deficit should not be more than 5% of GDP). Since then, the government of Lao PDR has taken some steps to consolidate the fiscal position by using contractionary fiscal policy by managing the administration spending, controlling investment as well as efforts to improve tax collection; then government expenditure was estimated to reach 22% of GDP in 2017. This result might be one of the factors affecting the development of Lao economy with its growth on a downward trend from 7% in 2013 (Figure 3).

In order to assess the efficiency of government expenditure, this approach could be the way to see how government expenditure contributed to economic growth. This paper defines the share of government expenditure to GDP as the input and the real growth rate as the output in order to assess the causality of those two. By analyzing historical fiscal data, we can interpret the movement of government expenditure level as the determining factor of the economic growth as below:

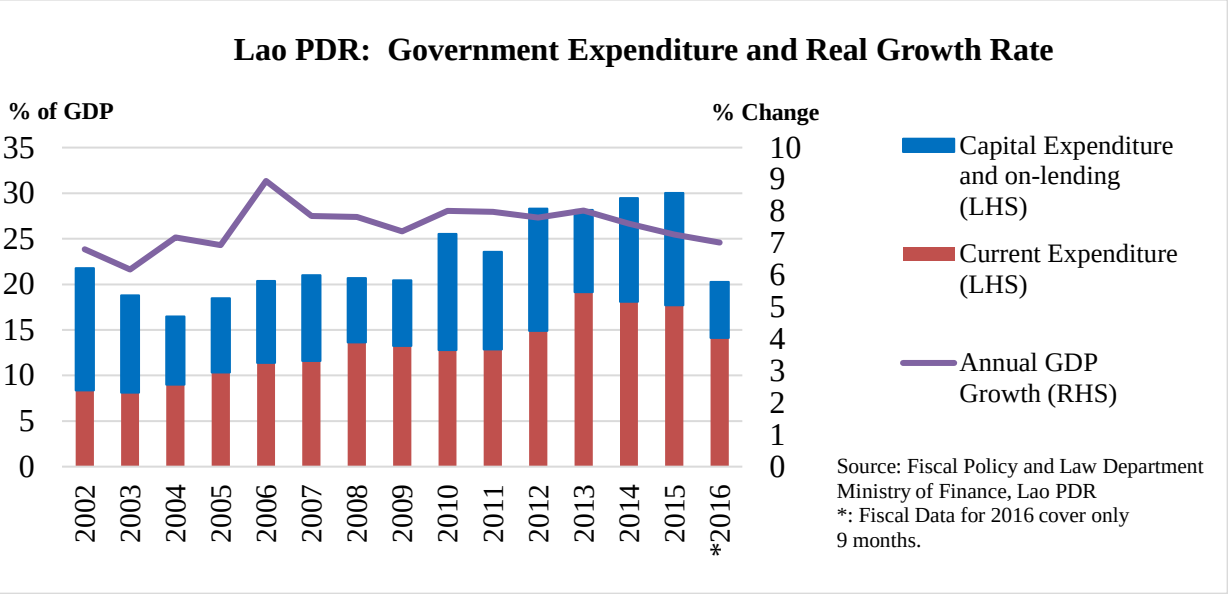
1) During 2005-2007, the government expenditure slowed an increasing trend followed by a jump in growth rate approximately to 9% in 2006. This could be explained that during that period Lao economic development was driven by the external sources: the capital flows from foreign direct investment in mining and hydropower sectors, which also influenced revenue collection improvement. As a result, the fiscal condition at that period was in good shape. Therefore, from the historical data, it could imply that the increasing level of government expenditure was not interpreted as the main factor generated to the development of economic growth at that time. In other words, it could be explained in the way that government might not really need to worry about the efficiency of government expenditure.
2) During 2008-2012, the government expenditure has continuously increased while the growth rate has slightly declined due to the impact of the global financial crisis. Since Lao economy was not largely affected by the crisis, the growth rate still reached about 8% in 2010. The remaining growth in the resource sector was shown as the main source for the growth rate. Therefore, the increasing of government expenditure especially the significant development needs for the two major events in Laos, could also generate growth, but perhaps in the indirect distribution. The two important events came at the right time to stimulate the economy, by attracting more than ten thousand foreign visitors and by supporting Lao tourism, retail trade, construction and other services industries[4].
3) The growth rate has been in a downward trend since 2013 compared to the past period due to the decline in foreign direct investment and the impact from government policy changes, such

[4] The World Bank, *"Lao economic development, 2009"*.

as the prohibition of illegal logging, tighter lending conditions and a decline in tourism. Also, during that time, the government expenditure also slightly declined due to the government consolidating the fiscal position by using contractionary fiscal policy by managing the adminstration spending, controlling investment as well as efforts to improve tax collection. Therefore, it could be said that the economic situation seems to have been affected from both external and internal factors, which shows as the downward trend of the economic growth.

However, assessment of the efficiency of government expenditure by looking only at the share of government expenditure to the real growth rate is still widely used. Since even if the aggregate output and productivity of a public services looks satisfactory, that may hide a multitude of problems in particular areas or in the delivery of specific aspects of the services[5]. Moreover, the robust real growth rate could be affected by other factors that contribute to economic activities. Therefore, in order to assess the efficiency of government expenditure by looking just at its contribution to economic growth may not make it possible to provide a definitive answer.

Figure 3: The Government Expenditure and Real Growth Rate



4.2. The government expenditure components and economic growth

Lao PDR economy continued to grow steadily together with the increasing in government expenditure, which was driven by current expenditure rather than capital expenditure over the past 10 years since 2004. As a percent of GDP, the current expenditure started to increase from 8% in 2002 to 11% in 2006, while capital expenditure has declined from 13% to 9%. The continuing

[5] Joe Grice, *"Measuring and Improving Government Performance"*, Social and Public Service Analysis and Reporting, OECD.

increase of current expenditure still remained from 11% of GDP in 2006 to 14% in 2008 and turns to a decline at 13% in 2010 as well as the capital expenditure which increased from 9% to 13% of GDP in 2010 as same amount as current expenditure. The main reasons were due to an increase in wage and salaries, responding to development needs in provinces and spending on two important events in Laos (Southeast Asian Games held in 2009 and the celebration of the 450th anniversary of Vientiane). After that, current expenditure started to increase up to 19% of GDP in 2013 due to an increase in wage and salaries, while the capital expenditure dropped to 9% of GDP. However, during 2013-2015 current expenditure has been declining due to government use of a contractionary fiscal policy but still was the highest level compared to the past years. On the other hand, the capital expenditure slightly increased but at a small level due to strict control on public investment projects. Therefore, at the same time the GDP growth rate was in a slowdown trend (Figure 4).

When looking at the ratio of capital to current expenditure as shown in figure 5 it also shows and evaluates the historical performance of government expenditure between two components as pointed out earlier in Figure 4. In 2002 and 2003 the capital expenditure was 1.6 times and 1.3 times greater than current expenditure, equivalent to 60% and 30%, respectively. After that, the capital expenditure was less than current expenditure up to 2010 when they are the same amount. Then capital expenditure falls beneath current expenditure, which is 0.4 times less than current expenditure in 2016 (9 months), amounting to 40% as a share of current expenditure.

Figure 4: The Government Expenditure Components (%) and Real Growth Rate

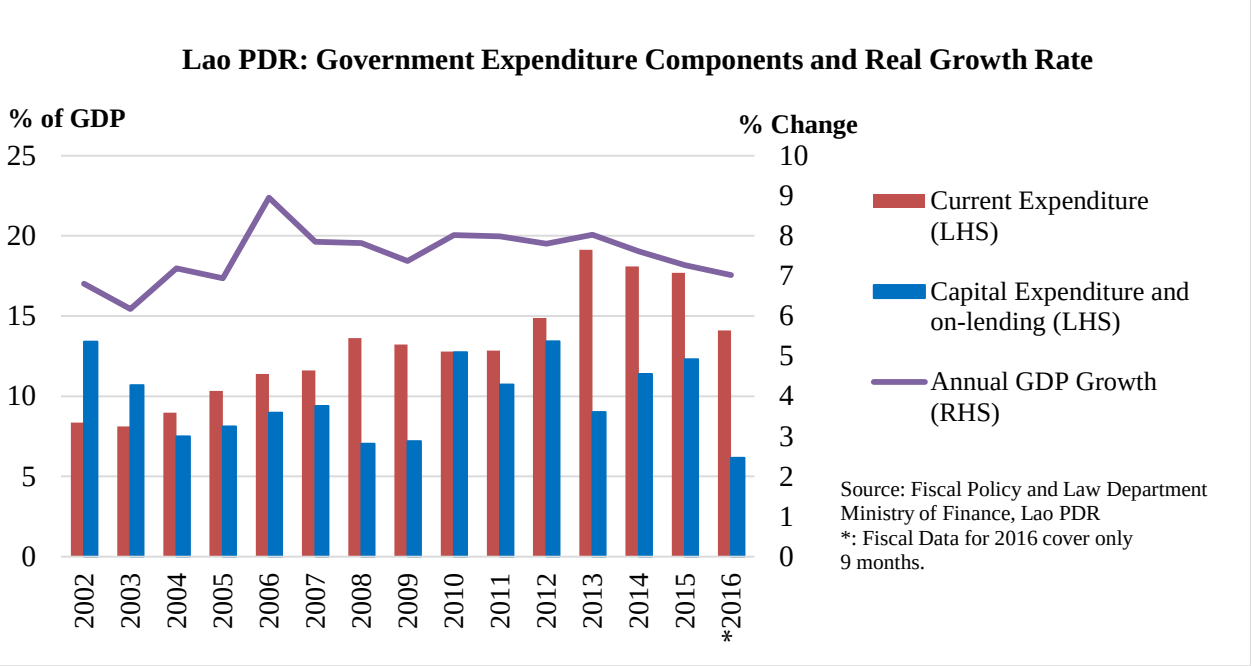
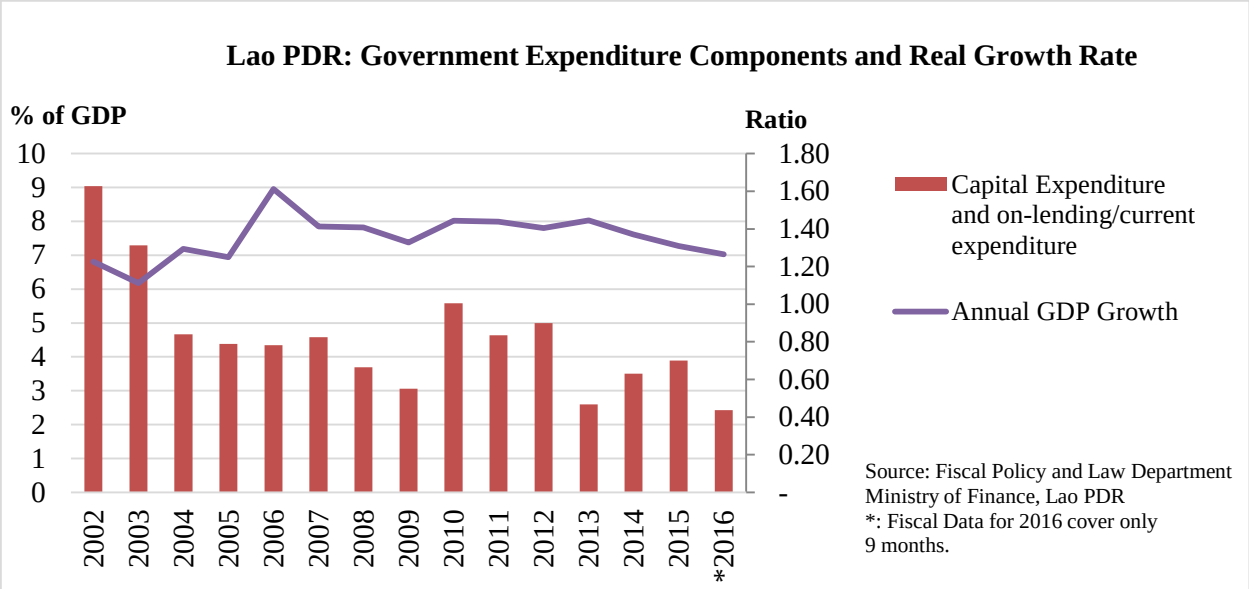


Figure 5: The Government Expenditure Components (ratio) and Real Growth Rate

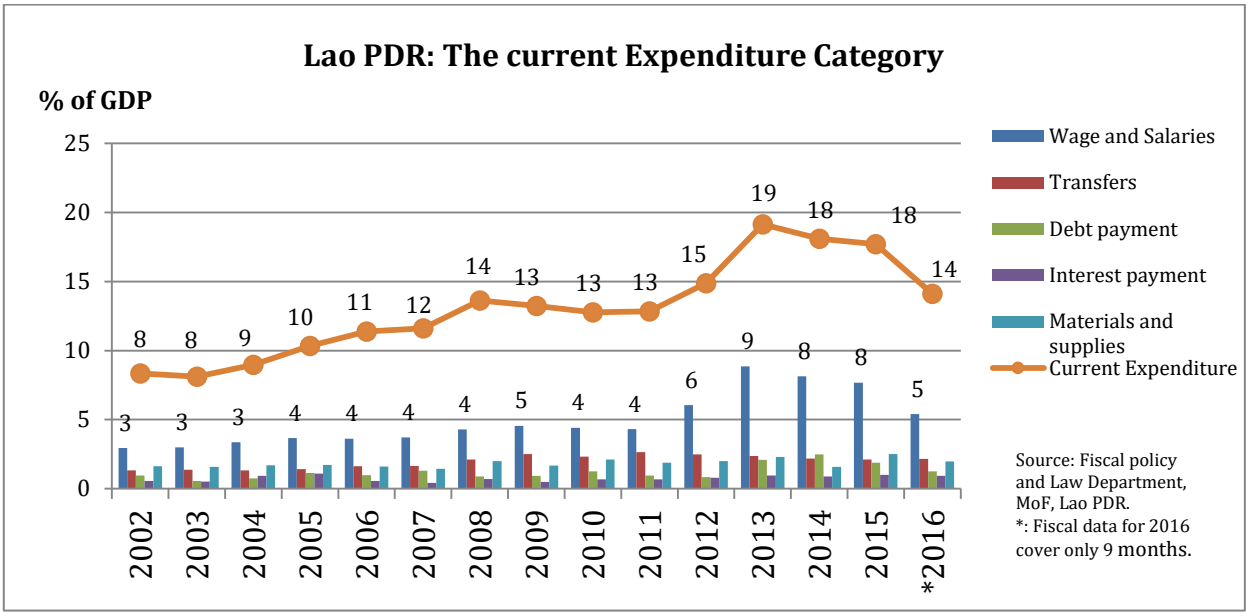


4.2.1. The current expenditure

As a percent of GDP, current expenditure has increased continuously since 2003 and rapidly in 2013 at 19% due to the government policy changed by expanding the wages bill and the trend has decreased since 2014 from around 18% to 14% in 2016 (9 months) and an estimated 12.5% in 2017. The reason for the decrease in current expenditure was due to the government implementing the contractionary fiscal policy by cutting down government expenditure. Wages and Salaries, Transfers, Materials and Supplies, Debt payment and Interest payment constitute 98% of current expenditure (Figure 6).

In categories of current expenditure, wages and salaries is determinant, which has been a major portion over the past 10 years and reached the highest level at 9% of the current expenditure in 2013. After that, it has declined over time. Other categories of current expenditure such as Transfers, Materials and Supplies, Debt payment and Interest payment have slightly fluctuated during 2003 to 2016. Of these, Transfers reached about 3% since 2012 and the estimate suddenly dropped to 1.9% in 2017, Materials and Supplies remained at the same level at 2% over time, Debt payment reached about 1%-3% in 2016 and in 2017 debt payment has been shown in the financing part of the budget, while the interest payment has increased slightly from 1% in 2012 and estimated to 1.4% in 2017.

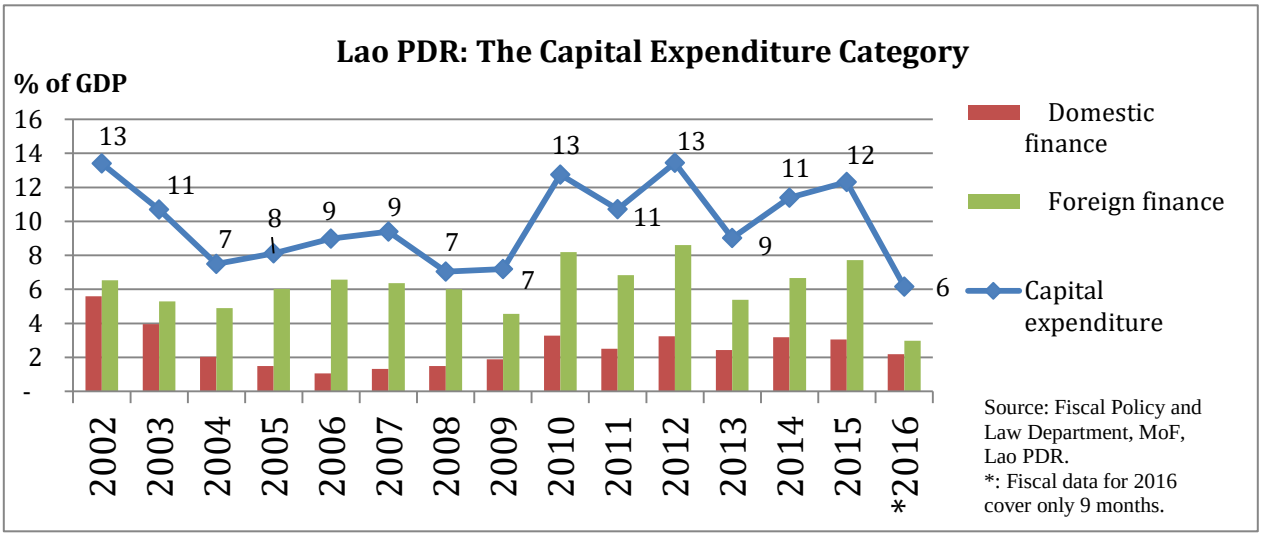
Figure 6: The Current Expenditure Category



4.2.2. The capital expenditure

As a percent of GDP, capital expenditure has a declining trend from two digits at 13% in 2002 to one digit at around 7% in 2009 and starts to increase to 13% in 2010, which was due to the response to development needs in provinces and spending on two important events in Laos (Southeast Asian Games held in 2009 and the celebration of the 450th anniversary of Vientiane). From then, due to government controls on the new investment projects, focusing on ongoing projects and clearance of arrears has caused the downward trend of capital expenditure. By category, investment from grants and loans was the major portion of the capital expenditure, even though it slightly fluctuated between 9%-8% from 2012 to 2015. Nevertheless, in 2016 and in 2017 its level was estimated to decline. At the same time the investment from the government budget accounted for around 2%-3% over the time periods (Figure 7).

Figure 7: The Capital Expenditure Category



International views (The Open Knowledge, The World Bank) show that central government spending grew substantially until 1982 in many developing countries but then tended to decline as a percentage of GDP until 1985 as resources growth tightened. Although the breakdown of spending by category varies tremendously among countries, some generalizations are possible. For example, industrial countries spend much more (as the share of both total spending and GDP) on subsidies and transfers, primarily for health and social security, while developing countries tend to allocate more of their spending to investment. Setting priorities is only the first step. All dimensions of investment projects: economic, technical, administrative, and financial must be appropriately designed and implemented in policy environments that provide an incentive for good performance. Priorities and good quality must also be considered in allocating recurrent public spending: adequate spending on operation and maintenance will often be more important than new investment, hiring few civil servants and paying them competitive wages will generally be preferable to using the government as the employer of last resort, and subsidies will be more efficient when targeted to the poor rather than dispersed across the entire populace.

In the case of Lao PDR, the allocation of limited fiscal resources between current and capital expenditure is very important in order to help create more growth in the long term. This approach is to compare the performance of government expenditure by components including current expenditure and capital expenditure to real growth rate. It should be one possible way to assess the proportion of government spending on current and capital expenditure in different periods of time to generate economic growth. By looking at component to component performance historically, this paper finds the following:

1) The structure of government expenditure, over the past 10 years, still remains an imbalanced allocation. Lao government expenditure has been composed of current expenditure, rather than capital expenditure. Average total expenditure over past years was 23%, of which current expenditure increased from 38% in 2002 to 70% of the total expenditure in 2016, while capital expenditure decreased from 62% of total expenditure in 2002 to 30% in 2016.
2) In the current expenditure, the resources squeeze was mainly felt on non-wage expenditure. In other words, it already crowds out both non-wage expenditure and capital expenditure. Also, the IMF Article IV Consultation for Lao PDR also stated that public wages are now the biggest component of spending. However, the wage expenditure is the priority spending of the government to secure the living condition of public servants that could not be able to be cut down. Therefore, the relevant issue was how to maintain the wage expenditure level and balance it with non-wage spending and also investment spending in order to contribute to the growth.
3) The major portion of capital expenditure was the investment from grants and loans. The overall capital expenditure has slightly declined from two digits to one digit since the government has controlled new investment projects, focusing on ongoing projects and clearance of arrears. In terms of the management, the capital expenditure on infrastructure projects has not been monitored strictly; also, the inspection and assessment were not performed effectively.

However, assessment of the efficiency of government expenditure by looking at the government expenditure by components between current and capital expenditure to the real growth rate could explain that the data could not tell the in-depth causality of the level of two components contributing to economic growth. Based on the theory, both components have a different impact on growth. The current expenditure is also necessary to secure their public servants' living standard and other operation expenses; when people have more income, they can spend more, and their spending can generate an increase in consumption and then lead to economic growth. The capital expenditure is the spending to increase capital stocks, which is intended to create future benefit generated to economic growth in the long-term. Therefore, to develop the country by achieving productivity gains in the future, the government should make an effort to allocate resources for investment. In the case of Laos, it should be noted that how to change the allocation of future spending to be more equally or appropriately divided between current and capital expenditure should be one point to consider in order to reform the budget structure, and this leads to helping the government be able to save resources from one area to spend more in another area for socio-

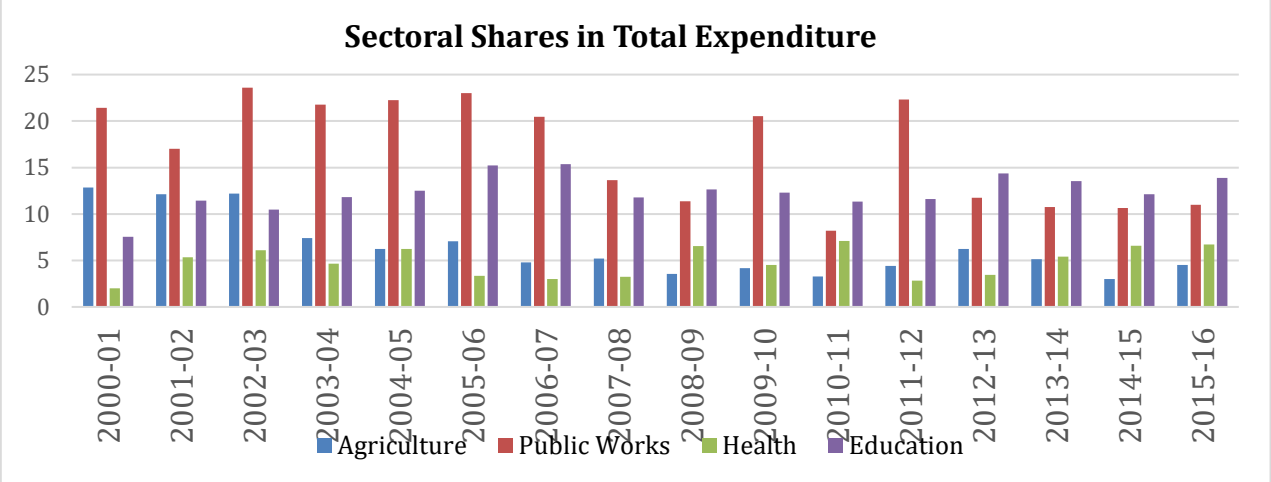
economic development. In short, maintaining the same level of current expenditure and trying to allocate more resources on capital expenditure might be the hypothesis.

4.2.3. Key priority sectors spending

Government key priority sectors are agriculture, public works, education and health which are very important sectors for generation of growth. There are different aspects contributing to growth which are critical to see the efficiency of those sectors' spending. For public works, it is infrastructure investment (roads/bridges) that is important for the country in order to build facilities for the people. While the education and health sectors require human capital investment in order for people to have skills and knowledge, and therefore more capacity to get a good job and earn more income. A healthier labor force contributes to economic growth. Moreover, the agriculture sector's spending is to ensure food security and improve the livelihood of rural communities.

Over the past 10 years, government expenditure on those four priority sectors had not really fluctuated between their shares compared year by year. After that, the total expenditure share to the four sectors has been declining and remained almost at a stable trend such as during FY2003-2004 to FY2015-2016 where the average government spending on agriculture, public works, education and health sector were 5%, 16%, 13% and 5% respectively. In terms of the data, the expenditure on public works and education appeared to be reasonably efficient and equitable, while expenditure on agriculture and health were much less so. Among sectors, the great share of total expenditure is the expenditure on public works, which shows the high spending on investment. Laos is a country of limited fiscal resources, and it is implied that the higher the investment spending, the higher borrowing externally.

Figure 8: Sectoral Shares in Total Expenditure



Source: Lao Official Gazette, Ministry of Finance.

For example, this paper chose education and health sectors in order to look at the trend of the government expenditure on both sectors in the share of GDP and their outputs. The education output is the primary and secondary school enrollment of gross enrollment ratio, while the health output is the life expectancy at birth. The trend shows a wide relationship.

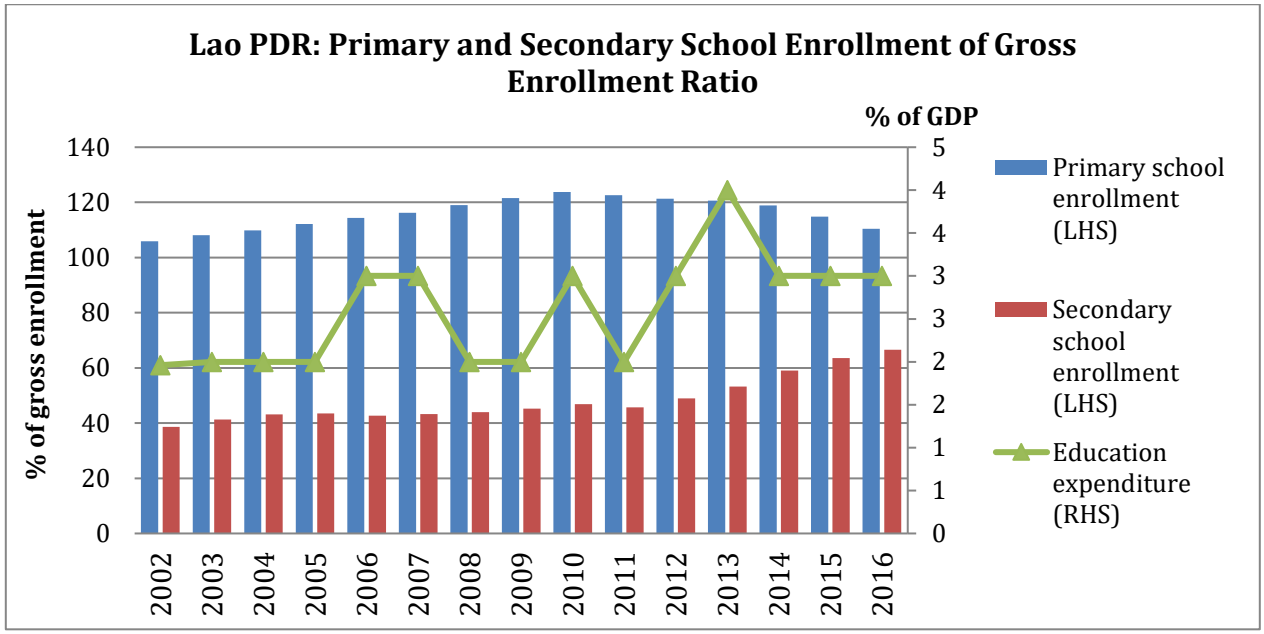
With regard to the education sector (Figure 9) it shows that the expenditure on education was slightly fluctuated and had an average of around 3% of GDP over the past 10 years. The primary school enrollment rate was slightly increased from 106% in 2002 to 124% in 2011 and started to decline continuously to 110% in 2016. The secondary school enrollment rate had slightly fluctuated and started to increase over time from 46% in 2011 to 67% in 2016. Historical data shows that the secondary school enrollment rate has improved, while the primary school enrollment rate even has a higher rate but is still in a slightly downward trend.

For the health sector (Figure 10) it shows that the expenditure on health fluctuated and had an average of around 1% of GDP over the past 10 years. The life expectancy at birth increased continuously but was still in the slower trend from 60 years in 2002 to 67 years in 2016. Historical data shows that life expectancy at birth has improved gradually. However, compared to neighbors Laos still lags behind.

However, by study from literature in order to assess the efficiency of the government expenditure on education and health sector to their outputs such as the primary and secondary school enrollment rate and the life expectancy at birth, respectively, this paper uses the historical data to find the causality between input and output. From analyzing the data, this approach could not identify any in-depth correlation between input and output. The improvement of their output such as the primary and secondary school enrollment rate and the life expectancy at birth could not be said to be related only to the size/level of government expenditure on both sectors. For example, the output of education was influenced by family background (GDP per capita) and the education of parents. Therefore, the budget allocations are still a poor proxy for how services reach intended beneficiaries[6]. Moreover, with regard to the concept of efficiency itself, sometimes increasing input and being able to gain more output does not necessarily imply that spending was efficient. The influence of exogenous factors must also be considered.

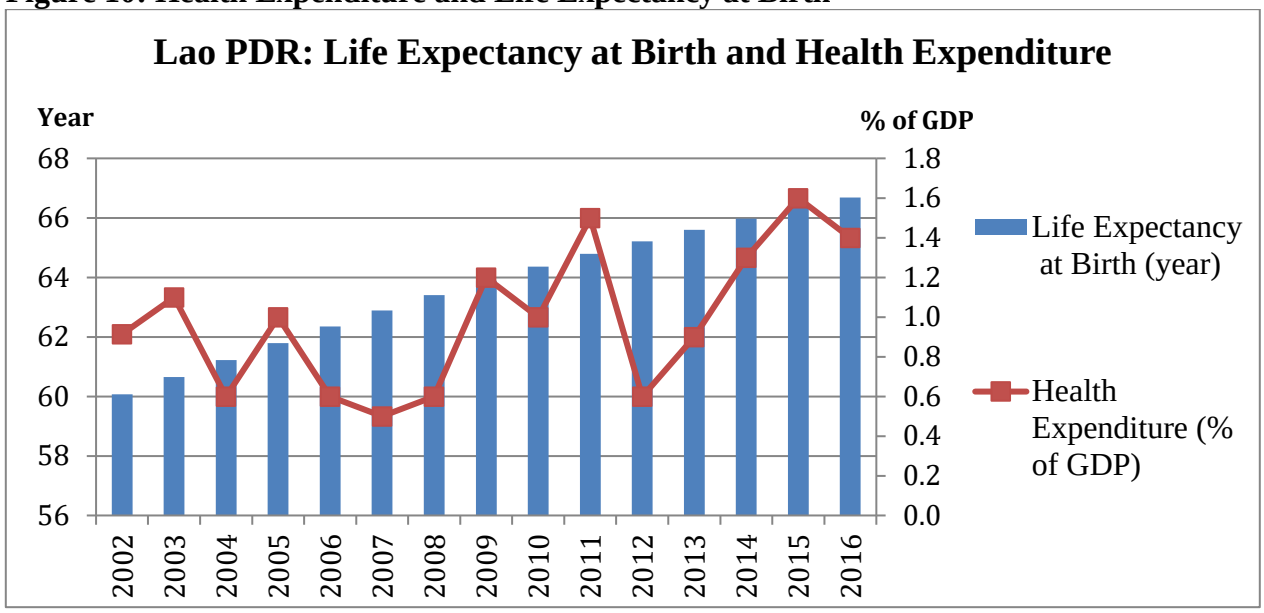
[6] The World Bank, *"Lao PDR Public Expenditure Tracking Survey in Primary Education and Primary Health, 2008."*

Figure 9: Education Expenditure and Primary and Secondary School Enrollment of Gross Enrollment Ratio



Source: Lao Official Gazette, Ministry of Finance and IMF: WEO Database.

Figure 10: Health Expenditure and Life Expectancy at Birth



Source: Lao Official Gazette, Ministry of Finance and IMF: WEO Database.

4.3. The government debt cost and economic growth

4.3.1. The relationship between debt, interest payment, capital expenditure and efficiency

Lao PDR still faces a high fiscal deficit, which is caused by the lack of fiscal resources to develop the country. The Lao government needs to borrow funds from domestic or external sources. Borrowing from external sources is one of the options to support the investment. Therefore, it puts

debt sustainability at risk. High debt implies higher cost for the government. Since the majority of government investment is from the external borrowing in foreign currency, exchange rate risks arise. More debt accumulation leads to the increase in government interest payment. Against this background, how to use borrowed funds more efficiently or ensuring the productivity of capital expenditure is very crucial. Hence, the borrowed funds must be used for productive investment, where the government can gain the returns exceeding the cost or the highest return socially and economically. In other words, the investment carried out by external borrowing should generate foreign currency income for the country, for example, the hydropower sector which is expected to help Laos gains more foreign currency inflows by exporting. For these reasons, at the stage where Laos still relies on external borrowing, the debt management as well as the government investment management being more effective are very crucial for the government.

4.3.2. Lao PDR is faced with fiscal risks due to the huge general gross debt over the past years. Since 2002, government gross debt to GDP amounted to almost 100% and started to slightly decline to 58% of GDP in 2016, of which external debt stock amounted to 52% of GDP. This shows that Laos still relies on external debt since facing a fiscal deficit every year, which leads to higher cost for the government. As Figure 11 shows the interest payment has been increasing overtime since the year 2008 and 2009 and it was around 1.3% of GDP in 2016 due to debt payment both domestic and external. That would have the effect of increasing debt servicing needs. While the Lao economy has experienced continuous growth at 7% in 2016, it still faces the challenge of high public debt, mainly the external debt. The projected decline in the debt to GDP ratio is also helped by a pick-up in GDP growth.

The high level of budget deficit, current account deficit and public debt level is the main challenge for Lao PDR. This approach is to assess the debt gross cost of the government and the real growth rate by analyzing from data and facts, which are shown as below:

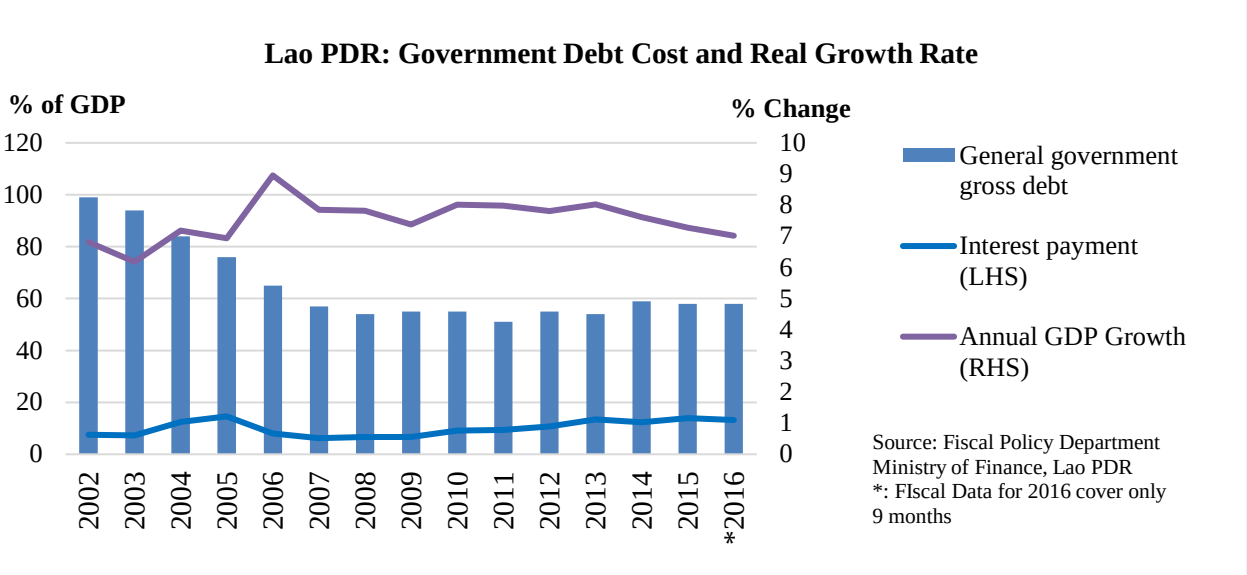
1) Based on the hypothesis of the previous approach, which is how the government should allocate resources on capital expenditure rather than current expenditure, in the case of Laos, which has a negative saving-investment gap and a lack of domestic resources, an increase in investment will lead to an increase in borrowing. High debt implies higher cost for the government.
2) Recently, the Lao PDR public debt level has remained high since the growing of a high fiscal deficit. In 2016 the public and publicly-guaranteed debt was about 58% of GDP, in which the external debt was the main portion. The more external debt to GDP ratio remained high, it could be implied that almost half of the government revenue for investment/capital saving would

largely be foreign loans which worsened Lao government on the cost of deficit financing. Those lead to rising government current expenditure then rising total government expenditure. Nevertheless, Lao PDR public debt service remained manageable as much of the debt was contracted on concessional terms, but Laos was still burdened with a high debt stock ratio.

3) The borrowed funds used inefficiently, which is shown in some investment projects that still have not yielded the expected returns or reached expected value-for-money and have instead yielded the opposite, still have shown unreasonably high costs. Those results caused projects to have low effectiveness and be unsustainable. Against this background, utilizing external borrowing more efficiently is crucial for Lao government.

4) Now the government has already made an effort to control public investment projects. In terms of the legal framework, there are the new Public Debt Management Law and the new Public Procurement Law, which were approved by the National Assembly in 2018 and 2017, respectively. Therefore, this could be a good starting point for taking the risks posed by the high level of public debt and the ineffectiveness of some investment projects into account under these laws in order to ensure that all projects are implemented in strict accordance with the procurement law, an inappropriate procurement and implementation mechanism would result in over-expenditure, wastage, leakages, and unbearable costs for a capital scarce and heavily indebted developing economy like the case of Sri Lanka[7]. The limiting of annual borrowing and restriction of new debt to concessional terms has to be considered under the public debt management law.

Figure 11: Government Debt Cost and Real Growth Rate



[7] Sri Lanka Journal of Economic Research Volume 4 (1) December 2016.

5. Policy Recommendations

The 8th Five-Year National Socio-Economic Development Plan (2016-2020) has the goal to ensure that expenditure management is in line with the financial plan that is approved by the National Assembly, that is to use the budget to maximum efficiency. Also, recurrent cost shall be planned in detail and inspected systematically. Together with the empirical findings from this study, the possible policy recommendation for the development plan in the future should be considered as below:

5.1. Strengthened project selection process

In order to alleviate investment projects that have not yielded the expected returns or reached the expected value-for-money and instead yielded the opposite, and still have shown unreasonably high costs, the government needs to play an important role in the strengthened project selection process beforehand and emphasize using borrowed funds productively with returns exceeding the costs, which could be financial returns or benefits for the country. The decisions about allocation of resources to different sectors and investment projects should ideally be based on efficiency. What are the benefits compared to the costs of the projects? In the short term, the main focus will tend to be on static efficiency: what are the expected results of allocating resources to certain sectors based on their current capacity to deliver specific public goods and services? In a longer-term perspective, dynamic efficiency becomes more important: resource allocation should also be governed by the possibilities for improving the capacity of the sectors over time, and investment projects will play a critical role in this regard[8].

Develop a comprehensive financial management system in order to monitor the entire project implementation as well as payments, settlement of arrears and cost completed and ongoing projects. Also, it is necessary to strictly projects inspection and assessment effectively. The past paper's empirical finding stated that the urgent necessity of re-establishing an efficient public investment planning and management mechanism be capable in order to ensure not only the most effective and efficient capital deployment but also the quality of public investment[9] in view of maximizing the accrual of national economic benefits including added value multiplication through the implementation of public sector development projects. Enhancing all government investment projects under the Public Procurement Law to ensure reasonable cost of investment and gains that are return to the national economy is necessary. Those considerations are to rationalize public

[8] IMF. PFM Blog 2009.
[9] Chakraborty and Dabla-Norris (2009) on the "quality" of public investment.

investment in the future. The funds must be channeled through rightful and efficient finance to the most profitable and rationalized projects at the appropriate time in order to meet the country's need.

5.2. Improvement of priority exogenous factors

The priority exogenous factors that need to be considered for improvement and strengthening might be the government institution as a whole including public finance management and human resource management in order to improve the efficiency of government expenditure.

The government institution is one of the key areas to focus on; both the tax administration and expenditure management must be developed with the help of a higher level of technology and staff skills and of overall governance system with greater accountability and transparency.

Public finance management: besides setting the prioritization of government spending more efficiently and effectively, public finance management needs to be considered as an important instrument of government. Improving the efficiency and effectiveness of public spending requires the reform of fiscal planning, budgeting, implementation and monitoring (Open Knowledge, The World Bank).

Development planning and budgeting integrated through operationalization of MTEF. MTEF as a mechanism to help countries escape from the incrementalism inherent in traditional annual budgets, to improve the realism of sector planning, to make policy fiscally sustainable, and to lay the basis for further refinement of the planning and budget system. They can also strengthen the links between national plans and annual budgets, and between the capital and recurrent parts of a dual budget system[10].

In the case of Lao PDR, in order to enhance efficiency of budget expenditure management together with the government spending efficiency, to fulfil the aims of the public finance development strategy 2015 and Vision 2030 and to align with Medium-Term Budget Framework for four years (2017-2020) approved by the National Assembly, the government should give more effort to revise some expenditure policies as below:

- Since the Lao budget still is mostly input based, relying on aggregate budget indicators, even the NSEDP goals are guided by the budget preparation but their link to each other is still not fully developed. The developing the Medium-Term Fiscal Framework would help improve state fiscal statistics as a comprehensive system, develop the Medium-Term Expenditure

[10] The World Bank: *"Lao PDR Public Expenditure Review, June 2011"*.

Framework (MTEF) in order to set the ceiling for line ministries and improve annual budgeting somewhat in line with medium term expenditure envelopes. Those are important to help all budgetary resources, which would lead to help improving public sector efficiency and effectiveness.

- Development of a public debt management strategy and the secondary legislations, since now the public debt management law has been approved by the National Assembly in this year, 2018. The public debt management strategy will mainly help to define the medium and long-term public debt ratio, the borrowing plan, debt management operation plan and the measurement to reduce costs and risks of debts.
- Having clear responsibilities between the Ministry of Finance and the budgetary units (line ministries) in terms of budget execution are very important and lead to the efficiency of budget spending such as assigning responsibilities for ex-ante expenditure control to budget units, while MOF conducts post spending audits.
- Consideration should be given to how to change the allocation of future spending to be more equally or appropriately divided between current and capital expenditure to reform the budget structure, and then to help government to be able to save resources from one area to spend more in another area for socio-economic development.

Human resource management: in general, the government also has a clear strategy to develop this area. However, it still needs to be well-directed. The plan is to prepare the Job Description and Criteria of each position. As the Job Description would contribute to staff stability and reduce the number of people in the recruited list, together with the criteria, that would help to select the right people with the right specialization and competency. The government might need to conduct the training for specific sectors particularly in the tax administration sector and the budgetary sector.

5.3. Development of reliable efficiency measurements of government expenditure

The efficiency measurements of government expenditure are required to measure input, output and the final outcomes of the government expenditure. Therefore, the development, improvement and accurate defining of input, output and outcomes is necessary and they may influence the result though the appropriate methodology. This is because the historical budget process in Lao PDR was still based on input. Still, there is usually discussion among MOF and line ministries during the budget proposal on what are their objectives used of the budget within the year; however, the budget process by relying on the discussion of outputs and outcomes is still not fully required. Therefore, in the future, the budget process consultation should be developed based on the real output and outcome of the objectives set.

In line with development of the efficiency measurements of government expenditure, the quality database development is one important factor for the government to consider. Lao PDR, as many new state member countries, still faces this issue, in terms of lacking availability of a government sector database. In the case of Laos, the quantitative data is still not fully gathered, which leads policy makers to not be able to obtain accurate data. Therefore, strengthening statistic compilation or developing a new system might be one area to consider. It might be costly for the government but on the other hand it might be worth it for the government investment for the long term.

6. Conclusion

Improving the efficiency of government expenditure has become a more necessary policy challenge for many developed and developing countries. In the case of Lao PDR, which has limited fiscal resources available, external borrowing has continued to worsen fiscal conditions and put public debt sustainability at risk. Against this background, fiscal consolidation aiming at fiscal sustainability along with the effort to improve the efficiency of government expenditure is of critical importance.

By using the historical fiscal data to analyze how government expenditure contributes to economic growth in order to assess the efficiency of the government expenditure, this paper finds that the assessment of the efficiency of government expenditure is very critical but it is not simple in practical terms. The assessment by looking only at the contribution of government expenditure to real growth rate could not be possible to provide the definitive answer in terms of their causality since it requires specific and in-depth input and output indicators. In addition, this paper finds that Laos is fiscally constrained with limited domestic resources and relying on external borrowing could be an obvious finding which links to the efficiency of government expenditure on how we could allocate limited fiscal resources and spending more efficiently as well as how to deal with the government debt cost into account. It also discusses how the efficiency of government expenditure is influenced by exogenous factors, by not only input and output, which needs to be improved.

In order to help the Lao government to find ways to improve the efficiency of government expenditure in order to contribute to achieving the goals to be set by the 9th Five-Year National Socio-Economic Development Plan, the possible policy recommendations in the medium to long-term are proposed as a strengthened project selection process for rational public investment by emphasizing using borrowed funds productively with returns exceeding the costs, which could be financial returns or benefits for the country and how to deal with government debt cost;

improvement of the priority of exogenous factors, such as government institutions, both the tax administration and expenditure management must be developed with the help of a higher level of technology and staff skills and of the overall governance system with greater accountability and transparency, improving human resource management with a clear setting of job discretion and criteria; and public finance management which focuses on the reform of fiscal planning, budgeting, implementation and monitoring and legal framework. Moreover, the government should develop reliable efficiency measurements of government expenditure.

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