External Debt and Economic Growth: 
Case of Lao PDR

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Overview of Lao PDR

Capital city: Vientiane

• Total Area: **236,800 sq km**

• Population: In 2015 estimated at **6.8 million**

• Currency: **Kip**
Outline of Research

I. Introduction

II. Literature Reviews

III. The Overview of Lao Economy

IV. Methodology of Analysis

V. Data Analysis and Discussion of Results

VI. Conclusion and Policy Implications
Part I: Introduction

• Sustainability of economic growth is the key issue for every developing country and they want to control their fiscal deficit. Therefore, the loans from overseas are one of the main components of modern public finance.

• Many countries face situations where the accumulation of debt helped to finance many unprofitable, unrealistic and low investment efficiency projects that induced a negative impact on economic growth.
The propose of the research

• This research aims at measuring the impact of external debt on economic stability in Lao PDR.

• The main idea is to research the impact of external debt on economic growth both in the short-term and long-term by looking into the relationship between external debt and debt service to GDP.
Research Question

- This research wants to answer some questions which are related to the impact of external debt on economic growth in Lao PDR. More specifically, the research addresses the following questions:

  - Does external borrowing affect economic growth in Lao PDR?

  - How do debt services have an influence on economic growth in Lao PDR?
Part 2: Literature Reviews

• The empirical literature on external debt and economic growth.

• Theoretical Framework.
The empirical literature

• Many economists have tried to investigate the effect of external debt on economic growth.

• Some research concluded that there is a positive effect of external debt on economic growth as the external debt gives a boost to the economy.

• On the other hand, some concluded a negative relationship between external debt and economic growth because of the inefficient allocation of the resources.
The empirical literature

- Malik and Hayat (2010) studied the result of external debt on economic performance of Pakistan. They concluded that a high amount of foreign debt does not add value to the economic development of Pakistan.

- Iyoha (1999) examined the impact of external debt on growth in the south of the Sahara countries in Africa. He concluded that if the debt was reduced by 20%, the investment will grow by 18% over the study period and that GDP will grow by 1%.
The empirical literature

- Hameed et al., (2008) argued that increasing debt services liabilities would reduce economic growth in the long term as a large portion of government revenue would be allocated to pay interest payments.

- Kumar and Woo (2010), based on a panel of advanced and emerging economies over almost four decades, found that on average a 10 percentage point increase in the initial debt-to-GDP ratio is associated with a slowdown in annual real per capita GDP growth of around 0.2 percentage points per year.
Theoretical Framework

• The debt overhang theory explained that if a country borrowed money to utilize effective and efficient productive investment, then it could support the economic growth of a country. On the other hand, economic development may be influenced by the large amount of external borrowing.
Theoretical Framework

- IMF and World Bank staff in 2013 explained that when the accumulated debt amount is higher than the threshold level of a country’s repayment capacity, people will expect default which may cause investors to withdraw their money, and this will negatively affect the economic growth of a country.
Debt Sustainability Framework (DSF)

• The debt sustainability framework (DSF) is a standardized framework for conducting debt sustainability analysis (DSA) in low-income countries (LICs).

• DSF is to help guide the borrowing decisions of LICs, provide guidance for creditors’ lending and grant allocation decisions, and inform IMF and World Bank analysis and policy advice.
Debt Sustainability Framework (DSF)

- The DSF consist of two components: an external DSA and a public DSA.

- However, the DSF lumps these two elements together into what is referred to as public and publicly guaranteed (PPG) external debt.
Debt Sustainability Framework (DSF)

- The DSF includes indicative thresholds that facilitate the assessment of solvency and liquidity risk.

- The thresholds depend on the quality of a Country’s Policies and Institutions Assessment (CPIA), reflecting the empirical observation that LICs with weaker policies and institutions are more likely to face repayment problems at lower debt ratios.
PPG external debt thresholds

<table>
<thead>
<tr>
<th>Quality of policies and institutions (CPIA)</th>
<th>PV of PPG external debt in percent of</th>
<th>PPG external debt service in percent of</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GDP</td>
<td>Exports</td>
</tr>
<tr>
<td>Weak</td>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>Medium</td>
<td>40</td>
<td>150</td>
</tr>
<tr>
<td>Strong</td>
<td>50</td>
<td>200</td>
</tr>
</tbody>
</table>

Source: IMF staff guidance note on the application of the joint Bank-Fund Debt Sustainability Framework for Low-Income Countries 2013
Part III: The Overview of Lao Economy

- Recent Economic Development.
- Medium Term Budget Framework for Laos.
- Financing Source for 8th NSEDP.
Recent Economic Development

GDP Growth and GDP per capita

Source: Ministry of Planning and Investment

Note: Fiscal year starts from October 1 to September 30
Recent Economic Development

• Monetary Policy
  ▫ The goals of monetary policy continued to achieve long-term price stability and sustainable economic growth.
  ▫ The Bank of Laos short-term lending interest rate with a maturity less than 14 days was at 5.625% per annum and less than 1 year at 11.25% per annum.
  ▫ The reserve requirement ratio was maintained at 5% for Kip deposits and 10% for foreign currency deposits.
  ▫ Open market operation by issuing BOL securities to absorb excessive liquidity.
Recent Economic Development

Inflation rate compared to neighboring countries

Source: IMF World Economic Outlook 2014
Recent Economic Development

• Balance of Payments
  ▫ In 2015, the balance of payments surplus was 171 million USD (the capital and financial account surplus was 2.816 billion USD, while the current account balance had a deficit of 2.265 billion USD).
  ▫ Foreign exchange reserves at the end of 2015 amounted to 986.8 million USD, which covered 6.37 months of imports of goods and services.
Recent Economic Development

Current Account Balance

Source: Annual Economic Report 2015, Bank of Laos
Recent Economic Development
Capital and Financial Account Balance

Million of USD

Source: Annual Economic Report 2015, Bank of Laos
Recent Economic Development

External Debt and Debt services

Source: Annual Economic Report 2015, Bank of Laos
Recent Economic Development

The structure of PPG external debt

Source: Ministry of Finance of Laos
Recent Economic Development

• Fiscal Policy
  ▫ Tightening fiscal policy is still the main priority policy in the fiscal sector, in FY 2014-15 the expenditure declined to 26.9% of GDP from 29.2% in 2013-14.

  ▫ Revised some regulation to increase tax collection such as: revised budget law, tax law, custom law and so on.

  ▫ Fiscal deficit no more than 5% (FY2014-15 still remains at same level from the previous year).
Recent Economic Development
Budget implementation

(% of GDP)

Source: Ministry of Finance of Laos
Medium Term Budget Framework for Laos

- Ministry of Finance of Laos has developed the Medium Term Budget Framework to support the 8th National Social - Economic Development Plan (NSEDP)

- The main multiyear fiscal policy objectives are to ensure sustainable economic growth in Lao for the next five years.

- Ensure that source of revenue has to be enough to stimulate growth and reduce budget deficit.
## Medium Term Budget Framework for Laos

### Fiscal Projection for the next five years

<table>
<thead>
<tr>
<th></th>
<th>Plan 2016</th>
<th>Plan 2017</th>
<th>Plan 2018</th>
<th>Plan 2019</th>
<th>Plan 2020</th>
<th>Average 5 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I Total Revenue</strong></td>
<td>20.8%</td>
<td>19.6%</td>
<td>19.4%</td>
<td>19.4%</td>
<td>19.4%</td>
<td>19.7%</td>
</tr>
<tr>
<td>1.1 Domestic Revenue (Tax and Non-tax)</td>
<td>18.6%</td>
<td>16.9%</td>
<td>16.9%</td>
<td>17.0%</td>
<td>17.2%</td>
<td>17.3%</td>
</tr>
<tr>
<td>1.2 Grants</td>
<td>2.2%</td>
<td>2.7%</td>
<td>2.4%</td>
<td>2.4%</td>
<td>2.2%</td>
<td>2.4%</td>
</tr>
<tr>
<td><strong>II Total Expenditure</strong></td>
<td>23.4%</td>
<td>25.4%</td>
<td>24.4%</td>
<td>22.7%</td>
<td>21.6%</td>
<td>23.3%</td>
</tr>
<tr>
<td>2.1 Current Expenditure</td>
<td>15.7%</td>
<td>14.8%</td>
<td>14.3%</td>
<td>13.9%</td>
<td>13.4%</td>
<td>14.4%</td>
</tr>
<tr>
<td>2.2 Capital Expenditure</td>
<td>7.7%</td>
<td>10.7%</td>
<td>10.1%</td>
<td>8.9%</td>
<td>8.1%</td>
<td>9.0%</td>
</tr>
<tr>
<td><strong>III Fiscal Deficit</strong></td>
<td>-2.6%</td>
<td>-5.9%</td>
<td>-5.0%</td>
<td>-3.3%</td>
<td>-2.1%</td>
<td>-3.7%</td>
</tr>
<tr>
<td><strong>IV Financing Source</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1 Net Foreign Financing</td>
<td>0.5%</td>
<td>2.9%</td>
<td>2.1%</td>
<td>1.0%</td>
<td>-0.1%</td>
<td>1.2%</td>
</tr>
<tr>
<td>4.2 Net Domestic Financing</td>
<td>1.8%</td>
<td>2.9%</td>
<td>2.9%</td>
<td>2.2%</td>
<td>2.2%</td>
<td>2.4%</td>
</tr>
<tr>
<td><strong>V Residual</strong></td>
<td>-0.3%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>-0.1%</td>
</tr>
</tbody>
</table>

Source: Ministry of Finance of Laos
The 8th National Social Economic Development Plan (NSEDP)

- The goal of the 8th NSEDP
  - The average rate of real GDP growth is 7.5% per annum.
  - Ensure that GDP per capita is over $3,190 by 2020.
  - Reduces poverty to 10% in 2020 to favorable conditions for graduation from LDC status by 2020.
  - Ensure inclusive and sustainable development by promoting industrialization and services, preserving natural resources, and protecting the environment.
  - Ensure political stability, peace and an orderly society.
Financing Source for 8th National Social Economic Development Plan (NSEDP)

- To support a growth rate at 7.5%, the total investment was estimated to be about 30% of the GDP each year.

- FDI would be expected to finance about 54-57% of total investments.

- Public sector: Revenues are explicitly committed to finance about 9-11% of the overall investment target (budgetary fiscal financing).
Financing Source for 8th National Social Economic Development Plan (NSEDP)

- Domestic credit is expected to finance another 19-21% of total investment.

- Grant and loan (ODA) from donor would be expected to finance about 12-16% of total investment.

- The non-fiscal financing for this plan includes FDI and bank credit that provides more than 75% of the 8th Plan’s investment funds.
Part IV: Methodology of Analysis

• Secondary data was used in this study for the purpose of gathering background information and comparing past experiences with the current.

• This study used sample econometric techniques to interpret the relationship between external debt, debt service and economic growth in Lao.

• The sample size of time series data covered 20 years from 1996 to 2015.
Part IV: Methodology of Analysis

• The estimation of the impact of external debt on economic growth of Lao PDR was used the equation estimated growth model as suggested by Malik et al. (2010) as below:

\[ GDP = f(ED, DS) \]  \hspace{1cm} (1)

• The econometric equations are as follows:

\[ GDP = \alpha + \beta ED + \varepsilon \]  \hspace{1cm} (2)
\[ GDP = \alpha + \beta DS + \varepsilon \]  \hspace{1cm} (3)
\[ GDP = \alpha + \beta_1 ED + \beta_2 DS + \varepsilon \]  \hspace{1cm} (4)
Part V: Data Analysis and Discussion of the Results

The recent economic growth and external debt of Laos

Source: Ministry of Finance of Laos
The relationship between external debt and Economic growth of Laos

The estimation results of Model (2)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED</td>
<td>-0.041014</td>
<td>0.011026</td>
<td>-3.719607</td>
<td>0.0016</td>
</tr>
<tr>
<td>C</td>
<td>9.513908</td>
<td>0.685097</td>
<td>13.88695</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

R-squared: 0.434593
Adjusted R-squared: 0.403182
S.E. of regression: 0.851469
Sum squared resid: 13.04998
Log likelihood: -24.10931
F-statistic: 13.83548
Prob(F-statistic): 0.001569
The relationship between debt service and Economic growth of Laos

The estimation results of Model (3)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS</td>
<td>-0.423133</td>
<td>0.140435</td>
<td>-3.013015</td>
<td>0.0075</td>
</tr>
<tr>
<td>C</td>
<td>9.742949</td>
<td>0.912131</td>
<td>10.68152</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

- R-squared: 0.335260
- Adjusted R-squared: 0.298330
- S.E. of regression: 0.923239
- Sum squared resid: 15.34265
- Log likelihood: -25.72781
- F-statistic: 9.078260
- Prob(F-statistic): 0.007471

Mean dependent var | 7.066000
S.D. dependent var | 1.102167
Akaike info criterion | 2.772781
Schwarz criterion | 2.872355
Hannan-Quinn criter. | 2.792219
Durbin-Watson stat | 0.935694
The Impact of ED and DS on Laos Economic Growth

- The model of estimation

\[ GDP = \alpha + \beta_1 ED + \beta_2 DS + \varepsilon \]  \hspace{1cm} (4)

Where:

- GDP is percentage of economic growth;
- \( \alpha \) = Constant term;
- \( \beta \) is Responsiveness coefficient of the independent variable to the dependent variable,
- ED = External Debt ratio to GDP;
- DS = Debt Servicing to GDP;
- \( \varepsilon \) = Random error term.
Debt Sustainability Analysis (DSA) for Laos PDR.

<table>
<thead>
<tr>
<th></th>
<th>Indicative thresholds</th>
<th>End-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present value of debt, in percent of:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>40</td>
<td>42</td>
</tr>
<tr>
<td>Exports</td>
<td>150</td>
<td>96</td>
</tr>
<tr>
<td>Revenue</td>
<td>250</td>
<td>236</td>
</tr>
<tr>
<td>Debt service, in percent of:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exports</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>Revenue</td>
<td>20</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: IMF Article IV consultation for Laos, February, 2015
The Impact of ED and DS on Laos Economic Growth

The estimation results of model (4)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED</td>
<td>-0.030484</td>
<td>0.012485</td>
<td>-2.441665</td>
<td>0.0258</td>
</tr>
<tr>
<td>DS</td>
<td>-0.233284</td>
<td>0.146649</td>
<td>-1.590763</td>
<td>0.1301</td>
</tr>
<tr>
<td>C</td>
<td>10.36129</td>
<td>0.846367</td>
<td>12.24209</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

R-squared 0.507852, Adjusted R-squared 0.449952, S.E. of regression 0.817425, Sum squared resid 11.35912, Log likelihood -22.72166, F-statistic 8.771212, Prob(F-statistic) 0.002414.
Part VI: Conclusion and Policy Implications

• Conclusion
  ▫ This paper concludes that there is significant impact of external debt and debt service on economic growth in Laos. Both external debt and debt service payment have a negative affect on GDP.

  ▫ Firstly, past data indicates that there is some relationship between external debt and economic growth in Lao PDR.
Conclusion cont.

- Secondly, the IMF article IV consultation report in February 2015 concluded that Lao PDR external debt distress still remains moderate but it is on a transition to high risk with heightened vulnerabilities for public debt.

- Finally, this research using the econometric technique to estimate suggested that there is a negative relationship between external debt and GDP.
Policy Implication

• In order to support economic growth without debt burden, the government of Lao PDR should pay more attention to the debt management profile and tightening fiscal policy.

• The government should establish, maintain and manage a credible database.

• The government should establish transparency of loan information such as project identification, loan approval, loan negotiations, loan contracting, loan disbursements, project implementation monitoring and so on.
Policy Implication

- The government should provide a policy framework that is credibly creating an environment which will encourage investors to invest in our country.

- The capacity building of staff is a key importance to improve debt management in Laos.

- The government needs to encourage staff who are in charge of debt management to learn more and gain knowledge on debt management in our country, and welcome all technical assistance from donors to support our debt management program.
THANK YOU