



INEQUALITY AND ECONOMIC DEVELOPMENT IN LAO PDR
SINCE THE 1986 ECONOMIC REFORM

BY

MR. SINTHAVANH CHANTHAVONG

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF ARTS
(ASIA PACIFIC STUDIES)
COLLEGE OF INTERDISCIPLINARY STUDIES
THAMMASAT UNIVERSITY
ACADEMIC YEAR 2017
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THESIS

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MR SINTHAVANH CHANTAHVONG

ENTITLED

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SINCE THE 1986 ECONOMIC REFORM

was approved as partial fulfillment of the requirements for
the degree of Master of Arts (Asia Pacific Studies)

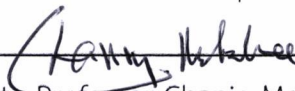
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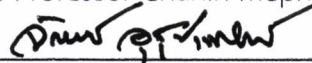
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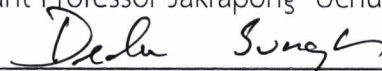
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ABSTRACT

Lao PDR has experienced a high rate of economic growth over decades after undergoing economic reform toward a market-oriented economy in 1986. Meanwhile, inequality has been varying in a similar trend as the growth resulting in some development concerns to be addressed. This study is an attempt to review the pattern of and to identify the determinants of inequality in Lao PDR by estimating a longitudinal cross-sectional econometric model based on 17 x 3 samples in Lao provinces over three periods (2003, 2008, & 2013). In order to find the determinants of the rising inequality, the econometric models covering economic development, globalization, and institutional factors were examined. As a result, the study found that economic development was positively associated with the rising inequality. Moreover, it is found that internationalization represented by the FDI inflow has a positive relationship with the Gini coefficient. The Kuznets's inverted U-curve relationship between inequality and economic growth was not found in this study.

Keywords: Economic Development, Inequality, Determinants of Inequality, Economic Reform of Lao PDR, Gini Coefficient

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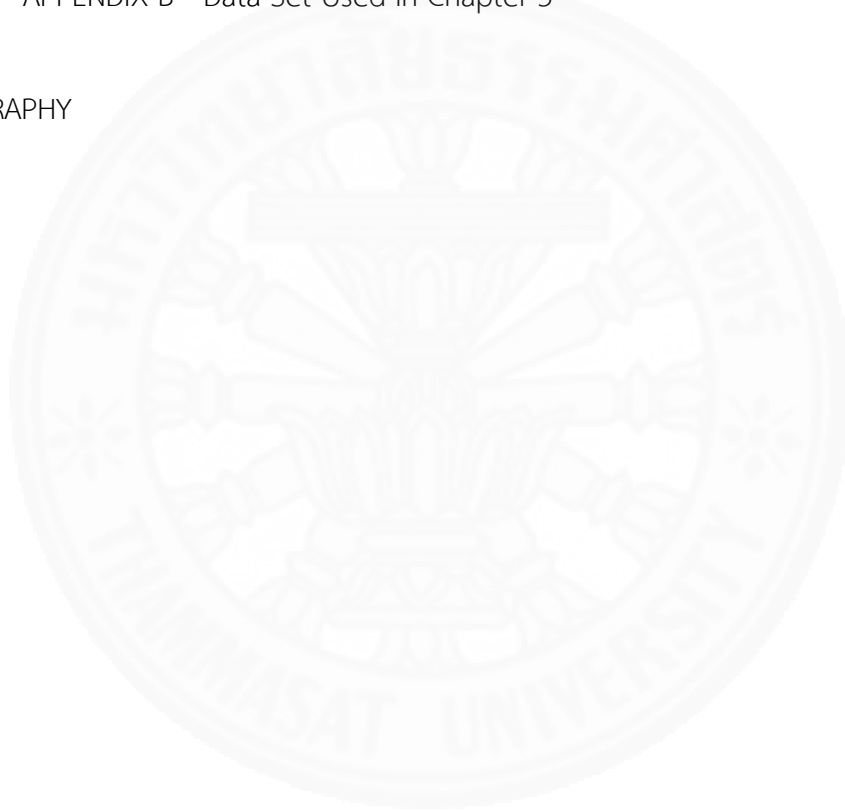
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TABLE OF CONTENTS

	Page
ABSTRACT	(1)
ACKNOWLEDGEMENTS	(2)
LIST OF TABLES	(6)
LIST OF FIGURES	(7)
CHAPTER 1 INTRODUCTION	1
1.1 Background of Problem	1
1.2 Research Objectives	3
1.3 Scope of Study	3
1.4 Structure of the Thesis	4
CHAPTER 2 REVIEW OF LITERATURE	5
2.1 Determinants of Inequality	5
2.1.1 Internal Development Model	6
2.1.2 Globalization (FDI and International Trade)	8
2.1.3 State – Institutional Factors	12
2.2 List Reviews	14
2.3 Literature Gap	17
CHAPTER 3 RESEARCH METHODOLOGY	18
3.1 Source of Data	18
3.2 Data Analysis	19

	(4)
3.2.1 Examining the Equality Circumstance in Lao PDR	19
3.2.2 Analyzing the Determinants of Expenditure Inequality	19
3.3 Limitations of the Study	25
CHAPTER 4 AN INITIAL INTRODUCTION TO INEQUALITY CIRCUMSTANCE AND SOCIAL ECONOMIC PROFILE OF LAO PDR	26
4.1 A Short Introduction to Laos in General and to Laotian Economy	26
4.1.1 Lao State in Early Time	27
4.1.2 Laos during Planned System and the Reform towards Market Oriented	28
4.1.3 Laos since the 1986 Economic Reform	34
4.2 Inequality Circumstance in Lao PDR	49
4.3 An Initial Attempt to Find the Causes of the Rising Inequality	54
4.4 Lao Government's Roles and Policies Responding to the Rising Inequality	56
CHAPTER 5 RESULT AND DISCUSSION	59
5.1 Regression Result	60
5.2 Discussion and Analysis	61
5.2.1 Income Growth and Inequality	61
5.2.2 Internal Development Model	61
5.2.3 Internationalization	64
5.2.4 State-institutional Factors	64
CHAPTER 6 CONCLUSION AND POLICY IMPLICATION	67
6.1 Summary	67
6.2 Policy Recommendations	68
6.3 Recommendations for Future Study	69

	(5)
REFERENCES	70
APPENDICES	
APPENDIX A Lao Expenditure and Consumption Survey (LECS) Questionnaire (Only income and Consumption Expenditure are Selected)	76
APPENDIX B Data Set Used in Chapter 5	78
BIOGRAPHY	81



LIST OF TABLES

Tables	Page
1.1 evolution of economic growth, poverty, and inequality in Lao PDR since 1992-2013	2
3.1 Variables Definitions and Source of Data	22
3.2 Expected result of the analysis	24
4.1 GDP deflator and nominal GDP (In million Kip)	30
4.2 The Fundamental Diminutions of Economic System (Comparing two Systems)	32
4.3 Total employment and composition in each sector, selected years	39
4.4 Labor Productivity and Wage Across Sectors	39
4.5 Percent of Lao Household has an access to Road	48
4.6 Percent of Lao Household has an access to Electricity	48
4.7 Percent of Lao Household has an access to Land	48
4.8 Average Level of Real Expenditure per Person (LK) by Quintile Group (CPI-Deflator 1992-1993)	51
4.9 Gini coefficient in Laos and Lao Regions	52
4.10 Gini coefficient Laos and countries in the region	53
4.11 Decomposition of Inequality in Laos by Provinces and Rural-Urban	54
4.12 Access to Primary School by Quintiles (age 6-10)	57
4.13 Access to Hospital-Based Outpatient Care and Electric Supply	58
5.1 Regression Result	59
5.2 Composition of Lao Government Expenditure on Education and Health in Three Fiscal Years	65

LIST OF FIGURES

Figures	Page
3.1 Conceptual Framework of the Study	25
4.1 Trend of Inflation and Exchange Rate (LCU per 1 \$US)	36
4.2 Sectoral (%) Share of the Lao Economy Over Periods	38
4.3 Lao Trade Volume and Trade Openness from 1990 to 2010	40
4.4 Composition of Lao Export from 1990 to 2010	41
4.5 FDI Inflow and FDI Stock of Lao PDR from 1988-2015	42
4.6 Composition of Committed FDI in Lao PDR	43
4.7 Population Growth of Lao PDR Over 3 Decades	45
4.8 Population Pyramids in 1995, 2005, and 2015	45
4.9 Adult Literacy Rate (Percent)	46
4.10 Net Primary School Enrolment	47
4.11 (A) Lorentz Curve and (B) Growth Incident Curve of Lao Households's Expenditure on Consumption in 2002/03, 2007/08, and 2012/13.	51
4.12 (A) Trade openness, FDI, (B) GDP, Agriculture sector, and Gini coefficient in Lao PDR	55

CHAPTER 1

INTRODUCTION

1.1 Background of Problem

Inequality has become a key development issue across the globe, as inequality could have a negative impact on social and economic development. It is evident that society with more equality seems to have more social trust, security, education, life expectancy and less social problems (Wilkinson & Pickett, 2009). For instance, Enamorado, López-Calva, Rodríguez-Castelán, and Winkler (2016) found that inequality, represented by Gini coefficient, has a positive impact on the number of drug-related homicides in Mexico from 1990 to 2010. One point of increment in Gini lead to an increase in the number by 36%. Moreover, in terms of economic growth, even there is a positive correlation between inequality and growth, but the quality of the growth remains an issue because inequality exposed growth that is fragile to various risks, such as the financial crisis and social and political instability. Instead, growth with equal distribution seems to be more sustainable in the long run (Ostry, Berg, & Tsangarides, 2014)

Lao PDR has been through two major economic reforms in the past 40 years. Socialist economic system was first introduced after the victory of Lao communist party in 1975, which the state controlled almost every production system (what to produce, how to produce and for whom to produce). Consequently, the development in this period was unimpressive, having many issues, such as agricultural sector dependency with inadequate food security, undeveloped industrial trap, low economic growth and other economic indicators (J. G. Anderson, 1996). Moreover, because of the disappointing result of the former system, the state rethinks its economic strategy and begun to transform its economic system toward a market-oriented economy. This reform underwent various system adjustments, namely, liberalizing market and price control, privatizing state-owned enterprise, encouraging private ownership, removing exchange rate control, embracing international trade and investment and so forth (Phimphanthavong, 2012).

Table 1.1 evolution of economic growth, poverty, and inequality in Lao PDR since 1992-2013

	1992/93	1997/98	2002/03	2007/08	2012/13
Gini Coefficient	0.31	0.38	0.35	0.36	0.38
Poverty Headcount Ratio (%)	46	39.1	33.5	27.6	23.2
GDP per capita (Current \$US)	250	345	362	709	1588

Source: <http://data.worldbank.org/country/lao-pdr> (retrieved 4.3.2017)

After the economic transition in 1986, economic development has achieved a high rate of growth of around 6.5% and 7% before and after the AFC respectively despite facing economic downturn due to the 1997 Asian Financial Crisis (Warr, Rasphone, & Menon, 2015). As illustrated in Table 1.1, the GDP per capita has heaved from 250\$US in 1992 to 1588 \$US in 2013. The factors behind this growth were mainly from the capital inflow and international trade. In addition, absolute poverty incident has been progressively resolved. Poverty headcount ratio at national poverty lines dropped from 39.2 percent in 1992 to 23.2 percent in 2013.

On the contrary, the inclusiveness has averted from the mainstream as poverty eradication and economic growth prevailed. As it could be seen in the trend of Gini coefficient in Table 1.1, inequality has increased over two decades after the economic reform. From LECS I (1992-1993) to LECS V (2012-2013), GINI coefficient increased around 0.06 points. Notably, Gini coefficient dropped in the LECS (2002-2003) as it coincides with economic downturn due to the AFC 1997. However, the inequality has significantly increased again after LECS 3. In short, despite rapid rate of economic growth and impressive poverty reduction, Laotian society has become more unequal since the economic reform.

This rising inequality became a new challenge of Lao economic development which is essential to be addressed besides poverty and growth since the poverty rate of Laos would have even declined faster if inequality had not increased (Nolintha, 2015). To deal with inequality is essential. Even to have a totally equal seems unreachable and the existing inequality are justifiable, just to reduce it from the current level is more than reasonable due to the high social cost of its existence (Atkinson, 2015)

1.2 Research Objectives

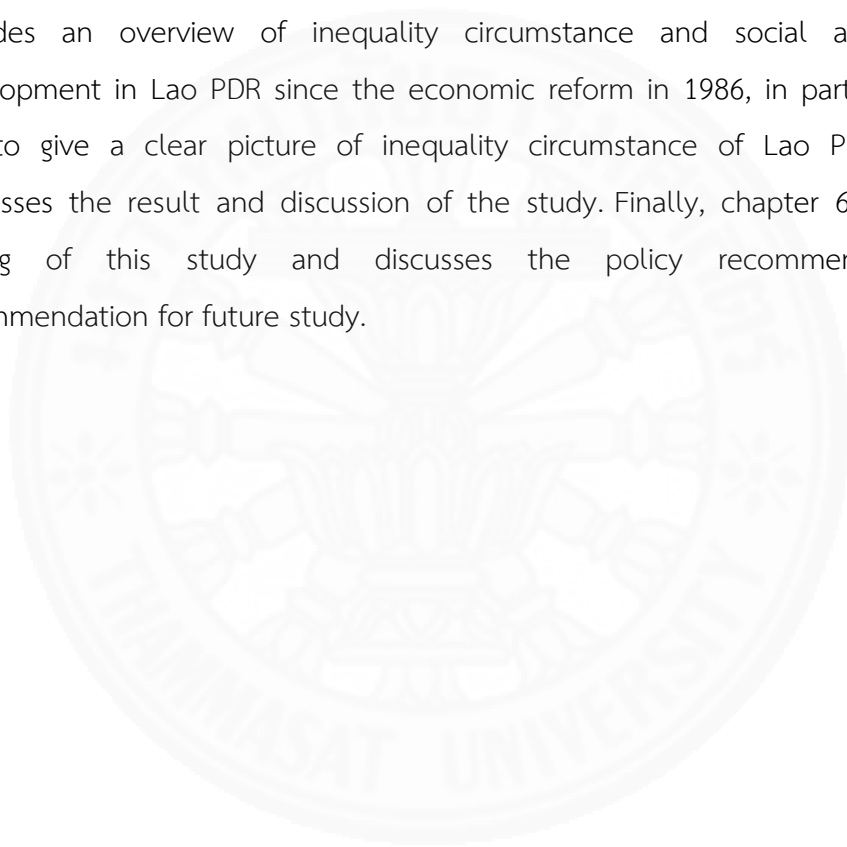
This study is an effort to develop an understanding of the expenditure disparity in Lao PDR which has worsened recently by encompassing two main objectives. (1) This study aims to investigate the consumption expenditure inequality circumstance in Lao PDR after the economic reform since 1986. (2) This study also aims to seek for the determinants of expenditure inequality in Lao PDR which drove the rise of inequality recently. The study is important for a number of reasons: firstly, the work may contribute towards a better understanding of inequality circumstance in Lao PDR. Secondly, revealing these determinants will implicate a useful direction for policymakers particularly in order to deal with the inequality issue. Lastly, this research would contribute a fresh perspective to the social and economic development studies in Lao PDR.

1.3 Scope of Study

As the objectives are to examine the circumstances of inequality and to find the causes of rising inequality in Lao PDR. The first objective of this study would focus only on the evolution of inequality in Laos through consumption expenditure data and investigate some causal relationship between inequality and social-economic developments since the economic 1986 reform. As for the second objective, it concentrates on finding the determinants of the rising inequality by examining the potential social and economic factors in regard to economic development and internationalization (economic liberalization). Moreover, in terms of time scope, the data concerning the topic of household consumption and expenditure and other relevant factors are mostly available only from 2002 until 2013, which are crucial components of this study. Therefore, it is decided that the study will only cover this time scope.

1.4 Structure of the Thesis

The matters deliberated above will deeply be explored in the next five chapters of this thesis. Chapter 2 is a literature review on the topic regarding determinants of income inequality by focusing on the broader context of understanding the relationship between inequality and social & economic factors. Chapter 3 presents the data source and methodology used in this study. Chapter 4 provides an overview of inequality circumstance and social and economic development in Lao PDR since the economic reform in 1986, in particular with an aim to give a clear picture of inequality circumstance of Lao PDR. Chapter 5 addresses the result and discussion of the study. Finally, chapter 6 sums up the finding of this study and discusses the policy recommendations and recommendation for future study.



CHAPTER 2

REVIEW OF LITERATURE

This section is devoted to reviewing the existing literature in the area of the determinants of inequality and the recent literature conducted in the context of Lao PDR. The chapter is divided into three main sections. Firstly, it begins with the theoretical framework which discusses the theory on the determinants of income inequality in a broader sense. Secondly, the following sections reviews the existing works conducted in the context of inequality in Lao PDR. This section especially aims to find the literature gap leading to the topic of the following section. In the final part, it addresses the literature gap which would become a core of this research.

2.1 Determinants of Inequality

To date, there is immense literature on determinants of income inequality. Most of the studies applied regression technique on cross-countries or within country panel data by regressing inequality indices against various social and economic variables. The starting point of the study regarding the relationship between inequality and economic development could be traced back to the contribution of Simon Kuznets in 1955, whom proposed a well-known hypothesis known as a “Kuznets Hypothesis” or “Kuznets Curve” (ElGindi, 2014). The hypothesis shows the inverted-U relationship between inequality and economic growth in these developed countries: the United State, England, and Germany. In a typical word, inequality would increase in the early stage of economic growth, then falls in the subsequent time (Kuznets, 1955). The primary explanations for this hypothesis are reliant on labor migration (the shifting of employment structure), urbanization, and demographic transition.

Due to the development of quality of data and technology, a cross-country analysis on the relationship between development and inequality has increased since the 1980s (ElGindi, 2014). Likewise, more factors have also been

attached to this area of study. Notably, influenced by Kuznets's explanation, Nielsen (1994) constructed an internal development model to investigate the relationship between growth and inequality by including three core variables; namely, sector dualism, demographic transition, and spread of education.

Besides this internal development model, globalization, infrastructure development, macroeconomic factors and others have been widely explored as significant determinants of inequality. For instance, Zhou, Biswas, Bowles, and Saunders (2011) as well as Jaumotte, Lall, and Papageorgiou (2013) and ElGindi (2014) claimed globalization as a driver of inequality in particular through international trade, financial and investment liberalization, and technology development. Also, Sarel (1997), Deyshappriya (2017) examined the relationship between inequality and macroeconomic factors, including inflation rate, exchange rate, government expenditure, and others. Lastly, Calderón and Chong (2004) and Seneviratne and Sun (2013) investigated the relationship between inequality and infrastructure development through various indicators, namely, energy, road, railway, telecommunication.

The following section would review some of the prevailing empirical studies and theoretical perspectives on the relationship between inequality and each of these selected factors: economic development, globalization, and state-institutional factors. The selection purpose is to make the review more precise and direct to the study. Moreover, in dealing with the issue of inequality, problem-focus study would be more feasible and realistic approach than discipline-focus, which covers all potential determinants that are essential (ElGindi, 2014).

2.1.1 Internal Development Model

Economic Growth and Sector Dualism: Kuznets framework on the inverted U-curve relationship of inequality and development is driven through labor migrations due to the urbanization and industrialization, which the relative wage between rural-urban, and sectors are different (Bourguignon & Morrisson, 1998). Nielsen (1994) operationalized the hypothesis by assuming that the different rate of

wage between agriculture sector (low wage) and industrial sector (high wage) caused sector dualism. In the early stage of industrialization, shifting of labor from agricultural to industrial sectors widens the income gap. Subsequently, the gap gets narrower in the next stage of industrialization. Moreover, he adopted an indicator for measuring sector dualism through a share of the agricultural labor force in all employment, and a share of agriculture sector in GDP and the study confirmed the Kuznets' hypothesis.

Demographic Transition: Kuznets (1965) has forecasted the relationship between growth and population growth as a curvilinear. The falling of death rate and high birth rate during the early stage of development lead to high rate of natural growth rate. Afterward, the birth rate would start to decline whereas economic growth still occurs (ElGindi, 2014). Regarding the relationship between inequality and population growth, Willismondon (1991) provided two explanations to support that the population growth has a positive impact on inequality through increasing labor supply. Firstly, if there are more young workforces, which usually are at the bottom of income distribution; relatively, there would be more low-income people. Secondly, the supply of such labor could also push the relative wage of unskilled workers down (Nielsen, 1994). The relationship between these two variables is entirely conclusive among scholars, Nielsen (1994) Raychaudhuri and De (2010), and ElGindi (2014) all found that higher rate of population growth is associated with higher inequality.

Education: John Stuart Mill (1848) has suggested the concept of education spread which predicted that when more people have an access to school, it would result in lowering income inequality (cited in Elgidi, 2014). The explanation was based on the linkages among inequality, human capital accumulation, and earning. In basic economic explanation, based on supply-demand mechanism, an increase in the supply of skilled labor force, due to the spread of education, would lead to the competition in the high-income market. As a result, the skill premium would be diminished, and the income gap between skill and the unskilled market would be minimized (Nielsen, 1994). This effect was called a 'compression effect'.

However, there is also a composition effect, which the education spread could also potentially lead to new wage polarization between skill and unskilled labors in the early stage of the development. This concept claims that the relationship is similar to Kuznets's inverted-U curve (Gregorio & Lee, 2002). Plenty of literature supports the inverted-U relationship. For instance, Gregorio and Lee (2002), K. H. Park (2017) similarly examined the relationship between inequality and education. On the other hand, more education attainment and equality in access to education lead to an equal distribution of income in the long run. However, it is commonly accepted that investment in human capital and offering equal access to education are core factors reducing inequality in East Asia countries (ElGindi, 2014). Then, whether an inverted-U curve or linear relationship, education may always be an answer for inclusive growth target.

2.1.2 Globalization (FDI and International Trade)

The word '*Globalization is used in various ways, but in this context, globalization is defined as the opening for all frontiers to the free flow of goods and capital (not labor)*' (ElGindi, 2014). Some schools describe globalization as a declining of public regulation and the rise of the powerful transnational corporation (ibid). Basically, many scholars, from both mainstream and left-wing economists, the globalization has undermined the power of government in intervening its domestic economy. Especially, the redistribution of wealth, as a traditional role of government, has been constrained, which lead to more disparity in society (Brune & Garrett, 2005). This section would cover only two dimensions of globalization, such as Foreign Direct Investment and International Trade.

Foreign Direct Investment: the relationship between FDI and inequality are inconclusive. Both of negative and positive effect of FDI on inequality have been proposed. Regarding theoretical perspectives, Kentor (2001) provided four channels whereby FDI would cause inequality. First of all, FDI creates or restores sector employing specific group with a specific skill. This employee group relatively earns more salary than other groups in the society, particularly in the public sector and other former sectors. Secondly, the profit from this kind of investment is sent

back to the host economy rather than reinvested in the recipient countries. Thirdly, foreign capital penetration causes a concentration of land ownership. Lastly, in the era of racing to the bottom in order to attract FDI, the state established a market environment to enhance the business climate for the investment by reducing wage, ignoring safeguard measure, providing tax exemption, and other privileges. These policies affect the income of labor and hamper inequality.

Likewise, Jensen and Rosas (2007) suggested two mechanisms to explain the influence of FDI on inequality. On the one hand, FDI improves income distribution in recipient countries through reducing the gap between capital rent and wage rent because the inflow of FDI with capital possibly diminished capital return in the domestic market, and higher demand for labor would push the wage up. On the other hand, FDI leads to more inequality because it tends to pay a premium wage for a skilled worker, which endangers the gap between unskilled and skilled workers. This study conducted an empirical inquiry on the causal relationship between FDI inflow and inequality in 32 states of Mexico from 1990 to 2000. The finding of this study shows that FDI inflow help improves income distributions.

Figini and Gorg (2006) provided the analysis of the link between FDI and income inequality in a pooled cross-sectional analysis of 100 countries (1980 and 2002). In developing countries, it was found that the relationship between inward FDI and inequality are not linear. There are two dissimilar stages of a relationship. At first, inward FDI trends to increase the wage inequality. Then, the effect diminishes with more FDI. The explanation of this result relied on the model of a general-purpose technology (GPT) which proposed two stages of development which are similar to Kuznets's hypotheses. Nevertheless, the employment of skilled labor in two stages of development is a key driver of inequality. There are three evaluations of the gap between skilled and unskilled labor. In the first stage of development, the demand for skill was not pronounced because the economy is adjusting to new technology. Then, the gap widens in the second stage because of an increase in the demand for skilled labor, which subsequently affected the wage of skilled labor. Lastly, the gap narrows due to the increase in skilled labor.

Moreover, there are some works suggested that there are spatial effects of different sectors determined by two characteristics of an investment, namely labor-intensive and capital-intensive sectors. Based on the assumption that labor-intensive FDI increases the demand for an unskilled worker in the recipient market, which pushes the overall wage of this class. In contrast to labor intensive, capital intensive sectors seem to increase inequality due to the return to capital and skilled workers is higher (Suanes, 2016).

Beginning with the first sector, FDI in this manufacturing sector, regarded as a labor-intensive sector, normally improves income distribution because more population, as unskilled labor, could participate in the production activities. Generally, the foreign firms are attempting to reduce their production cost, and in need of unskilled labor. This is consistent with the plentiful supply of unskilled labor force in recipient countries. Secondly, it is quite hard to consider service sector as capital or labor intensive. Thus, its effect on inequality is unclear regarding this context. Lastly, primary sector (natural resource sector – extractive industry) is the most prominent investment that hampers inequality. Basically, only the top of the distribution enjoys much of the rent from this sector. Not everyone could have ownership of the natural resources and the ownership is mainly concentrated among few hands (the riches) (Suanes, 2016). However, Suanes (2016) did not find a statistically significant effect of the primary sector on income inequality from the panel dataset of 12 economies in Latin America (1980-2009). Instead, FDI in manufacturing and services sectors were found to positively affect inequality.

To supplement the theoretical explanation of the causal relationship between FDI on primary sector and inequality, Leamer, Maul, Rodriguez, and Schott (1998) proposed that natural resource was a key factor hindering inequality in Latin America while both of capital and labor-intensive manufacturing sectors improve the income distribution. In addition, they proposed 4 theoretical explanations for the causal relationship. Firstly, natural resource adversely affects the development of manufacturing sectors. Secondly, manufacturing sector development in resource-rich countries trend to leapfrog over the labor intensive

due to the side effect from natural resource sectors makes them less competitive compared to labor abundant countries. The last two were in the human capital as a key to the leap forward, impeded by coordination problems and capital market imperfections.

International Trade: In the context of international trade and income inequality, Stolper-Samuelson theorem lays out an explanation of the effect of trade openness and income inequality among countries by using two countries two-frameworks. Opening to trade will be more beneficial to income distribution in developing countries with an assumption that they are abundant in unskilled labors. The wage of unskilled labors in these countries will increase so that the income inequality will decline. Also, the compensation of skilled intensive product from developed countries will compensate the lack of skilled worker in developing countries. This compensation leads to decline in the price of such skilled intensive product, then consumers in developing countries correspondingly enjoy consuming cheaper products. However, opening up to the trade of developed countries possibly hamper its income inequality because of the inflows of unskilled intensive goods from developing countries. The unskilled worker will earn less, and it leads to income inequality in developed countries (Harjes, 2007).

Nevertheless, this theorem has inconclusively been verified in the academic world because of these main challenges: (1) two countries two frameworks is not suited in a real situation because in the real world, one country does not trade with only single country, but it also trades with other nations. Developing countries do not only export unskilled intensive product, but they also import from developed and other developing countries. (2) Unskilled intensive goods of the developed can be a skilled intensive-goods of the developing countries. (3) Intermediate goods are imported from poor to produce a skilled intensive goods and export back to poor. These are an extension which can be used as an alternative framework to examine the income inequality in the context of globalization (Harjes, 2007).

Zhu and Trefler (2005) found that international trade increased wage inequality in both newly developed countries and developing countries

through the technological catch up of the developing countries. Fundamentally, because the south does not only specialize in unskilled intensive product, the South's most skilled intensive good has taken more shares of the trade. This growing share is also positively associated with the wage. Meanwhile, the most skilled intensive good of the south is equivalent to the least skilled intensive goods of the north. Because the moving out of the least skilled intensive product of the north and growing of the most skilled intensive of the south has translated to the demand for skills in all countries, then inequality has risen.

2.1.3 State – Institutional Factors

As it has been prevalently agreed among scholars that the market is not efficient enough to deliver a social pie to each individual in an equal way. Then, government's hand is needed, especially to redistribute the wealth. This fact is found in the developed countries since a share of spending to GDP is quite high. However, in case of developing countries, the hand on distribution could be limited due to the financial capacity (Tanzi, 1998). In general, the redistributive role of the government could be seen in many forms, such as taxation, government spending, macroeconomic surveillance, rent and price control, and other measures that have effects on income distribution. Commonly, taxing and spending are most mention in the literature (Tanzi, 1998). This section reviews some existing literature by only focusing on the relationship between government spending, public services, and inequality.

Government Expenditure: although an inverted-U curve relationship between inequality and economic growth has been broadly tested, there are also existing doubts over the efficiency of growth in reducing inequality. It is settled among scholars that without government's redistributive measures, such as tax, social spending, social safeguard, and other measures, economic development could fail to achieve any poverty reduction and equal distribution of income. In contrast to classical economics augment over intervention and efficiency, the redistributive policy could foster growth (Martinez-Vazquez, Moreno-Dodson, & Vulovic, 2012). However, the relationship between public spending and inequality remain vague.

E. Anderson, Jalles D'Orey, Duvendack, and Esposito (2016) conducted a meta-analysis of 84 separate studies containing over 900 estimates in the theme of government spending – inequality relationship. Most studies suggested that government spending (on all sectors) is positively associated with inequality. In contrast, spending in social sectors has a negative impact on inequality. Interestingly, studies that used Decile ratio found a more negative relationship than Gini coefficient. On the first hand, government expenditure on education and health improves income distribution because the spending leads to more equal distribution of human capital. However, the effect is still relearned on the target and effectiveness of the spending (E. Anderson et al., 2016). On the other hand, Ferreira (2016) reviews some mechanisms proposed by a various meta-analysis on the topic that public spending positively affects inequality. Firstly, in developing countries, middle-income class enjoys most of the government transfer spending. Secondly, subsidies also took a lot share of government spending. Thirdly, public expenditure on education and health benefited middle class in an urban area than other groups. Lastly, the financial source of spending is mostly from taxes and monetary expansion, causing inflations which the low-income group gets directly affected.

Infrastructure Development: most of the literature on this topic has been supporting the argument of infrastructure development leading to a reduction in inequality. In conventional explanation, the infrastructure development enables people in the impoverished region to have an equal opportunity to engage in various productive activities by linking them to the broader economic network (Bajar & Rajeev, 2016). For instance, Fan, Zhang, and Zhang (2002) examined the relationship between various types of government expenditure, poverty, and inequality by evaluating provincial data from 1970 to 1997. It is found that the infrastructure development leads to rising of growth rates and reducing of poverty and regional inequality in China because the expansion of infrastructure created new opportunities for non-agricultural employment in rural regions. As opposed to the trend, there is also a positive relationship found by scholars. An increase in an access to necessary infrastructures, such as road, electricity may lead to an unequal

distribution. Bajar and Rajeev (2016) examined infrastructure and income distribution relationship by using a panel dataset of major Indian states. The study found that more access to road and electricity are positively associated with consumption-based inequality. According to his explanation, the people in society enjoy the infrastructure services at the different degree of benefit. For instance, the poor tend to less use such access to promote their productive activities than the rich.

2.2 List Reviews

Rigg (2005) has initiated a work in the area of income distribution in Laos with the main aim to evaluate the correlation between economic transition and inequality. He provided two key findings, suggesting that the disparity in Laos was caused by the market-induced inequality and nonmarket-induced inequality. For market-induced social stratification, he asserted that marketization has left some parts of people who are far away from market integration and development. In this case, land allocation and occupation in the initial stage of the transition has played a significant effect on inequality because when the market was liberalized, the value of property, in terms of monetary mean; has climbed up. Then, this has an effect on the accessibility of people in subsequent time. This study is a crucial point to look at marketization and inequality in Laos. On the other hand, he explained the case of nonmarket-induced inequality by raising the government development project which focuses on the specific area due to the lack of capacity to implement over the country.

Epprecht, Minot, Dewina, Messerli, and Heinimann (2008) conducted a study on the inequality problem in Lao PDR by utilizing a “small area estimation” to estimate various measures of poverty and inequality for the provinces, districts, and villages in Laos. This study took multiple factors in certain geographic area to explain characteristics of poverty and inequality in Lao PDR, such as road accessibility, temperature variability, soil suitability, annual rainfall, and so forth. Two sources of data employed in this method were from the 2002-2003 Household Consumption

and Expenditure Survey and the 2005 Population and Housing Census. This study has found that the inequality and poverty in Laos are associated with the difference in geographical condition. In terms of inequality, it was found that the high level of inequality is in the urban area and some part of the northern upland area. The expenditure disparity in the southern region and the central highland are relatively lower. This study also addresses that the key explanatory variables as market access and agriculture climate are so keen to explain the poverty and inequality in Laos. Hence, the group resides in the disadvantaged area gets stuck in poverty and it hampers inequality. Furthermore, market access is not a key determinant of inequality within regions. This study also hinted that to improve the livelihood of this group, regional migration should not be restricted.

UNDP (2013) emphasized the adverse impact of inequality on human development in Lao PDR. They reported that, general situation of human development shows a significant progress, particularly in life expectancy, year of schooling, and Gross National Income (GNI). Besides, there is a signal of potential growth in the long term. However, the worsening of disparity in wealth distribution has a negative impact on the Human Development Index of Lao PDR by 25%. This report also warns that inequality could affect the Laotian social and economic development in the future.

In an attempt to provide an alternative perspective on inequality particularly on the welfare of low-income class society, Wagstaff and Lindelow (2010) observed a broad range of different types of shock regarding its distribution between the poor and the better off, idiosyncrasy, costs, coping responses, and the degree to which households can keep smooth consumption following the shocks. Two primary objectives of this work are to assess the impact of various shock phenomenon and the health impact because of health shock and the loss of an asset which is spent to recover. Due to the lack of panel data; then, the traditional consumption-smoothing approach is not able to be employed in this work. This study applies the descriptive compilation method with data collected in three provinces (Vientiane Capital, Phongsaly, and Attapeu) in 2008. The result of this study claimed that health and

related shocks are predominant and it is concentrated among the poor group. The main effect this kind of shock is the loss in asset and the declining in food-related expenditure because the solutions commonly used to deal with such multi-shocks are to sell an asset, to borrow, to ask help from another household. In addition, they also emphasized that government or nongovernment's provided supports are so limited.

OEDC (2013) took a look at the pattern of economic reform in Cambodia, Laos, Myanmar, and Vietnam and its impact on the economic growth and prosperity. Moreover, poverty eradication and inequality are also affected by this reform. However, this sub-region has differently experienced the income inequality. Among these countries, only Laos has experienced a rise in the inequality rate in recent years despite having a high rate of economic growth. This study attempts to explain this widening of inequality with the Kuznets's hypothesis and emphasize that only economic growth cannot be an only answer for economic development in CLMV countries, fair distribution to all should equally be important.

A. S. Vanthana Nolintha and Sone (2014) contributed an outstanding assessment of wealth distribution in Lao PDR. They employed the detailed evaluation in this study by looking at the linkage between economic development and economic inequality which shows the improvement of livelihood among nationals. The result of this study is made in a form of the composite inclusive growth index. The scores of Laos in overall is 5.6 which is quite moderate because the individual performance of each index is mixed with both income and non-income inclusiveness. Furthermore, this study also emphasizes that inequality has fallen during the early era post-1997 Asian Financial Crisis and increased again thereafter. Uneven development between rural-urban, structural change is associated with income disparity in Laos.

NOLINTHA (2015) examined the relationship between Foreign Direct Investment (FDI) and income inequality in Laos by using a simple regression model with the cross-district and provincial data on GINI coefficient and related indices of household consumption expenditure, household possession of the asset and durable

goods, value of government investment, and committed value of FDI. This study utilized the primary source of data from National Statistical Bureau and the Ministry of Planning and Investment of Lao PDR. The key variables are observed during 2002 to 2008. The result of this study showed that the inflow of FDI has a positive relationship with both expenditure and asset inequality in Laos. A 1% increase in the committed value of FDI induces 0.05 increase in GINI coefficient. Moreover, he also found a positive relationship between inequality and development, which the development was represented by mean household expenditure on consumption.

2.3 Literature Gap

As discussed above, many works have already been done in the area of inequality in Laos. Almost every work employs data from Lao Household Consumption and Expenditure Survey. Most of these works were mostly based on empirical analysis. Importantly, in terms of identifying the determinants of income disparity in Laos in the recent literature, the time frame they used is quite short, and they focus more on single determinant rather than multiple determinants by using the more sophisticated approach in both quantitative and qualitative methods. This work aims to investigate the determinants of income inequality in multiple dimensions particularly in three factors (internal development model, internationalization, and state-institution factors) as discussed in a theoretical framework. Moreover, this study will try to apply more timeframes.

CHAPTER 3

RESEARCH METHODOLOGY

The purpose of this chapter is to introduce the methodologies applied in this study, in particular to analyze the expenditure inequality in Lao PDR since the economic reform as per explained in the objective section. In this study, a qualitative technique of analysis is used to investigate the expenditure inequality circumstance. Moreover, in order to examine the determinants of expenditure inequality, the author decided to employ a quantitative method. Thus, to look at the detail of methodologies, the following subsections would go over the sources of data and methods of analysis.

3.1 Source of Data

In order to answer the research questions, this study utilized different kinds of data from various sources. First of all, to investigate the expenditure inequality, this research used the secondary data which collected from the existing studies such as publications of the World Bank, Asian Development Bank (ADB), academic works and other research papers. This section will utilize descriptive indicators, namely, Gini Coefficient, the share of expenditure per social quintiles, real expenditure of each quintile, and other macroeconomic indicators. Importantly, these data are available in both national and provincial units from 1993 to 2013.

Secondly, to investigate the causes of inequality in Laos, the author chooses the characteristics of regions in Laos to explain the income inequality at the national level. This study utilized longitudinal data for 17 provinces in Lao PDR namely *Attapue, Bokeo, Bolikhamxai Champasak, Huaphan, Khammuan Luang Namtha, Luangphabang, Oudomxai, Phongsali, Salavan, Savannakhet, Vientiane Prefecture, Vientiane Capital, Vientiane Province, Xaiyabuli, Sekong and Xiangkhuang*) for three timeframes (2003, 2008, 2013). Even though the timeframe is quite short,

cross-sectional data from 17 provinces would enhance the credibility of the result of this study.

In terms of the source of data, this study applies two kinds of data. First, secondary data is a leading source because the model of analysis of this study does not require any primary data. These data were collected from government organization, inter-government organization, books, research papers, and journals. However, because some data are incomplete, it has to be calculated in this study by using the primary data from National Statistical Bureau of Laos PDR and those would be discussed in detail in the definition of variables.

3.2 Data Analysis

3.2.1 Examining the Equality Circumstance in Lao PDR

To examine the expenditure inequality phenomenon in Laos based on the secondary data, the basic descriptive method was utilized. Basically, this section would investigate the recent trend of inequality since 1993 by examining changes happening in Gini coefficient and the transformation of the expenditure structure by each social group particularly by comparing the change in the share of income of each quintile. Moreover, expenditure inequality would be examined by comparing its trend to other social and economic indicators such as economic growth, openness, social development, and so forth; with an aim to picture some association of these indicators and the rising inequality.

3.2.2 Analyzing the Determinants of Expenditure Inequality

Based on the panel data available, this study utilizes inferential statistics to identify the determinants of the rising inequality. According to H. M. Park (2011), the panel data model is more efficient in terms of variability than cross-sectional or time series data solely. Also, “*panel data give more informative data, more variability, less collinearity among variables, more degree of freedom and more efficiency*” (cited in Park, 2011). Thus, to take panel data to analysis with the appropriate model would give a more probable result for this study. These following

equations will introduce the models in a form of Pooled OLS regression, which the dependent variable in all models is Gini Index while explanatory variables are a set of potential factors.

$$Gini\ Index_{it} = \beta_0 + \beta_1 Income_{it} + \varepsilon_{it} \quad (...1)$$

$$Gini\ Index_{it} = \beta_0 + \beta_1 LnIncome_{it} + \beta_2 (LnIncome_{it})^2 + \varepsilon_{it} \quad (...2)$$

$$Gini\ Index_{it} = \beta_0 + \beta_1 Agri_{it} + \beta_2 POPG_{it} + \beta_3 EDU_{it} + \varepsilon_{it} \quad (...3)$$

$$Gini\ Index_{it} = \beta_0 + \beta_1 FDI_{it} + \varepsilon_{it} \quad (...4)$$

$$Gini\ Index_{it} = \beta_0 + \beta_1 GOVEXP_{it} + \beta_2 Electr_{it} + \beta_3 Road_{it} + \varepsilon_{it} \quad (...5)$$

Models as shown above were speculated based on the recent works, which is summarized in the conceptual framework as shown in Figure 1.1. The economic development and economic openness are key factors that can be regarded as the outcome of the economic reform and it is supposed to have a positive relationship with inequality. Meanwhile, the redistributive role of government, represented by infrastructure development and its spending on health and education, is supposed to reduce inequality. Moreover, the summary of data sources and an expected sign of the result is provided in the table 3.1 & 3.2 respectively.

Beginning with the first equations, this model aims to investigate the relationship between income level and inequality by regressing Gini index against Mean Income per capita. As many studies in this area used GDP per capita as such utilized by (Elgidi (2014), this study used the direct income of population from LECS data instead. As described in Table 3.1, the unit of income value is in a million Kip and it was deflated to the 2002 price. Bases on Kuznets's hypothesis, the relationship should be positive. From the existing literature, Pooled OLS estimation on the cross-national data over the relationship between inequality and income growth seems to provide a positive relationship (De Dominicis, Florax, & De Groot, 2008). Moreover, this study also attempted to capture the Kuznets' Curve from this data set through the second equation which the dependent variables were

transformed from income. The first is log value and the second is square of log value. If the Kuznets's curve exists, these two variables have to be significant.

The third equation was speculated based on internal development model of Nielson (1994), the expansionary variables consist of agricultural employment, year of schooling, and the natural rate of population growth, representing sector dualism, education spread, and demographic transition respectively. In his work, negative relationships are found with educational attainment and sector dualism while population growth had a positive relationship. In this study, if the result of sector dualism is in line with his work, the sign should be opposed to this because the variable that is in use is a percentage of agriculture activities to all economic activities instead of a share of non-agriculture sectors. Ordinarily, sector dualism is an indicator of industrialization, especially the share of the sector to the economy or the share of employment of this sector to all employment. Then, declining of agriculture sector is rising equivalent to others.

In terms of population growth and inequality relationship, it should establish a positive sign, the same as his result. Lastly, this study used a year of schooling as the variable to represent the concept of education spread instead of attainment rate. Because the data used in this study capture just few time periods, the year of schooling, as an indicator for education expansion should be more suitable than attainment rate. The average year of schooling could also picture the level of human development, for this reason, the more year of schooling is, the higher level of education in society is. This study predicts that the result will be consistent with his work, which education spread leads to less inequality. Moreover, all of the data for independent variables in this model were from the official publication of Lao Statistics Bureau.

The fourth equation aims to investigate the relationship between inequality and the internationalization of Lao PDR since the reform, which the internationalization was represented by the committed value of inward FDI as a proxy FDI inflow because the real value of FDI inflow is not available at the provincial level. This variable was an average FDI inflow of 5 years from 1997 to 2002,

2003-2007, and 2008-2012. The value is in a million US dollar. Hypothetically, if the economic reform leads to inequality, internationalization, as one of the key factors; should be positively and significantly related to inequality.

The final model is an effort to investigate the impact of the state-institutional factors on inequality. The first factor is the government spending on health and education per capita. The data for this variable was collected from official LA Gazette published by Ministry of Finance of Lao PDR. The value is in a million Lao Kip and was deflated to 2002 price. Moreover, this model also includes infrastructure development factor, as the state provided services by examining two variables, namely, electricity and road access. These variables were represented by a percentage of household that has an access to electricity to all household and a percentage of household, that has an access to the road in a dry season, to all household, respectively. The mentioned variables were based on data from official publications of Statistic Bureau.

Table 3.1 Variables Definitions and Source of Data

Variable Name	Variable Used	Unit & Var in Model	Data Sources
Inequality	GINI Index	Percent of GINI Index	GINI index: LCES 3/4/5 Summary, Lao Statistics Bureau (LSB)
Income	Mean Income per capita	Kip (deflated to 2002 prices), (Income)	Computed from LCES3/4/5 raw, LSB
Sector Dualism	Percent of Activity in Agriculture Sector to all economic activities of Populate aged above 10	Percent, (Agri)	LCES3/4/5 Summary, LSB

Table 3.1 Variables definitions and source of data (cont.)

Variable Name	Variable Used	Unit & Var in Model	Data Sources
Population Growth	Natural Growth Rate of Population	Percent, (POPG)	Statistic Yearbook, LSB
Education Spread	Mean Years of Schooling	Year, (EDU)	LCES3/4/5 Summary
Foreign Direct Investment	Committed Value FDI	Million US dollar (FDI)	Unofficial Report of Ministry of Planning and Investment of Lao PDR
Government Expenditure	Government expenditure on EDU and Health per capita	Million Kip (deflated to 2002 prices), (GOVEXP)	Official Gazette, Implementation of 2002-03, 2007/08, 2012/13 Fiscal Years
Infrastructure Development	Percent of Household Has Access to Road in dry season and Electricity	Percent, (ROAD and Electricity)	LCES3/4/5 Summary, LSB
Province, Time	i, t		17 provinces x 3 periods
B0, E	Intercept, an error term		

Table 3.2 Expected result of the analysis

Variable Name	Expected Sign	Recent Works
Economic Growth	+	(ElGindi, 2014; Kuznets, 1955; Nielsen, 1994)
Sector Dualism	-	(ElGindi, 2014; Kuznets, 1955; Nielsen, 1994)
Population Growth	+	(ElGindi, 2014; Kuznets, 1955; Nielsen, 1994)
Year of Schooling	-	(ElGindi, 2014; Kuznets, 1955; Nielsen, 1994)
Foreign Direct Investment	+	(Cornia & Cornia, 2004; Kentor, 2001; NOLINTHA, 2015)
Government Expenditure on Education and Health Sectors	-	(E. Anderson et al., 2016; ElGindi, 2014)
Infrastructure Development (Both Road and Electricity)	-	(Fan et al., 2002)

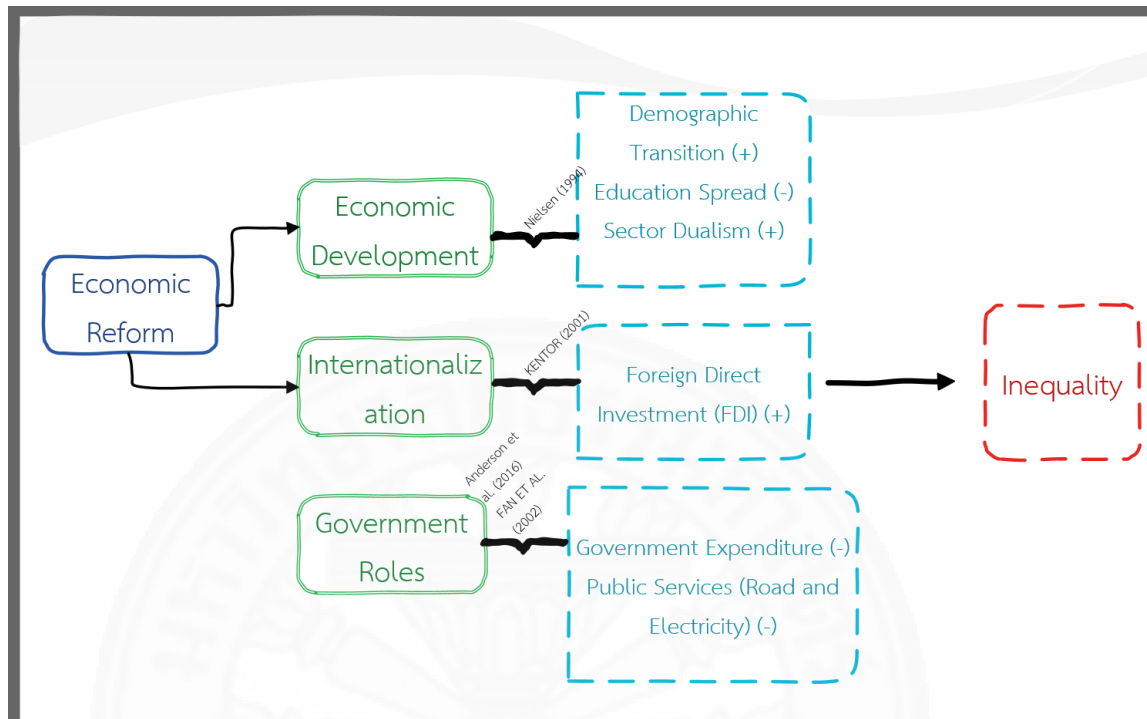


Figure 3.1 Conceptual Framework of the Study

3.3 Limitations of the Study

There are some limitations in this study. As this study used a quantitative approach, a small number of observations would have limits on the reliability of the result, which there are just 51 number of observations in the study. This limitation was mainly caused by the unavailability of relevant data and its necessity for the study. Moreover, there are many variables represented by proxy rather than a real indicator. For instance, the indicator of foreign direct investment was in committed value, and the real investment would not totally be made as committed value. Similarly, the variable for sector dualism was also a proxy value. A share of activity in agriculture to all economic activities is less clear compared to a real composition by occupation and aggregate output of the economy (GDP).

CHAPTER 4

AN INITIAL INTRODUCTION TO INEQUALITY CIRCUMSTANCE AND SOCIAL ECONOMIC PROFILE OF LAO PDR

4.1 A Short Introduction to Laos in General and to Laotian Economy

Laos is a tiny landlocked country in the center of the Indochina peninsula with an area of 236,800 square kilometers. Besides being a landlocked country, Laos is mountainous country and widely covered by unspoilt tropical forest. Not more than 5% of the land is suitable for subsistence agriculture meanwhile the economy and people livelihood depends heavily on the agriculture sector, indicating by that 80% of all employment to the economy were contributed by this sector. Moreover, this geographic circumstance also causes some constraints to Laotian economic development, especially through the transportation and physical infrastructure development (BBC, 2015). However, because Laos is located in the center of major countries by sharing borders with five neighboring countries namely China, Cambodia, Vietnam, Thailand, and Myanmar. This strategic location is one of the key potentials for development. Likewise, another potential is that Laos is also prosperously endowed by various natural resources such as water (hydropower), minerals, and forests.

Geographically, Laos is divided into three regions as northern, central and southern regions and in terms of administrative unit, there are 17 provinces and one municipal (Vientiane), a new province was just officially established in 2013. According to the 2015 Lao Housing and Population Census, total population of Laos is 6,492,228 and population density is 27 persons per square kilometer. Major concentration of population is in Vientiane municipal, Savannakhet, and Champasak Provinces which has population density at 209, 45, and 45 km².p respectively. Following sections discuss the social, economic, and political evolution of Laos.

4.1.1 Lao State in Early Time

In the past, Laos as an independent nation state just began in 1953 after de facto independence from colonialism as per guaranteed in The Geneva Agreement of 1954. Laos was one of French Indochina colony as a quasi-nation-state since the 1890s and was treated as the periphery to Vietnam's sphere of influence due to many potentials for exploitation. Moreover, Laos used to be shortly occupied by Japan in 1945 in the Pacific war. During this time, the development was only clustered among Francophile elite particularly in terms of accessibility to physical infrastructure and education. After the Kingdom of Laos became independent in 1953, Laos was ruled by the constitutional monarchy (Bird & Hill, 2010).

Even being independent from colonialism, internal conflicts, political unrests, and interference from external factors kept persisting. Insightfully, Laos became battleground of the proxy war in Asia Pacific frontier during the Cold War period. Laos has heavily affected during CIA secret operations in Indochina (The US secret war – domestically called as neo-colonialism) with the purpose to contain the expansion of communism in the region. Because of this operation, Laos was severely bombed throughout this terrible period. Having said that almost two million tons of ordinances have been thrown into Laos which one-third of this ordinance has not been exploded or unexploded ordinances (UXOs) and this has become the terrific legacy to the development and people livelihood in the subsequent time (BBC, 2016). Because of the long continuous war and its heavy casualties and damage, the country, as well as people livelihood, has stuck in the undeveloped trap.

The Lao economy was driven by the foreign aid in particular from the US and Royal Lao government budget was reliant on donation. Unfortunately, a large amount of financial assistance come from foreign aid per capita in Vientiane controlled zone which was the highest among the developing world. But, this has not much impact on the economy and the livelihood of the Lao people, it was principally used to support war refugees and to maintain the luxury standard of living of foreign community and political elites which is not much different to the situation under French power. Meanwhile, the area under “Guerrilla, Communist movement,

or Pathed Laos” was supported by the communist world in the same way as the Vientiane controlled zone, but this area was severely suppressed in various means in particular bombing which causes disastrous damage to the prosperous agriculture land. Thus, the people livelihood in this area would be worse than controlled zone during this time (St John, 2006a).

4.1.2 Laos during Planned System and the Reform towards Market

Oriented

In 1975, after many years of conflict and political unrests, Lao PDR has been established by Lao People’s Revolutionary Party (LPRP) with a victory over the former ruler. Having said, this change has led to the end of six centuries old monarchy. Initially, Lao PDR political and economic system was based on the former Soviet model (Marxist-Leninist political system), as having seen in many communist countries, single-party political system and planned economic system are key common of this system with an ambition to develop national economy gradually toward socialism without achieving the capitalist development path (Rehbein, 2005). Toward socialism, many economic reforms were done in this period.

St John (2006b) summarized the initial economic development policy of Lao PDR into three main elements. To reduce the private sector in the economy (particularly in sectors which are in favor of the state sector) is the first core program of the communist government and this program can be seen in some initiatives, such as nationalizing the existing private assets and imposing tighter regulation to petty traders. The second element is to enlarge the public sector covering banking, transportation, internal and external trade, and so forth. Third, the Lao government planned to emphasize the development of the agriculture sector in particular to promote irrigated rice production and multiple cropping systems, and to rationalize the use of labor. Besides, in industrial policy, the government intended to maintain the existing industry and to encourage agro-industry, mining and hydropower sectors. Moreover, in terms of international trade, the shift in trading from particularly with Thailand to that of Vietnam was also targeted by the program.

In the early time after formation of Lao PDR, the ruler attempted to collectivize the agriculture sector, but the result was not satisfied and it had faded

out in the late 1970s, the village-based co-operative was an alternative of such plan which has common feature as cooperative such as the tight relationship with the government in order to access to the state subsidized resources (subsidy to factor of production including fertilizer, tractor, pesticide, technical assistance, etc.) and distribution of product (output), but co-operative was based on volunteer principle of peasants and lesser reliance to the state. In 1979, the government claimed that there were around 2800 cooperatives operated by 75% of all peasant family. Rice cultivation alone covered 80% of all cultivating land. The rapid growth of this kind of cooperative brought about a decline in agricultural outputs and increasing peasant resistance. There were some activities done by the opposition to such programs, such as smuggling to Thailand, destruction of agricultural output, emigration and cultivation in remote areas where administrative control was lacking (Bourdet, 2000).

In addition, the distribution network and marketing system, property right, and the agriculture tax system also were reformed. The government built a public trading network in 1976 in order to dominate both domestic and international trade in particular state rice procurement which resulted in two price system such as the administrative fixed price and market price. Basic daily commodities, namely rice, fish sauce, kerosene and so forth were available at the state store. The government also subsidized the living condition of the nationals through this route, then the wage of the civil servant could be kept at low level. In spite of being in inferior condition, the government kept implementing expansionary fiscal policy. Together with a deficit of state-owned enterprises, to increase money supply was a solution resulting upsurge of the inflation rate and devaluation of the currency. Agricultural production was taxed at a high rate of 30% for rice product and of 8% for the non-rice product because the budgetary support from the USA was terminated, the government had just limited options to maintain state apparatus alongside with bilateral assistance from communist allies (St John, 2006b).

The economic performance, under import substitution, accommodative fiscal and monetary policies, and a fixed exchange rate system was quite slow. As it could be seen in the nominal GDP growth from 1982 to 1987, the rates are predominantly high. However, considering the GDP deflator, it also

increased rapidly in conjunction with nominal GDP, meaning that the inflation rates were high and the actual rate of economic growths during this period were low or even negative. According to Table 4.1, the average of inflation rate from 1983 to 1985 is 51.8% and the average growth rate of nominal GDP from 1983 to 1985 is just 38.66%. Moreover, two third of economy was dominated by agriculture sector (Worner, 1989).

Table 4.1 GDP deflator and nominal GDP (In million Kip)

	1982	1983	1984	1985	1986	1987
GDP Deflator	20.2	35.8	48.2	71.4	100	103.8
GDP	9910	18130	25959	41969	62891	66699

Source: (Worner, 1989)

In this period of development, political isolation from the non-communist world was also reflected. Laos only has close political and economic tie with the communist bloc especially Vietnam and the former Soviet Union, and Laos also relied heavily on their donations and supports. The reform process, in subsequent time, also takes a similar process as the Soviet and Vietnam. By 1979, the Lao government faced a serious problem, in particular, to finance the state apparatus due to the withdrawal of Soviet Union, who was the main supporter as they faced their own struggles and has collapsed in the successive time (St John, 2006b).

Moreover, low productivity, weak industry growth, lack of export diversification, protracted macroeconomic imbalances, and the deterioration of people's standard of living were the most problematic issue of the Lao economy in this period. Under the planned economy system, the economic performances could not reach the target set at the early time, and it also experienced the lower rate of economic growth. Thus, due to the slow performance, the policy initiative in the post-1980s has turned to be based on orthodox approach (Worner, 1989). In 1979, the government began to deregulate some sectors particularly State-owned

enterprises, to de-collectivize the agriculture sector. The milestone of transforming toward market system is most well-known as the 1986 New Economic Mechanism (NEM).

To conceptualize this economic transition, Bourdet (2000) has analyzed key features of economic systems by utilizing Lindbeck's common framework (Table 4.2) in comparing economic system and its evaluation over time. He raised the changing in ownership structure as the first key dimension of the transition in particular from collective ownership toward private ownership. As mentioned above, nationalization of private asset and agriculture collectivization program in the pre-era of revolution in 1975 was a step toward the new system. In this period, private ownership was seen in agriculture than service and industry sector. Collectivization of the agriculture sector was attempted at the beginning but the program has a short life as discussed in the beginning of this section. After 1970s, private farmers practically had cultivation right over land which also was inheritable and could be sold whereas the land was officially a national property. Besides, the result of nationalizing service and industry sector lead to the domination of state in the economy. The private ownership, in both sectors, holds only 20% of the countries. The rest belonged to the state in a form of state-owned enterprise which was directly managed by the state in the first place. Due to the inefficiency of the state controls over such sectors, autonomy of state-owned enterprises was granted some level in order to solve the existing issue which started in the early 1980s. By the late 1980s, most of all state enterprises have been turned into autonomous state-owned enterprises. Nevertheless, the result falls behind the expectation, the privatization program was begun instead. Initially, the privatization program covers some 260 state-owned enterprises which only some small enterprises were totally turned to be private, and some enterprises were leased to the private sector.

Table 4.2 The Fundamental Diminutions of Economic System (Comparing two Systems)

	Market	Planned System
1	Decentralization	Centralization
2	Private Ownership	Collective Ownership
3	Market	Administrative processes
4	Incentive (individual and enterprise)	Order
5	Competition (individual and enterprise)	Non-competition
6	Internationalization	Autarky

Source: Yves (2000)

After 1986, private ownership in industrial and services has rapidly increased meanwhile the private ownership kept being predominant in agriculture sectors. However, the privatization program without any legal frameworks to guaranty and to secure property right, and some facilitating factors, namely, a commercial bank, accounting, functioning capital market for example, cause many difficulties at the first place. Importantly, legal frameworks related to property rights were officially introduced the mid-1990 which could be noticed by the adoption of property, inheritance, and contract laws. Moreover, the first constitution of Lao PDR was adopted in 1991, which the private property right was more strengthened and guaranteed officially.

Secondly, he identified allocative mechanism as a second dimension after ownership structure in particular how factors of production are allocated and how productions are distributed in the economy. The market mechanism and administrative co-ordination are key determinants to clarify the pattern of the economic reform. During the planned period, the public distribution network holds a strong role in both input and output of the agriculture sector. As discussed above, the private ownership, after the failure of agriculture collectivization program, was mostly prevailed in the agriculture sector Though farmers, mostly, had to sell their products to the public marketing broad, which the coupon was used instead of banknotes, and they used this coupon to buy good and input from the public distribution network. At the same time, distribution of resources and

distribution of production in industrial and service sectors were farther to the market than the agriculture due to the collective based ownership. Both of input and output were directly mandated in a form of mandatory quota and targeted output.

The economic reform program in 1986 led to massive privatization of state-owned enterprises. Even though not so many enterprises wholly transferred to the private sector, the change in the structure of ownership has undeniably strengthened the market as an allocation mechanism. In the second half of 1980, internal trade in agriculture products was liberalized meanwhile the services and industrial products were overwhelmingly traded through the market. Afterward, the market institution has been concreted by the coming of laws covering insurance and accounting system, enterprise, commercial dispute settlement, bankruptcy and liquidity in the 1990s. Later, the administrative co-ordination deceased rapidly.

For the third dimension, he took the role of the state in allocation of resources in the economy to elucidate the transition. He stated that during the planned system, an order (command), instead of a price incentive, was used in order to improve economic performance as it can be seen in the ownership structure and the distribution and allocation structure. For instance, the material incentive in the agriculture sector was imposed by the government during the planned era, in particular after the falling of agriculture production which prompted the government increased the purchasing price of rice in order to improve production. Moreover, this kind of an incentive could also be seen in the act of the government in lowering the agricultural tax in 1989. Meanwhile, in industrial and service sectors were stricter with the order approach. After the SOEs has turned to be autonomous SOEs and Private, an incentive has become a key tool in place of an order.

The fourth is a degree of competition between individual and firm by giving an explanation that the transition has led the economy from uncompetitive to the more competitive environment. During the planned era, service and industrial sectors were driven by the state in a non-competitive environment. Meanwhile, in the agriculture sector was also quite less competitive in particular the absence of interregional competition can be a clear instance. When the price of agricultural products been liberalized in the 1980s, the supply of agriculture product became

more responsive to change in price. The privatization program of service and industry sectors also has encouraged completion from the private sector although the state keeps maintaining some monopoly right over some sectors of the economy.

Fifthly, he also referred to the internationalization which allows some degree of competition from the outside. Prior to 1987, the competition from foreign firms was restricted. The government imposes strict regulations on international trade including import licensing, quantitative restriction, and tight control over the exchange rate. In 1987-1988, the quantitative control was abolished and the tariff range reduced from 0-200 percent to 0-70 percent. Moreover, the government stated to embrace the foreign investment alongside with privatization of public enterprises as it can be seen in the adoption of Foreign Direct Investment and Joint Venture Law in tandem with others legal instrument enhancing market institution. Finally, a degree of centralization and decentralization of decision making in Laos over the allocation of production factor and distribution of a product have also been reformed. The transformation to the market-oriented economy could be seen in the decentralization of decision making in production, consumption, saving and investment from the center to enterprise and household.

4.1.3 Laos since the 1986 Economic Reform

After the economic reform, the International Monetary Fund, the World Bank, the Asian Development Bank, and bilateral donors supported the adoption of government's medium-term adjustment program. This seems as they quickly jumped in to fill the vacuum left by the communist allies' support. By this time, Laos was seen as a "star pupil" among these international agencies, which is indicated by the close cooperation between them and Lao government. At the same time, it could be seen as a strategic relationship which requires the Lao government to tradeoff the control over the market with financial and technical support (Polonyi, 2003).

Moreover, it is claimed that the open policy created opportunities to develop Lao PDR in many aspects, in particular, to prepare for economic integration with neighbors, region and the world. Laos is endowed with many resources, including water, forestry, mineral resources, trade, and tourism. However,

there is an issue of limited capital, then the external financing would be able to accelerate the economic development of Laos (cited in Polonyi, 2003). This section covers some circumstances of the Laotian social and economic development since the reform, including macroeconomic performance, the structure of the economy, trade and investment, and social development.

4.1.3.1 Economic Performance

After the reform, Lao economy has experienced J-Curve phenomenon as it happened in many former socialist countries which have undergone economic reform toward a market economy. The initial plunge in output and worsening macroeconomic balances did occur in short period and the robust recovery has come after the falling. The economic transform in Lao PDR could be regarded as a successful shift resulting in overall improvement of the economic performance (Bourdet, 2000)

On average, GDP growth during 1990-1995 was around 6 percent, and the inflation rate in the same period was about 15%. Nevertheless, during the Asian Financial Crisis (AFC) in 1997-1998, Laos was facing severe depreciation of the currency (Kip) and hyperinflation. The inflation rate climbed up to the highest rate in 1999, standing at 127%, Local Currency Unit (KIP) devalued against the \$US dollar from 1260 in 1997 to 7100 per 1 \$US in 1999 (Figure 4.1). Moreover, agricultural production and Foreign Direct Investment (FDI) also declined during this period. The AFC 1997 was not the only factor caused economic instability in Laos during this period, but poor macroeconomic management was also one of the contributing factors (Kyophilavong, 2009).

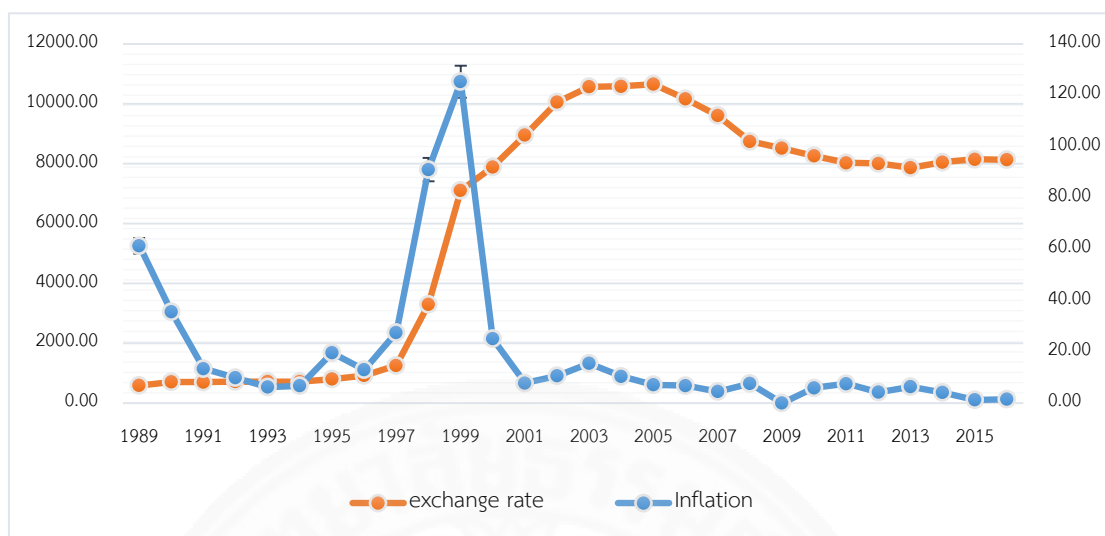


Figure 4.1 Trend of Inflation and Exchange Rate (LCU per 1 \$US)

Source: World Development Indicator – World Bank

After the period of negative growth following the Asian Financial Crisis of 1997, Laos had generally been accomplishing a prominent rate of economic growth with stumpy inflation. The average economic growth was about 7% during 2000-2007 and the inflation has been kept below double digits since 2005; around 4.5 % in 2007. As seen in Figure 4.1 the exchange rate has started to appreciate, 9,670 kip per US\$ in 2007 compared to 10,655 kip per US\$ in 2005. Although achieving satisfied performance, there are still serious macroeconomic problems such as the chronic twin deficits in both government spending and international trade balance. The government heavily relies on the foreign financial source to fill the deficit (Kyophilavong, 2010).

Notably, current account deficit to GDP was 17.8% in 2005 compared to 29.9% in 2012. In particular, the fiscal issue is very serious in Laos. If the budget deficit continues to expand, it will cause an accelerating inflation rate and devaluation of the Kip (Lao currency), which could lead to economic instability as occurred during the Asian financial crisis (ibid). In addition, the growth of Laos is mainly fueled by the FDI inflow and export of natural resources which lead the surge of the real foreign exchange rate and have negative effects on the competitiveness

of non-resource sectors. Natural resource dependency becomes another key issue to Lao economy (Nolintha & Lau, 2015).

4.1.3.2 Structural Change and Employment

Structure of Lao economy has shifted toward higher value-added sector over time. After the milestone in the ability to change the economic orientation, the size of agriculture value added in GDP, which dominated the largest share during planned system, has been getting smaller from 59.27% in 1990-1994 to 19.56% in 2015-2016 (Figure 4.2). In the meantime, industry and service value added in service has gradually increased over time in relative to the agriculture sector. In 2015-2016, service and industry sector took 48.69% and 31.73% of value added in GDP respectively. However, agriculture remains a key source of income to almost 80% of Lao people. Development in this sector remains largely driven by the subsistence-based production despite some positive signal in the expansion of contract farming and plantation (Menon & Warr, 2013).

The expansion of industry in Lao economy was initially caused by manufacturing, in particular, garment and textile industry. In the subsequent time, mining construction, electricity, water, and gas industry (non-manufacturing) become the dominant contributors to the value-added growth. The value-added share of manufacturing sector fell from 14% in the 1990s to around 8% in the 2000s. Meanwhile, resource-based output grew hugely from 5.5% to above 27% in 2011. This shift has been driven by natural resources and electricity export and investment in hydropower (ibid). The economic boom, driven by the natural resources, does not much translate to employment in the economy. However, after the natural resourced industry has peaked in 2006, manufacturing industry take over as the highest share of industrial value-added in GDP. This increase in the industry value added share created more employment in the industry sector the resource sectors (A. S. Vanthana Nolintha, Leebor Leebuapao and Phetsamone Sone, 2014).

Along with the structural change of the economy, labor force distribution in sectors also has a similar shift, but large proportion remains in the agriculture sector. Over last two decades, the labor force participation rate has been high. In 1995, Almost 83.85% of the working-age was in labor force and the rate

marginally falls to 78.5% in 2005 and 71.9 in 2011 (Ibid). As it could be seen in Table 4.3, the share of the labor force in the non-agriculture sector has increased over time in contrast to the share of the labor force in agriculture which has started falling from 77.4% in 1998 to 66.14% in 2013. The share of the labor force in the manufacturing sector increased from 4.6% in 1998 to 7.8% in 2008. In overall, there are many concerns over the limited number of employment in mining and hydropower industry because of these industries, the key driver of the growth over the decade; hold only 0.6% of the workforce in 2013. Moreover, according to Table 4.4 the production per worker of the agriculture sector, calculated from the production of each sector divided by the number of a worker in such sectors, is at the lowest rate while the highest rate belongs to the industrial sector. This indicates the relative higher wage rent of industrial sector and service sector, respectively than the agriculture sector.

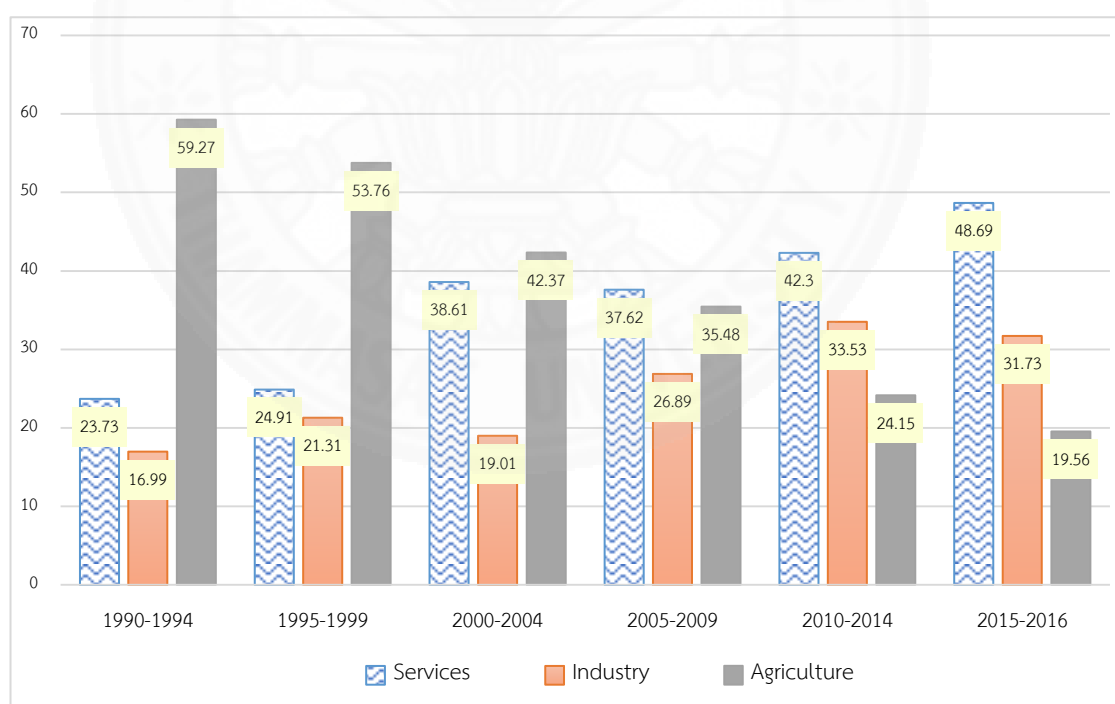


Figure 4.2 Sectoral (%) Share of the Lao Economy over Periods

Source: World Development Indicator – World Bank

Table 4.3 Total employment and composition in each sector, selected years

	1998	2003	2008	2013
Agriculture	77.78	73.73	68.45	66.14
Mining and hydropower	0	0.21	0.49	0.63
Manufacturing	4.6	5.94	7.68	7.04
Construction	2.47	2.9	3.47	3.69
Services	15.15	17.22	19.91	22.5

Source: Nolintha (2015)

Table 4.4 Labor Productivity and Wage Across Sectors

Sector	Employment (thousand)	GDP Billion KIP	Production per Worker (a million)
Agriculture	2,155	16,056	7.5
Industry	251	14,657	58.4
Services	610	22,227	36.4
TOTAL	3,016	52,940	17.6

Source: Jones (2015)

4.1.3.3 Trade and Investment

Internationalization is one key dimension of the economic reform in 1986. Both foreign direct investment influx and engagement in international trade have become greater over time. In terms of international trade, the gradual abolition of both import and export restriction such as tariff barrier and non-tariff barriers could be seen in the relatively low degree of trade with tariff rates having a simple average of 9.6 percent and a weighted average of 14.7 percent. Also, the maximum rate of import tariff falls from 100% to 40% In 1995 (Vixathep, 2011). In addition to unilateral reform, Lao PDR has also increasingly engaged in bilaterally and multilaterally free trade agreement (Menon & Warr, 2013). In particular, becoming a member of ASEAN in 1997 and WTO in 2013 are major steps for Lao PDR in terms of trade liberalization.

Over two decades after economic reform, trade has progressively become larger. By 1990, total trade was below 500 million \$US and trade openness was under 30% of GDP. Next two decades, total trade reached over 5.8 billion \$US and Trade openness touched 91% of GDP in 2010 (Figure 4.3). Despite the rapid growth of total trade, it also faced one major contraction during several years after the 1997 AFC. Moreover, in terms of trade direction, Thailand remains the biggest partner of Lao PDR. Between 2004-2009, the official trade with Thailand covered two-thirds of total trade. Perhaps, the limitation of Laos geographic condition, immediate transshipment, limited commercial penetration beyond the immediate neighbor is reflected. The European Union was the second biggest trading partner, but China has taken over after the 2000s.

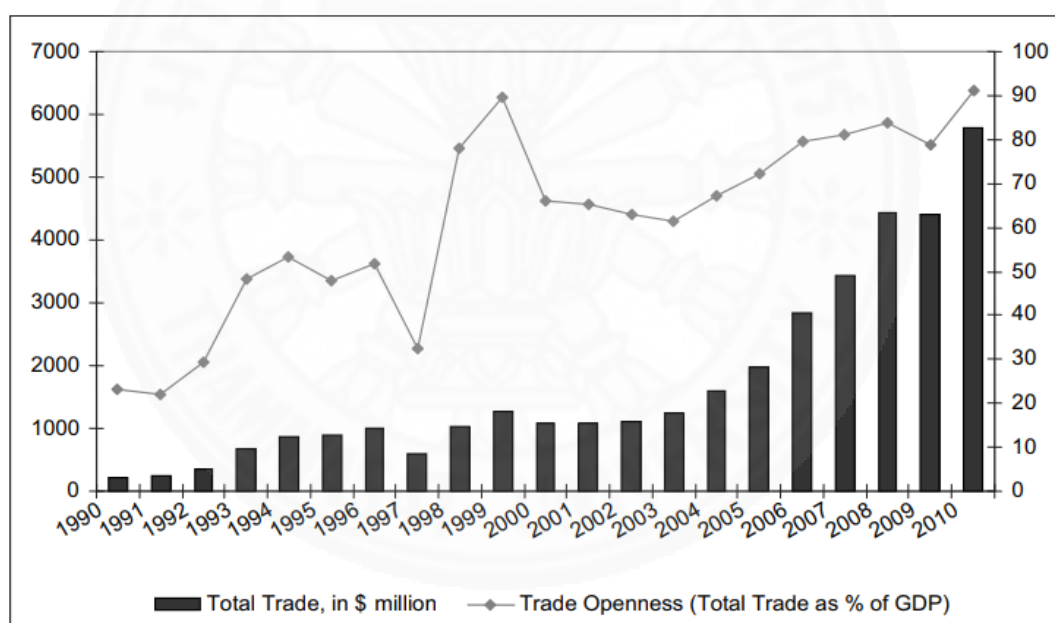


Figure 4.3 Lao Trade Volume and Trade Openness from 1990 to 2010

Source: Menon (2015)

In terms of the structure of Lao export over two decades, the primary commodity covered 80% of all export in 1990 and 2010. By 2000 (Figure 4.4), the significant shift in the export of the clothing, footwear, machinery, and other equipment lays a positive sight for the manufacturing sector of Laos. Perhaps this

shift was influenced by a unilateral preferential scheme like General Preferential Scheme (GMS). But the shift of export composition has reverted in 2010, primary commodity export became dominant again because of the external demand of the primary commodities, such as ores, metals, and fuels. Lately, resource-based items become a key export of Laos, in particular, electricity and mining ore exports.

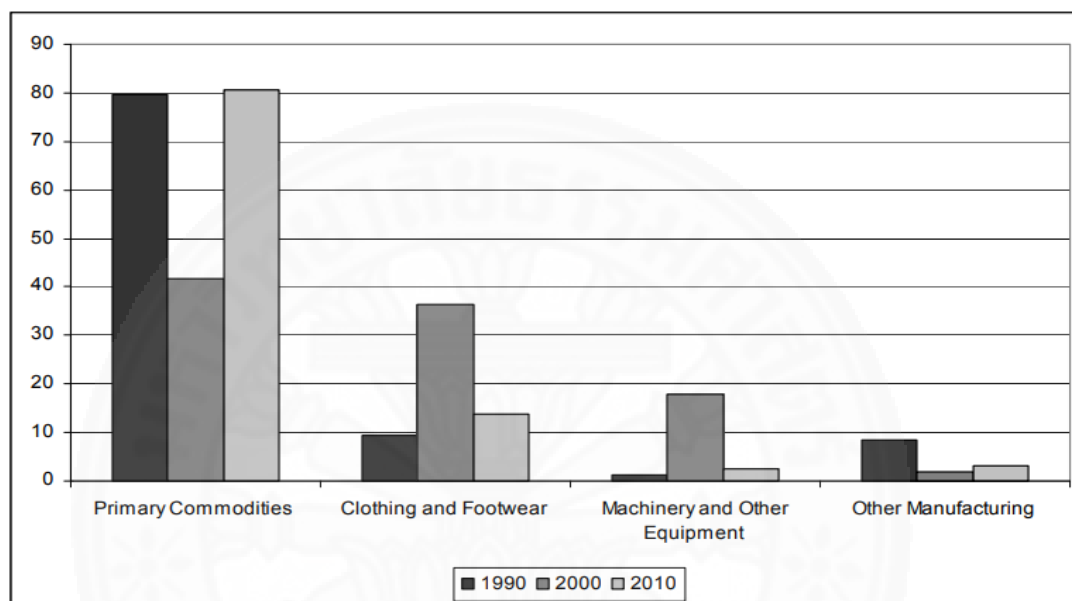


Figure 4.4 Composition of Lao Export from 1990 to 2010

Source: Menon (2015)

In the same way, the value of FDI stock in the Lao PDR has rapidly grown in the similar trend as international trade. In the initial period after the adoption of foreign direct investment law granting the 100% of ownership to a foreign investor in 1988 to 1996, the FDI stock has increased from 2 million to 370 million \$US dollar. Their fluctuations are also similar, which the net inflow dramatically shrank during the early period after the 1997 AFC. But during the global financial crisis in 2008, the FDI net inflow has marginally grown. Until 2012, net FDI inflow has rebounded again. By the year 2015, the value of FDI stock in Laos was about 5 billion \$US (Figure 4.5).

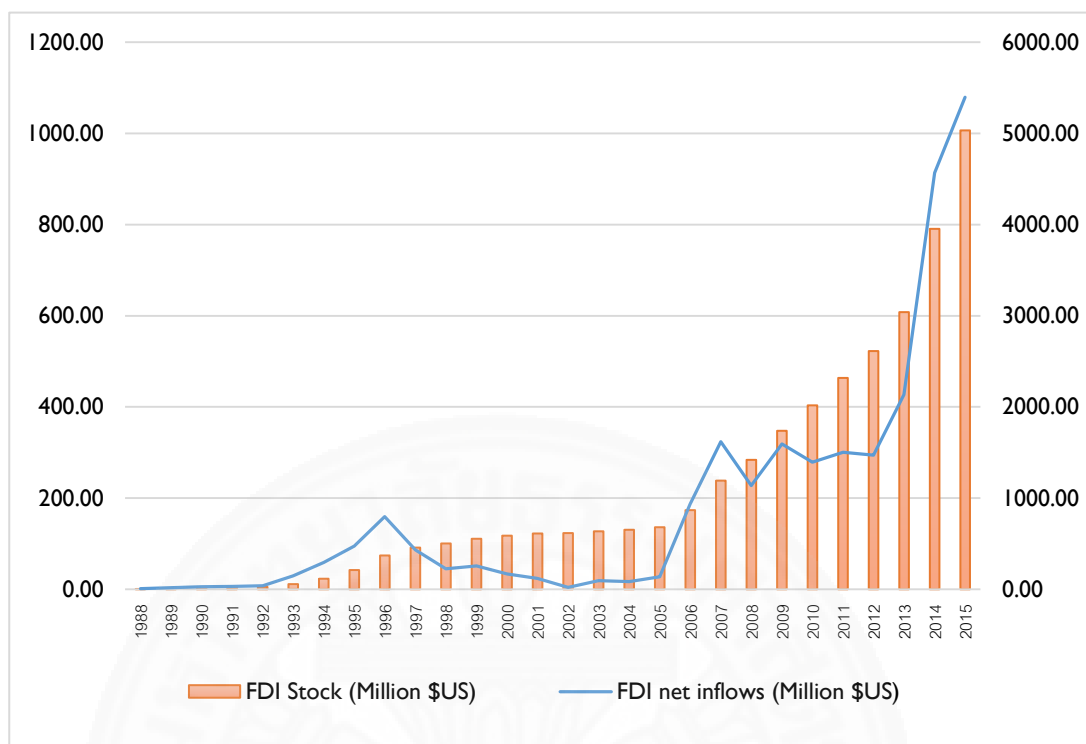


Figure 4.5 FDI Inflow and FDI Stock of Lao PDR from 1988-2015

Source: World Development Indicator – World Bank

In terms of the composition of recent FDI inflow to Laos, as it is shown in Figure 4.6, the hydropower and the mining sector has become more and more dominant over the time. These sectors hold 19% of all FDI during 1990-1996 and shrink during the AFC which the share fell down to 12%. However, after that, the share was above 50%. Most recently, only FDI in these sectors covered 73% of total FDI. On the other hand, the share of the service sector has decreased from 55% during 1991-1995 to 13% in 2011-2013. Interestingly, this sector dominated the share during the AFC covering 65% while the share of hydropower and mining sector fall down to 12%. Besides, the share of both agriculture and manufacturing sector in FDI are steady at the bottom of the time. Most recently, the share of the manufacturing sector was just 4%.

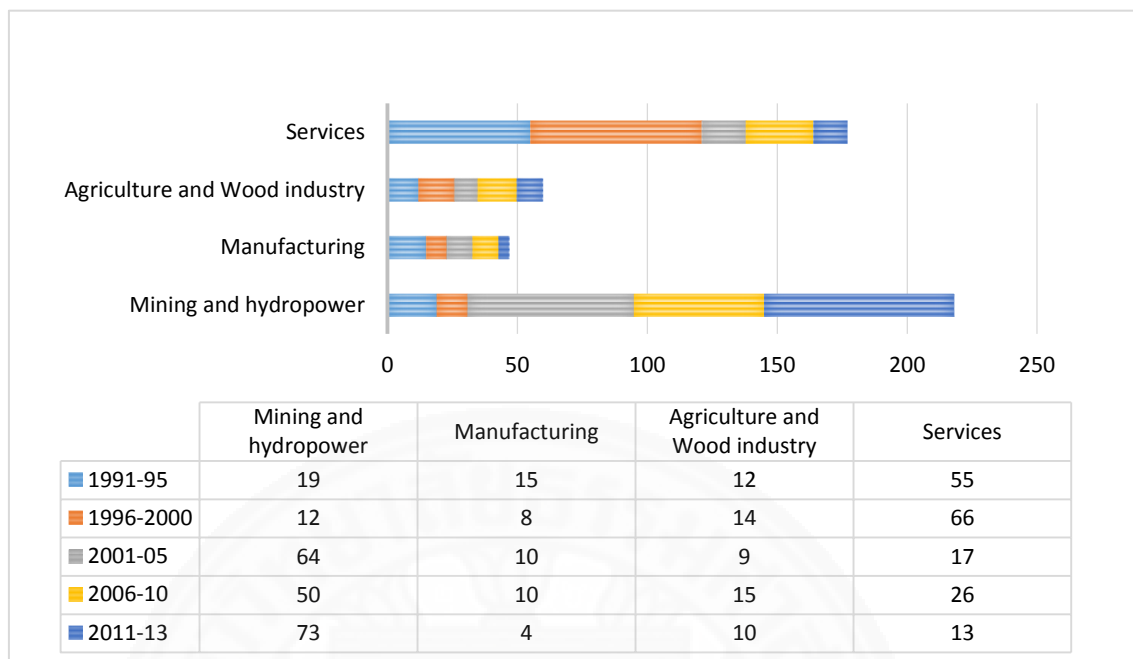


Figure 4.6 Composition of Committed FDI in Lao PDR

Source: Nolintha (2015)

Nevertheless, large FDI influx into mining and hydropower seems less likely to involve major part of local people particularly in terms of employment, these sectors have limited contribution to domestic employment. It could be because of the industry itself which are a capital-intensive industry. The skilled labor and technology are mostly imported from outside Laos. In particular during the construction period. On the other hand, FDI inflow of labor-intensive industry like agriculture, manufacturing, service, which are more potential to generate higher employment, were relatively small in comparison to the mining and hydropower sector (NOLINTHA, 2015).

4.1.3.4 Other Social Development

Demographic Transition: Since entering to the complementary time of Laos, the population has rapidly expanded. By 2015, Lao population is estimated to be 6.4 million people which expanded from 3.6 million people in 1985. Approximately, Lao population has increased a million per decade. According to the projection of Lao Statistic Bureau, the population of Laos would reach 10 million by

2050. Moreover, Hayes (2015) provided three main characteristics of Lao demographic transition over decades. Firstly, ongoing mortality transition which the crude death rate has been declining since 1950. Secondly, crude birthrate rate remains high (40 and 45 per 1,000). Last, natural increase rate also remains high due to the decline in mortality rate and steady of the birth rate. As it could be seen in Figure 4.7, the annual natural growth rate was at 2.47 during 1985 to 1995, and it started falling down to 2.08 and 1.45 during 1995-2005 and 2005-2015 respectively.

In addition, Total Fertility Rate has also declined over time in spite of climbing in the mid-1990s at the rate of 6% which seems so high compared to 3.4 % of Vietnam. By 2015, Lao TFR has decreased to 3.2%, but it is still high over 2% of replacement level (Jones, 2015). More importantly, the Lao TFR diversifies among the subgroup of the population which could be classified by education and income characteristics. The TFR of the richest quintile is 1.9 while the poorest quintile is 5.3. In the same way, the educated has a lower TFR than the uneducated with the rate at 5.3 and 2.0 respectively. In addition, family mode of production also influences the TFR particularly agricultural sector seems to have higher TFR than industrial and service sectors. It is obvious that the decline of TFR only concentrates on a specific group of population (Hayes, 2015).

Besides, high TFR of Laos in the past still reflects the age structure of population which could be seen in the large share of population under 15 years in 1995 and it is declining in subsequent time (Figure 4.8). The changing of age structure is quite positive to the development especially due to the expansion of working group and reduction of dependency rate over time. In terms of aging has not been an issue for Laos yet due to the recent proportion of the population over 60 to all population is relatively low. For the long-term prospect in the next 30 years, the structure of Lao aging population would remain lower than Thailand in these days (Jones, 2015).

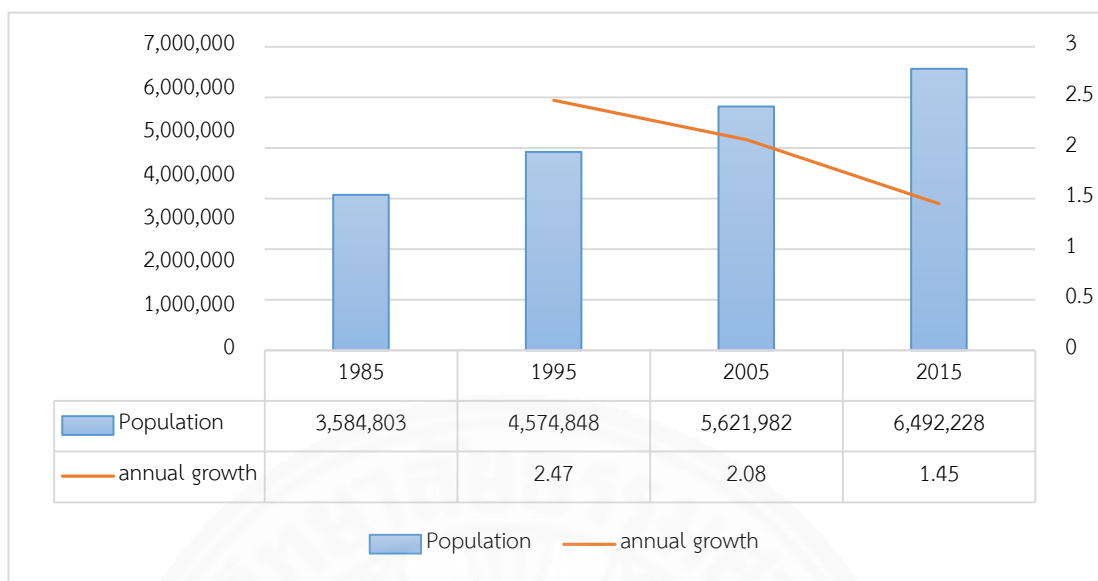


Figure 4.7 Population Growth of Lao PDR Over 3 Decades

Source: Lao Statistic Bureau

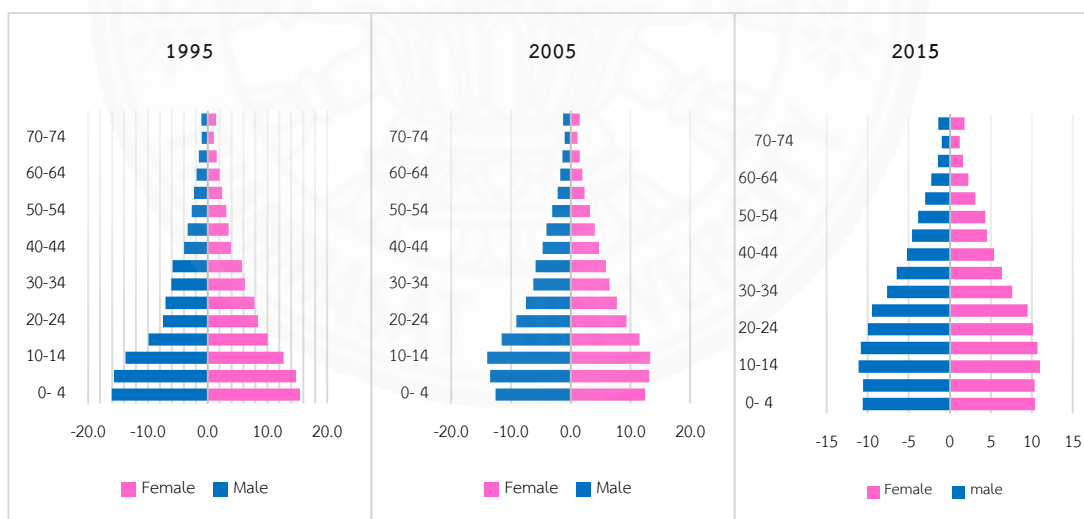


Figure 4.8 Population Pyramids in 1995, 2005, and 2015

Source: various statistical yearbook, LSB

Human Development (Education and Health): Since the economic reform, besides achieving satisfied economic performance, human development also experienced much improvement which could be noticed in some

indicators of education and national health. These two factors could mirror the capability of the population to participate in economic activities in whether current time or in the near future. To begin with Lao education performance, as it could be seen in Figure 4.9, the increase of adult literacy rate from 60.25% in 1995 to 84.4 % in 2015. At the same time, the gap of literacy rate between male and female has also decreased even the gap remains wide. In addition, according to Figure 4.10, the net enrolment rate of the children of primary school age (aged 6-11) has shown a very positive trend over time. By the year 1992, only 63% of the school-aged population attended the primary school and it increased to 86.4 percent in 2006. Also, inequality of net school enrollment between male and female has declined. However, despite the significant improvement in the adult literacy rate and net primary school enrolment, the survival rate to grade 5 remains a concern, which just increased from 48 percent in 1992 to 70 percent in 2012. Noticeably, high dropout rate concentrated on the children in the rural area and low-income family (Jones, 2015). Alongside, national health progress is also remarkable. Life expectancy of Laotian population has increased and child and infant mortality have declined even though it remain high. It is also shown in the declining in a number of under weigh children among under 5 decreased from 37.1 percent in 2006 to 26.6% in 2012 (Vathana, 2015).

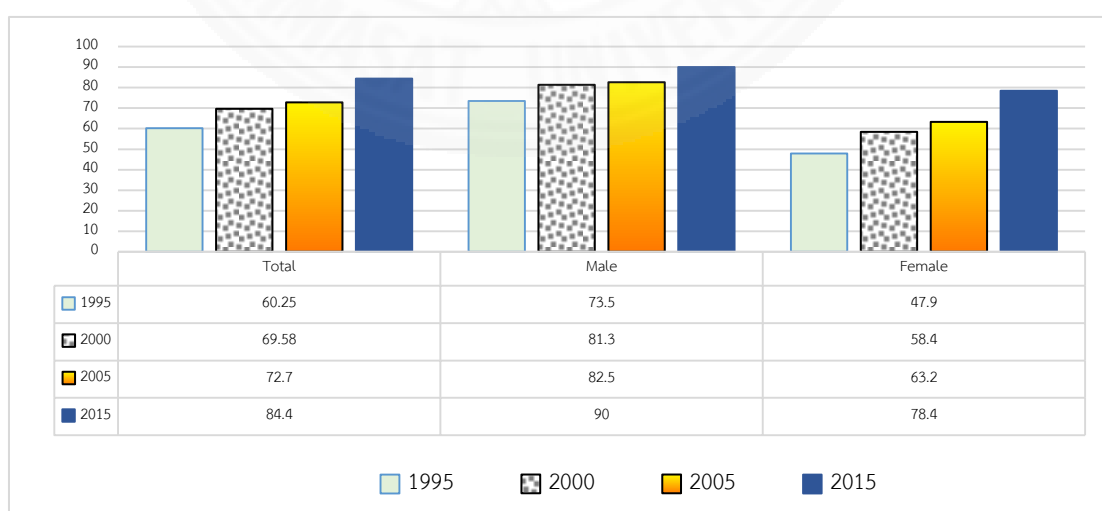


Figure 4.9 Adult Literacy Rate (Percent)

Source: Nolintha (2015)

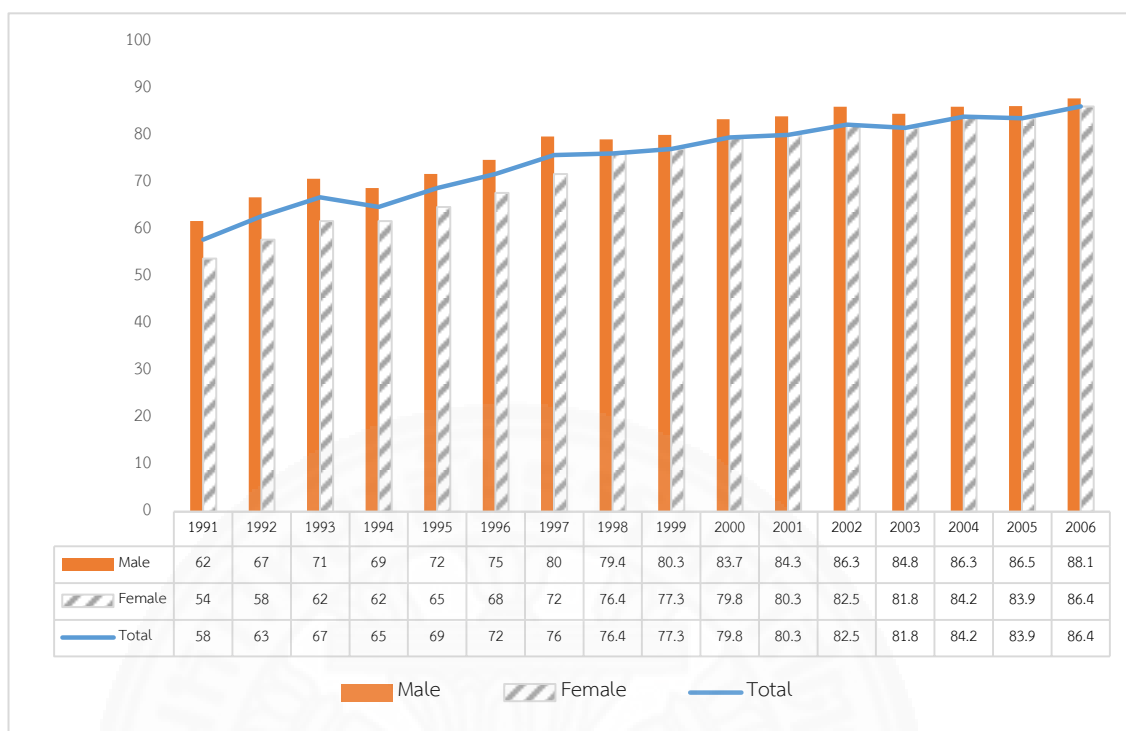


Figure 4.10 Net Primary School Enrolment

Source: MOE, Laos

Besides two main key indicators of human development above, accessibility to economic resources is also one of the key social development indicators. This accessibility holds an essential condition for human development. Over two decades, the rate of household accessing to economic resources namely electricity, land and road has steadily improved. Table 4.5, 4.6, 4.7 shows the percentage of household that has an access to road, electricity, and land, respectively. Firstly, access to the road as one of basic infrastructure has improved particularly in terms of coverage. In 2007, most of all Lao household could access the main road during the dry season. Even some 35 percent of household in a rural area could not reach the main road during the rainy season in 2008, but there are already many improvements comparing to the past. Secondly, in terms of electrification, more than 90% of household in urban has been covered since the 1997 and the rate increased to 96.4 percent in 2013. The electricity coverage in rural also climbed up from 19.2 percent in 1997 to 72.7 percent in 2013. Lastly, access to

land, generally, may not be a big topic for land rich with a tiny population like Laos, but there was an issue in lacking accessibility to land in Laos especially in urban area. In 1993, only 51 percent of the urban household has accessed to land. Next 10 years, Lao household has inclusively accessed to land.

Table 4.5 Percent of Lao Household has an access to Road

	Dry Season		Rain Season	
	2002/03	2007/08	2002/03	2007/08
Laos	71	99.8	54	84
Urban	100	100	97	98
Rural	84	100	65	80

Source: Various LECS Summary, LSB

Table 4.6 Percent of Lao Household has an access to Electricity

	1997/98	2002/03	2007/08	2012-13
Urban	91	95	99	96.4
Rural	19	26	48	72.7
Total	31	33	61	76.5

Source: Various LECS Summary, LSB

Table 4.7 Percent of Lao Household has an access to Land

	1997/98	2002/03	2007/08	2012/13
Urban	51	87	99.9	95.8
Rural	93	93	99.8	98.3
Total	86	92	99.8	97.5

Source: Various LECS Summary, LSB

4.2 Inequality Circumstance in Lao PDR

This section explores the inequality situation in Lao PDR in the complementary development in particular after the economic reform due to the availability of essential data such as data on individual income, wealth, and consumption expenditure. The situation could be divided into 2 main periods starting from 1975 to 1986 and after 1986 onward. In the first period, it lacks the empirical data to indicate the level of social inequality. The household consumption expenditure survey has been initiated in the early time after reform, which leads to the substantial availability of data that have been utilized to evaluate inequality indices. In general, inequality has kept rising overtime since the reform.

Due to the lack of sophisticated methodology to evaluate inequality during this period and before, a qualitative approach was used instead, which a particular determinant has been set to represent the society as a whole. Similar to Laos, this obstructer also occurred in other former socialist countries. Thus, many works in the field of inequality has focused on the rising inequality in during post reform, for instance, (J. Barkley Rosser, 1990), Nina Bandelj (2010), Galbraith (2014), To compare inequality between the past and the present may not possible due to this obstructer. However, as it is well-known, the nature of the political regime and economic system of the communist state, such as state's controls over production and redistribution, with a key claiming of the egalitarian structure of income distribution. Shifting away from a planned economic system in many post-socialist countries was found to be associated with rising inequality (Verhoeven, 2007). This outcome of economic reform might be similar to the case of Lao PDR.

The statistical data on Laotian household consumption expenditure was conducted in 1992 as the first survey on Laotian household welfare, the last survey was carried out in 2012. Regularly, the survey is conducted in five-year interval and there are five surveys conducted so far. This kind of survey is called as Lao Household Expenditure and Consumption Survey (LECS), which aims to collect the data on Laotian household welfare such as consumption expenditure, education, nutrition, employment and so forth. Essentially, the household consumption

expenditure, as a key for poverty and inequality measurement, consists of the spending on goods and services (both self-produced and purchase) and expenditure on a number of durable goods (Warr et al., 2015).

Due to this start, the social development indicators have been able to be empirically examined, especially, inequality and poverty indices. Similar to other low-income countries, consumption expenditure is chosen as a key indicator of inequality and poverty indices. The plausible was, consumption expenditure is more appropriate for the low-income country than income base because of the nature of employment in both groups are different. For instance, self-employment in low-income countries is harder to quantify the income of household rather than wage and salary of household in high-income countries (Haughton & Khandker, 2009).

With the available statistical data, inequality was found to increase over time since the first survey. First of all, according to Table 4.8, the household expenditure among the quintiles diverted. In each year, the richest quintile captures almost 50 percent of all expenditure, showing stratification of society. For example, the consumption expenditure per person of the rich in 2012 is 37090 Kip while of the poorest is just 6312 Kip. Moreover, solely the top quintile has taken most of the share in growth which is indicated by the widening gap between the top and the rest. While the progress of the lower quintile remains slow. As it could be seen, the fourth quintile, in five years, is close to the mean while others are far below.

Furthermore, to have a more precise look on changing of inequality in Laos, The Lorenz curves over 2002/03, 2007/08, and 2012/13 (Figure 4.11A) on consumption expenditure indicates that inequality has slightly increased and the higher cumulative population has taken more of cumulative share in total consumption expenditure over time. Besides, the expenditure growth rates of each percentile from 2002/03 to 2012/13 is also unequal. As it is illustrated in Figure 4.11B, the growth of the lowest percentile was just 20 percent while of the richest was almost 190 percent. In sum, the higher class enjoyed a higher rate of consumption expenditure growth.

In addition, inequality could be pictured by various indices, such as Decile Dispersion Ratio, Gini Coefficient, Generalized Entropy, Atkinson's Index, and so forth. Among these indices, Gini coefficient is the most common index used to measure inequality and its estimation is normally based on the Lorenz curve. Theoretically, the Gini coefficient can range from 0 (complete equality) to 1 (complete inequality). Sometimes, a number of researchers or data centres, including Worldbank, use percentile range from 0 to 100 (Haughton & Khandker, 2009).

As the basic dispersion of expenditure has been reviewed above, considering the Gini coefficient would provide a clearer picture of the changing of inequality in Lao PDR. As it is illustrated in Table 4.9, the Gini coefficients of Laos and Lao region were computed by Warr et al. (2015) based on LECS. In overall, inequality in Laos remains modest, but it has kept increasing. As it could be seen, Gini coefficient has increased by 0.06 point over 2 decades. However, there is one decline in 2002, which decreased from 0.35 in 1997 to 0.33 in 2002. This is quite consistent with the falling of the expenditure per person of the richest quintile (in table 4.8). Moreover, in Lao regions, inequality in Vientiane, southern and center region are more pronounced than the northern region. In terms of rural-urban dimension, households in urban seem to be more unequal.

Table 4.9 Gini coefficient in Laos and Lao Regions

	1992–1993	1997–1998	2002–2003	2007–2008	2012–2013
Vientiane	0.30	0.37	0.36	0.38	0.38
North	0.27	0.35	0.31	0.35	0.32
Center	0.32	0.33	0.31	0.34	0.34
South	0.32	0.32	0.31	0.32	0.37
Rural	0.29	0.32	0.31	0.33	0.33
Urban	0.31	0.38	0.35	0.36	0.38
National	0.31	0.35	0.33	0.36	0.37

LECS = Lao Expenditure and Consumption Survey.

Data Source: GINI - (War 2015), GDP-PPP per Capita – Current International

Additionally, according to Table 4.10, Gini is also quite modest in 2002-2003 comparing to countries in this region in the same and adjacent year particularly the close neighbors, including Cambodia, China, Thailand, and Vietnam. Especially, both Vietnam and Cambodia, which experienced a similar development stage, also face a higher rate of inequality. However, in 2013, Gini coefficient of Laos has climbed up at 16.01% from 2002 – 2013 and this rate become the highest rate of rising in inequality in this region; meanwhile, it has significantly declined in some countries like Cambodia, China, and Thailand. Even it is not the highest rate. The trend of worsening of inequality has still placed a warning sign for Lao development.

Table 4.10 Gini coefficient Laos and countries in the region

Country	Gini	Year	Gini	Year	Change	Percentage Change
Cambodia	35.46	2004	30.76	2012	-4.7	-13.25
China	45.06	2002	42.16	2012	-2.9	-6.43
Laos	32.66	2002	37.89	2012	5.23	16.01
Thailand	41.94	2002	39.26	2012	-2.68	-6.39
Vietnam	37.32	2002	38.7	2012	1.38	3.69

Source: World Development Indicator – World Bank

Moreover, Warr et al. (2015) provided a decomposition analysis on the rising inequality by measuring Theil index with an ability to analyze the subgroup component, and it suggests that within inequality is a major attribute to total inequality in both provinces and rural-urban dimensions. For instance, as illustrated in Table 4.11, within province inequality in 2007 holds just 15 percent of all inequality while within province inequality holds 75 percent. over time, the share of within inequality in both dimension remains stable. As it is showed in Table 4.11, the share does not exceed 23%. This result suggests that inequality issue in Lao PDR was less determined by the uneven growth between Laotian provinces and between rural and urban areas, but the changing of the social and economic structure of society in each area play a larger role. In conclusion, inequality in Laos has increased since the reform and major attribution of inequality is from within inequality.

Table 4.11 Decomposition of Inequality in Laos by Provinces and Rural-Urban

	1992/93	1997/98	2002/03	2007/08	2012/13
Total inequality	0.155	0.240	0.191	0.224	0.217
Decomposed by provinces					
Within provinces	0.120	0.200	0.160	0.190	0.180
Between provinces	0.035	0.040	0.031	0.034	0.037
(% between provinces)	23	17	16	15	17
Decomposed by Rural/Urban					
Within rural/urban	0.130	0.210	0.160	0.190	0.190
Between rural/urban	0.025	0.028	0.030	0.027	0.035
(% between rural/urban)	16	12	16	12	16

LECS = Lao Expenditure and Consumption Survey.

Source: Warr (2015).

4.3 An Initial Attempt to Find the Causes of the Rising Inequality

As social and economic development and inequality circumstance in Lao PDR have already been discussed in the recent section, this section attempts to find some linkages between the rising inequality and the development. There are two main points made here, including the correlations between inequality and the factors (development and internationalization). First of all, as it shows in Figure 4.12a, the rising inequality is in the same trend as the growing GDP per capita and declining agriculture sector even though growth and structural change were not much affected by after the AFC 1997. These correlations seem to be consistent with Nielson (1994) that economic development and industrialization reflected by the rising national income and industrial sector.

Secondly, as a result of market reform, the country has increasingly engaged with the world economy indicated by the climbing rate of trade openness and foreign direct investment. As it could be observed in Figure 4.12b, the fluctuation of inequality (Gini coefficient) and these indicators are strongly and

positively correlated. The increase of trade openness and FDI during the era before the AFC and after the recovery from the crisis are related to the increase in inequality. Most interestingly, FDI and trade openness shrank in the early period after the AFC, which was coincident with declining inequality. This makes these indicators and inequality well correlated. This trend provides a clear picture of the effect of economic reform on inequality because the reform encourages the internationalization and it seems to determine the inequality. However, there are just small number of observations draw form this trend. In the empirical study of this work would attempt to give a more concrete augment over the causal relationship. In sum, from these indicators, economic development and internationalization since the reform are well associated with the rising inequality.

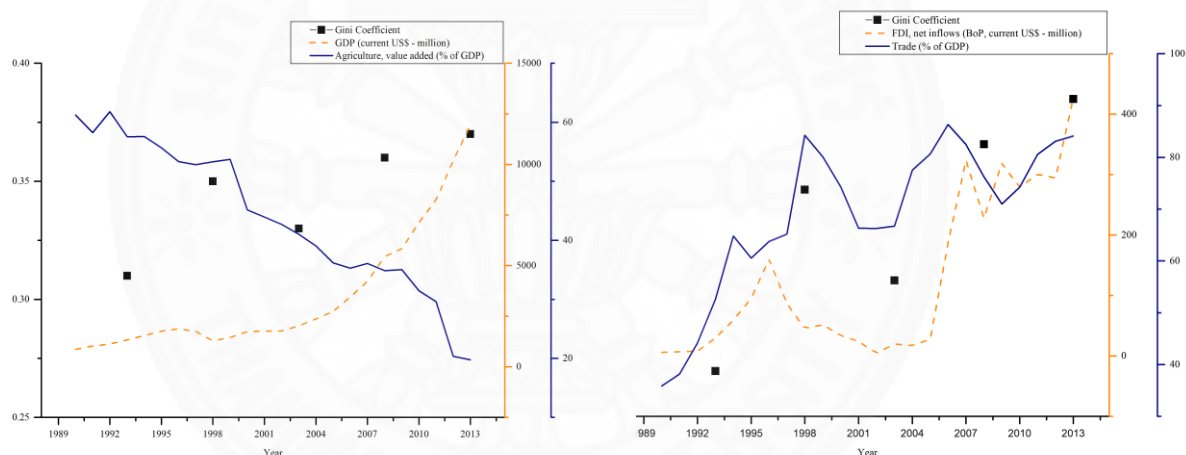


Figure 4.12 (A) Trade openness, FDI, (B) GDP, Agriculture sector, and Gini coefficient in Lao PDR

Source: World Development Indicator – WorldBank

4.4 Lao Government's Roles and Policies Responding to the Rising Inequality

Since the economic reform in 1986, Lao PDR has been experiencing the high rate of economic growth in Laos, taking the people out from the bottom and let them enjoy the growth or making growth inclusive become a significant task for the government to take into account. Ordinarily, inequality issue has not been mentioned in government agenda while absolute poverty issue is a main development agenda. Having said, absolute poverty issue is a priority issue to tackle in the low-income country, but inequality also potentially has a negative effect on poverty reduction efforts (Warr et al., 2015).

In the early of 2000s, National Growth and Poverty Eradication Strategy (NGPES) was adopted as a poverty eradication program with an aim to reduce the mass poverty in 2010. This strategy mainly intended to give a direct hand to the poor by implementing some sectorial program based on individual household, group of villages, district. Basically, the poor are targeted by the information of household consumption expenditure from the Lao Household Expenditure Survey, and the intensity of poor are used to determine the location which the program will target at (Fane, 2006). In terms of the implementation, just a few programs directly targeted specific household such as Ministry of Health's Health Equity Funds. Most of the poverty eradication program targeted on a specific location such as district with a high rate of poverty density. This kind of policy has weakness in tackling poverty, in particular, it could not inclusively reach all the poor particularly urban poverty and the poor in the low-density population areas which were not included in the targeted districts (LaoDecideInfo, 2013).

Attempting to cope with the rising inequality has been directly mentioned in the 7th 5 Years Socio-Economic Development Plan (2011-2015). This kind of plan is one of major mechanism covering the national development priorities and strategies for 5 years. Because the evaluation of the sixth 5 Years National Socio-Economic Development (2005-2010) raised the concern over the rising of inequality. Being aware of the issue, disparity became one core objective of the 7th plan. The plan also set the direction to implement as below:

“Finding solutions to endemic poverty; giving boost to rural development and poverty reduction (in line with building capacity along the four goals and four targets); allocating land, creating stable jobs, and raising livelihoods; ensuring fairness in the society; reducing inequality between urban and rural areas, rich and poor people, and genders through encouraging knowledge and education for people; preventing diseases and providing better health care; creating basic infrastructure in villages and Kumbans; establishing more development villages; and reducing risk of unexploded ordnance (UXO)” ((MPI), 2011)

The above direction of the plan’s objective seems to be the strategy to tackle inequality through expanding the size of public services at a macro level such as education, healthcare, and other infrastructures. In addition, this strategy also targets the lower quintile share of distribution by encouraging equal opportunity for all nationals in accessing to such services. It seems more likely a measure addressing inequality in opportunity rather than inequality in the outcome. Besides, a similar trend in this direction could be seen in the accessing to public services of quintile group in Table 4.12 & 4.13.

Table 4.12 Access to Primary School by Quintiles (age 6-10)

	LECS 2	LECS 3	LECS 4	LECS 5
Quintile 1 (poorest)	29.15	48.21	61.51	77.85
Quintile 2	32.28	61.85	75.3	85.3
Quintile 3	37.36	72.37	81.21	88.63
Quintile 4	39.35	79.38	87.27	88.9
Quintile 5 (richest)	41.79	84.78	92.62	95.26
All	35.79	67.36	77.18	85.22

Source: Warr et al. (2015)

Note: Data in LECS 1 are not available

Table 4.13 Access to Hospital-Based Outpatient Care and Electric Supply

	Hospital-Based Outpatient Care			Electricity Supply to Home		
	LCES3	LCES4	LCES5	LCES3	LCES4	LCES5
Quintile1 (Poorest)	0.6	0.97	0.92	8.9	16.8	48.6
Quintile2	0.9	0.94	1.12	16.8	35.9	63.6
Quintile 3	1.3	1.4	1.5	30.5	51	75
Quintile 4	1.9	1.8	1.8	49.8	63.7	80.6
Quintile 5 (richest)	2.5	3.1	2.7	66.5	78.2	91
All	1.4	1.6	1.6	33.8	49.2	70.8

Source: (Warr et al., 2015)

Note: - Hospital-Based Outpatient Care represents a number of accessing time in a previous month divided by the population, the value of ratio could be more than one in the case that people used than one.

- Data in LECS1 & 2 are not available

According to Table 4.12, the number of people (6-10-year old) of quintiles accessed to primary school has increased from 35.79 in 1993 to 85.22 in 2013. Importantly, the growth rates of the lower quintiles have grown faster than the top, then accessing to primary school become more equal among quintiles. In the same way, access to healthcare and electric supply, shown in Table 4.13, also has the same tendency as education. Noticeably, this increasing number of people have access to public services and the positive trend of equality to access of quintiles could be a result of public service expansion.

Besides, the fiscal measures are also used as a key means to ensure the inclusive development. Even though these measures are not directly mentioned as a mean dealing with inequality, the progressive structure of tax rate pictures a redistributive purpose of the state. There are 7 different rates of personal income tax in Lao PDR (Aseanup, 2016). Simply, the more one earn the more one have to pay. In short, practically, this seems to be the easiest indications to look at the government policy dealing with inequality. In short, it could be summarized that the main strategy of Lao government toward the rising inequality is through ensuring the equality of access to public services.

CHAPTER 5

RESULT AND DISCUSSION

In order to find the determinants of the rising inequality in Lao PDR, the study utilized Pooled OLS regression with the panel data set, covering seventeen Lao provinces over three periods (2003, 2008, and 2013). This chapter explores the determinants of the rising inequality, proceeded as follow. The chapter begins with the general result of the empirical analysis and ends up with some discussions over the determinants.

Table 5.1 Regression Result

Dependent Variable (GINI index)	Model 1 (Income & Inequality)	Model 2 (Kuznets' Curve)	Model 3 (Internal Development)	Model 4 (Internation- lization)	Model 5 (State - Institution)
Household Income (kip)	0.144*** (3.10)				
Household Income (LOG)		16.57 (0.63)			
Household Income (LOG) (Square)		-0.571 (-0.52)			
% of activity in agriculture sector			-0.079** (-2.15)		
Average Year of School of all population			0.87** (2.24)		
Population Growth (%)			0.45 (0.45)		
Foreign Direct Investment				0.013** (2.49)	
Government Expenditure (US dollar) (percap)					23.96** (2.57)
Road access (%)					0.11*** (4.41)

Table 5.1 Regression Result (cont.)

Dependent Variable (GINI index)	Model 1 (Income & Inequality)	Model 2 (Kuznets' Curve)	Model 3 (Internal Development)	Model 4 (Internationalization)	Model 5 (State - Institution)
Access to Electricity (%)					0.034* (2.47)
Constance	28.73*** (26.02)	-84.89 (-0.54)	31.33*** (6.20)	31.14*** (53.52)	17.96*** (10.50)
F-value	9.61***	5.63*	7.77***	6.18**	12.59***
Adjust R Square	14.69	15.64	28.88	9.38	44.56
N. observation	51	51	51	51	51

Note: t statistics in parentheses * p<0.1, ** p<0.05, *** p<0.01

5.1 Regression Result

Table 5.1 elaborates the estimation result of the equations in this study. The models are presented in the columns, respectively. There are the same number of observations of 51 in each model. In general, F-statistics of the models provide satisfactory results indicating that all models are statistically significant. For instance, In the first model, it is seen that 11.69 percent of the variation of Gini Index can be explained by the change of the household income, and the positive relationship between income level and inequality is found. In the second model, two explanatory variables are statically insignificant with Gini Index. In the third model, the average year of school and the labor force in the agricultural sector are found to be statistically significant with Gini index. In the fourth model, FDI inflow is statistically associated with Gini Index. The result of the last model shows a positive relationship between all independent variables (government expenditure on education and health, road access, and electricity access) and Gini index. Moreover, the causal relationships are discussed in the next section.

5.2 Discussion and Analysis

The section is divided into four main sections as follow. The first would cover the first two models regarding the relationship between inequality and economic development. In the second section, it discusses the international development model. Lastly, the third and fourth inspect the globalization and state-institutional factors, respectively.

5.2.1 Income Growth and Inequality

According to Table 5.1, in the first model, it shows that mean personal income is positively associated with Gini Index at 5% of probability of an error. If income per capita increase by 10000 Kip, *ceteris paribus*, Gini Index would increase by 0.44. This result is in line with many studies suggesting that inequality would increase in tandem with rising income. Regarding the Kuznets' inverted-U relationship between a growth in income and income inequality, it is quite consistent because Lao PDR is still in the early phase of the economic development. To confirm this explanation, the study has tried to capture the Kuznets' curve of the relationship between these two variables and Gini Index in the second model (second column). As a result, there is no variable found to be statistically significant in the second model, meaning that inverted U-curve has not yet presented in Laos. In sum, this result suggested the positive relationship between economic development and inequality in Lao PDR, meaning that an increase in income would lead to more inequality.

5.2.2 Internal Development Model

The result of the third model, presented in column 3, indicates that the share of labor in the agriculture sector to all sectors exhibits a negative and significant relationship with the inequality, the average year of schooling exhibits a positive relationship with the inequality, and the natural rate of population growth does not exhibit a significant relationship. As discussed in chapter two, the internal development model was initiated by (Nielsen, 1994) by operationalizing the Kuznets explanations over the inverted-U relationship. Then, in overall, the result of this

study is partially in line with the mentioned study, except for the positive relationship of the year of schooling as a proxy of education spread and inequality. Further explanations of the variables are made below.

Sector Dualism: According to table 5.1 (column 3), percent of the workforce in agriculture sector is found to be significantly and negatively associated with Gini index, which means that the more labor force is in the agriculture sector, the less inequality society is. This result is consistent with Nielsen (1994) suggesting a positive relationship between structural change and inequality. He resorted his explanation for this causal relationship to Kuznets's explanation that in the early stage of development, there is a shift of labor from the traditional sector (agriculture sector) to the growing sector (industrial sector) with higher productivity and return. This shifting affects inequality in the same way as the conjecture between growth and inequality.

In the case of Lao PDR, initially, agriculture sector used to play a critical role in Laotian economy. But, recently, the service and industrial sectors have become primary segments of the economy. Moreover, the employment structure also shifted, the significant proportion of the population has been moving out from the agriculture sector to a new sector. In addition, most of the agriculture activities are subsistence-based which translates to the relative income of the labor in this sector. Thus, moving of labor from agriculture sector to non-agriculture during this period led to an increase in inequality because the shift increases the number of high-income peoples while there are still some low-paid workers in the agriculture sector. Moreover, from the result of the development and inequality relationship above supports this result because the development remains in an early stage; then, the relationship between sector dualism and inequality is supposed to be the same as growth and inequality relationship.

Demographic Transition: base on Table 5.1 (column 3), the natural rate of population growth does not exhibit any significant results, nevertheless it still shows a positive association with Gini Index. The result also coincides with the study of Nielsen (1994). As discussed in the literature review about the theoretical explanation, supply of labor force, caused by an increase in the

natural rate of population growth, would increase inequality. However, in case of Laos, as Jones (2015) revealed that the high fertility rate is concentrated among the poor while the fertility rate of the rich is relatively much lower. Thus, it can be presumed that high rate of the population growth in Laos, which is mainly concentrated among the poor, would translate to an increase of a number of the low-income population while their income base remains the same. Moreover, the birth also translates to an increase of a dependency rate to those families. Then, the population growth is associated with the inequality. However, without statistical significance, this trend may just provide a potential channel for the causal relationship.

Education Expansion: the relationship between year of schooling and inequality is found to be statistically significant in the model. However, the sign of the coefficient turns out positive, which means that an increase in a number of schooling year would lead to more inequality and this is not consistent with Nielsen (1994) positing that education spread would lead to more equal distribution. However, the negative relationship was just an overall trend of Nielson (1994) and his key finding was invested U-curve, which both of these relied on an explanation that education has two effects on income inequality, there are composition effect and compression effect, and these two effects are driven by the supply of skilled labor due to the educational expansion. Considering this explanation, in case of Lao PDR, the positive relationship seems reasonable as other factors in this internal developmental model. The educational expansion in this stage may increase the number of skilled labor, which creates a high-income group in society because the demand for skilled labor remains high and this demand translates to the high wage of skilled labor. Meanwhile, this is just an opening stage in which people just began to access to education, then most of the labor is still unskilled which translates to the plenty supply of unskilled labor with a relatively low wage. This mechanism is explained as composition effect. In terms of compression effect, a further increase in the supply of skilled labor due to further expansion of education would drag the wage of skilled labor down in relative to unskilled labor. Likewise, more people get into the higher paid market. Then, income gap would reduce. However, the

relationship could not be captured by this time. In sum, the previous education expansion in Lao PDR positively affects inequality.

5.2.3 Internationalization

As this study utilized provincial data, only data on foreign direct investment is available to investigate the relationship between globalization and inequality in Lao PDR. As shown in Table 5.1 (column 4), FDI inflow exhibits a significant and positive relationship with Gini index. In general, the trend of the relationship between inequality and FDI in this model is consistent with previous works, that FDI positively affects inequality. As it is proposed by Kentor (2001), the foreign firm pays a wage premium to a particular group, leading to differences in earning. Furthermore, this result is supportive of the positive relationship between inequality and inward FDI in Laos found by Nolintha (2015). Besides, in case of Lao provinces, it is quite supportive that capital-intensive sectors in natural resourced sector and hydropower sector seized a significant portion of FDI inflow to Laos in a previous time while labor-intensive industries were not pronounced. Then, employment as a channel of distribution would only be concentrated among highly skilled workers, and the rest could not have a direct effect from FDI.

5.2.4 State-institutional Factors

This model aims to explore the role of state-institutional factors on inequality in Lao PDR by investigating two key factors, the government expenditure, and infrastructure development. In overall, as it is illustrated in Table 5.1 (column 5), the model is statistically significant with a 99 percent of the confidence interval. The model could explain the variation of Gini index by 44.56 percent. Furthermore, all of the independent variables are positively and significantly associated with Gini index. The detail is discussed below.

Government Expenditure: according to Table 5.1 (column 5), government expenditure on education and health is highly significant in explaining Gini Index. It is surprising that government expenditure positively affects inequality, which means that an increase in government expenditure on these sectors per capita leads to an increase in inequality. This result seems not in line with many works that show government expenditure on two sectors would have a redistributive effect and

would negatively affect inequality. However, the data of government expenditure on the two used in this study was a total expenditure, including both recurrent expenditure and capital expenditure. Thus, the non-redistributive purpose of the spending could positively affect inequality. Moreover, as it is illustrated in Table 5.2, capital expenditure and spending on wage and salary of civil servant captured a significant proportion of all expenditure. Regarding the impact of the salary of civil servant expenditure on income distribution, the middle class is likely to directly benefit most (salary) while the poor may only benefit indirectly from the public services. Thus, the distribution becomes unequal in particular between the middle class and the lower. Based on the composition of expenditure, capital expenditure might play a role on this effect because expenditure on health may be only concentrated on building, doctor wage, operation, and maintenance cost while an access to health service of people in nationwide might be less impacted by this spending. This is similar to spending on education, which the spending focused on building, the salary of teacher and operation cost, the effect on distribution maybe appear in the long-term.

Table 5.2 Composition of Lao Government Expenditure on Education and Health in Three Fiscal Years

	2002/03		2007/08		2012/13	
	Allocation	Percent	allocation	Percent	Allocations	Percent
Total Expenditure	417231.91	100.00%	712475.71	100.00%	2935620.96	100.00%
Total Recurrent Expenditure	173841.29	41.67%	570011.95	80.00%	2751910.55	93.74%
Wage, salaries and benefits	124564.84	29.86%	457180.95	64.17%	2292312.05	78.09%
Operation and Maintenance	12321.36	2.95%	25717.3	3.61%	206775.72	7.04%
Subsidies and transfers	36955.09	8.86%	8844.96	1.24%	63504.48	2.16%
others	0	0.00%	78268.74	10.99%	189318.3	6.45%
Total Capital Expenditure	243390.62	58.33%	142463.76	20.00%	183710.41	6.26%

Source: Official Gazette, Ministry of Finance of Lao PDR

Infrastructure Development: percent of an access to the road in the dry season and electricity of Lao Households in provinces exhibits a significant and positive relationship with Gini Index. Unexpectedly, the variables of infrastructure development are positively associated with inequality instead of a negative sign, meaning that infrastructure development increases inequality. The results are not in line with Fan et al. (2002), positing that more access to the road or electricity would enhance the ability of the people in the disadvantaged region to engage in the income cycle, then, inequality becomes narrower. Furthermore, in terms of the effect of infrastructure on the poor in Lao PDR, Byoungki (2007) addressed that improvement of access to road and electricity negatively affected the poverty headcount rate. This happen because of the increase in access to these infrastructure established market access, increase non-agriculture employment, labor mobility and farm and non-farm productivity for the low-income group particularly for those who were in rural, then their livelihood improved. However, according to the result of this study in table 4.2, the impact of infrastructure development on inequality is opposite to its effects on poverty. However, as Bajar and Rajeev (2016) gave the explanation for the positive relationship between inequality and infrastructure development in the context of India that commercial utilization of accessibility is a key driver. For instance, mostly the lower income group only utilizes electricity for basic need while the rich tend to use it more in productive activity. In case of Lao PDR, the mechanism may be similar because the direct benefit of accessibility mostly goes to higher income class, such as profit from the construction of road and power network, commercial usage of access (transportation business, commercial business, modern agri-business, large industrial firm and so forth). This is just a basic explanation without any empirical evidence. In short, the infrastructure development (road and electricity) increases inequality in Lao PDR.

CHAPTER 6

CONCLUSION AND POLICY IMPLICATION

6.1 Summary

The purpose of this study is to find the determinants of the rising inequality in Laos. In overall, the result of this study found that, since the economic reform, inequality in Lao PDR has risen due to the economic environment has changed, as it shifts toward a market-oriented economy. The economic reform, which has mainly undergone the marketization and internationalization, is found to be a triggering point of inequality. The result of the analysis on the trend of inequality and economic development, discussed in chapter 4, suggested that a fluctuation of inequality in Laos and economic openness (FDI and Trade openness) are well correlated. The rapid growth and more openness in two led to more inequality. Moreover, the result from the empirical analysis on the determinants of the rising inequality, by using panel data of Lao provincial data over 2002, 2007, and 2012, supports the result of the first finding. In summary, both economic development and internationalization are positively related to inequality, and the Kuznets' curve could not be captured in this study. Besides, the government role in education, health, and infrastructure development (Road and Electricity) were unexpectedly found to have a positive relationship with inequality.

In short, there were several factors found to be the determinants of the rising inequality. The income level, structural change (economic activity in agriculture sector), educational expansion (year of schooling), internationalization-globalization (FDI), state-institutional role (spending on education and health, access to road and electricity) are key determinants to the rising inequality. None of these determinants has established a negative relationship, meaning that all of these determinants perhaps cause inequality.

6.2 Policy Recommendations

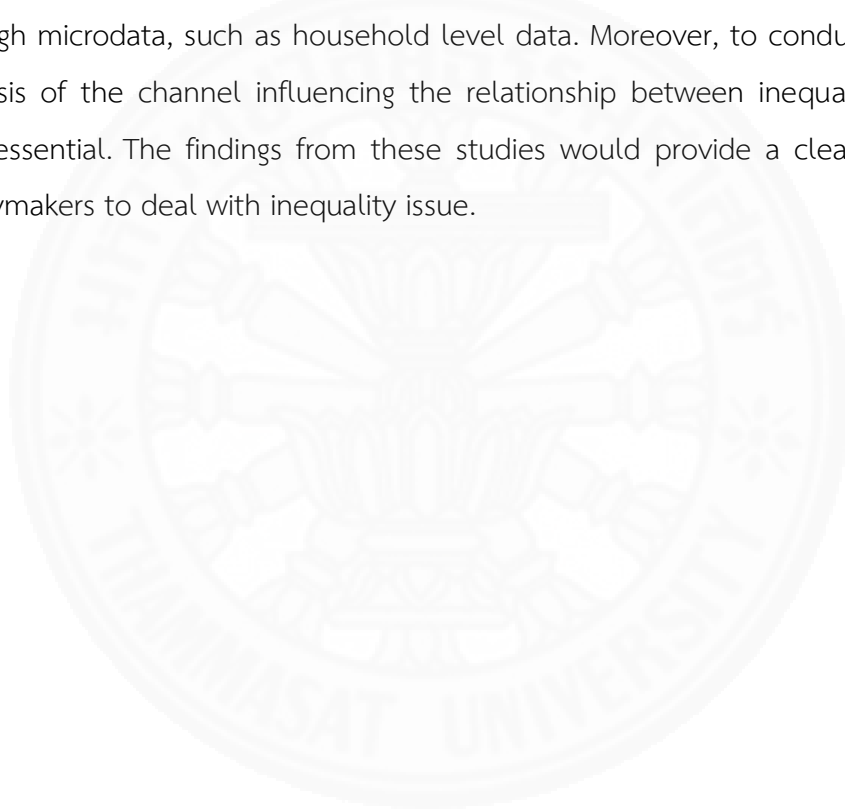
Based on the result of this study, there are some desirable ways to mitigate the inequality issue in Lao PDR. Firstly, to prescribe abandoning government expenditure on health and education, though found to be positively correlated with inequality, may not be a proper choice. Instead, reconsidering about it as a redistributive function is the recommended one since it would encourage pro-poor growth, by making sure of its effect on the livelihood of people who are at the bottom.

Secondly, in terms of shifting of labor from agricultural sector to the non-agricultural sectors, it is impossible and unbeneficial to keep people in the agricultural sector. Nevertheless, reducing the time of the shifting is possible by promoting agricultural productivity and establishing appropriate environment for the new sectors, since these would lower the demand for labor of agriculture sector and increase the labor supply for other sectors. This dynamic will improve the income distribution.

Thirdly, according to the result, even though education expansion, seems to have a negative effect on income distribution at this stage of development, future investments on education remains important because human capital is a key determinant of economic growth as commonly accepted. However, in terms of mitigating inequality, to consider about an equality in access to quality education of all class is necessary. Fourthly, in case of FDI, resource sector and hydropower may have some limitations on distribution of the income because capital-intensive nature mainly employs skilled labor. Then, to diversify FDI to other sectors to and to Lao regions which most of the people can possibly take a part are also preferable. Moreover, since only state is the only stakeholder over the ownership of natural resources, the government's redistributive role would be the most necessary choice in order to cope with inequality issue. Finally, infrastructure development and promotion of the commercial utilization to all people are equivalently essential because access alone cannot always guaranty equal benefit for all.

6.3 Recommendations for Future Study

Moreover, the result of this study is likely to raise a question rather than to provide a solution to the inequality issue. The dynamic of relationships between the determinants and inequality found in this study have not been yet explained. Further studies are, therefore, necessary to examine individual factor and its mechanism. Especially, in the case of infrastructure development and inequality, the justification as to the relationship of the two would potentially be investigated through microdata, such as household level data. Moreover, to conduct an in-depth analysis of the channel influencing the relationship between inequality and FDI is also essential. The findings from these studies would provide a clearer picture for policymakers to deal with inequality issue.



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APPENDICES

APPENDIX A

Lao Expenditure and Consumption Survey (LECS) Questionnaire

(Only income and Consumption Expenditure are Selected)

1. Diary Sheet for Household Transactions

(all expenditures, all income, all consumption of own produced food, all own produced food given away)

For household			For NSC	For household				For Enumerators							
Date	Item description	Unit of quantity	Code unit of quantity	Quantity	Value in KIP	Kind of transaction. 1 = Expenditure in cash or in kind 2 = Own consumption of own produced food 3 = Own produced food given away 4 = Income in cash or in kind (Circle code)				Bought where? (if expenditure) 1 = In Lao 2 = Abroad (Circle code)		Purpose: a = Agriculture h = Household b = Business (Circle code)			Item code
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	

XV. Income and transfers (Last week)

1 Has anyone in your household during the last month received any income, transfer or remittances in cash or in kind? Which person and how much?

Name ↓	ID Code ↓	Main income			Property income				Transfer and other benefits						
		<i>Do NOT include income from agricultural production or household business</i>			Interest and royalties	Dividends	Other rent	Land rent	Pension and life insurance	Remittance/ gifts in cash fr Laos	Remittance/ gifts in cash fr abroad	Remittance/ gifts in kind fr Laos	Remittance/ gifts in kind fr abroad	Other current tranfers Specify	
Wages, salaries in cash	Social security	Wages, salaries in kind	800	801											802
Item nr															
		Amount in KIP													

APPENDIX B
Data Set Used in Chapter 5

ID	GINI	ROAD (%)	Year	Agriworkforce (%)	Electricity (%)	committed FDI (a million \$US)	Popgrowth (%)	percap Income (a thousand Kip) CPI Deflator 2002	Literacy	Govexp on edu and Health percap (a million kip) CPI Deflator 2002
Attapue	0.29	85	LECS 2 2002-2003	68	16	0.55	2.75	7.44	71.05	0.0776
Bokeo	0.29	76	LECS 2 2002-2003	84	14	0	2.77	22.15	46.53	0.0943
Bolikhamxai	0.28	74	LECS 2 2002-2003	63	54	2.45	2.78	13.89	77.56	0.0477
Champasak	0.3	64	LECS 2 2002-2003	63	26	3.31	2.77	25.60	70.79	0.0563
Huaphan	0.29	41	LECS 2 2002-2003	81	26	0.66	2.77	6.01	54.30	0.108
Khammuane	0.29	78	LECS 2 2002-2003	76	48	166.78	2.77	10.03	57.57	0.0736
Luangnamtha	0.25	32	LECS 2 2002-2003	82	23	0.66	2.74	21.50	38.93	0.1358
Luangprabang	0.32	53	LECS 2 2002-2003	84	34	0.66	2.77	11.37	54.98	0.1642
Oudomxai	0.25	51	LECS 2 2002-2003	94	9	0.05	2.76	5.87	48.68	0.1127
Phongsaly	0.22	32	LECS 2 2002-2003	92	23	0	2.76	3.24	38.31	0.066
Saravane	0.27	83	LECS 2 2002-2003	73	18	4.73	2.78	20.00	44.86	0.0798
Savanakhet	0.31	96	LECS 2 2002-2003	73	35	1.27	2.77	14.88	60.26	0.055
Vientiane Province	0.32	93	LECS 2 2002-2003	69	54	1.34	3.06	22.89	74.29	0.07
Vientiane Capital	0.36	100	LECS 2 2002-2003	31	100	38.15	2.76	43.73	89.84	0.0497
Xayabury	0.35	77	LECS 2 2002-2003	76	28	0.19	2.78	18.64	73.99	0.111
Sekong	0.31	74	LECS 2 2002-2003	83	42	0	2.84	16.42	48.00	0.165

ID	GINI	ROAD (%)	Year	Agriworkforce (%)	Electricity (%)	committed FDI (a million \$US)	Popgrowth (%)	percap Income (a thousand Kip) CPI Deflator 2002	Literacy	Govexp on edu and Health percap (a million kip) CPI Deflator 2002
Xiengkhouang	0.32	83	LECS 2 2002-2003	82	41	23.03	2.77	12.84	55.93	0.0754
Attapue	0.32	100	LECS 3 2007-2008	70	33	1.32	2.57	9.94	79.43	0.050774
Bokeo	0.3	95	LECS 3 2007-2008	84	54	26	2.66	18.10	55.00	0.048473
Bolikhamxai	0.34	100	LECS 3 2007-2008	66	74	61.02	2.86	24.72	80.67	0.05286
Champasak	0.29	100	LECS 3 2007-2008	65	67	21.79	1.44	26.90	75.59	0.043226
Huaphan	0.28	100	LECS 3 2007-2008	86	44	6.52	2.49	8.90	57.71	0.086194
Khammuane	0.31	100	LECS 3 2007-2008	75	74	14.7	2.16	18.91	63.68	0.049161
Luangnamtha	0.3	100	LECS 3 2007-2008	64	33	5.22	2.49	10.30	39.86	0.060387
Luangprabang	0.31	100	LECS 3 2007-2008	68	65	44.3	1.91	10.66	65.65	0.045161
Oudomxai	0.31	100	LECS 3 2007-2008	84	33	7.95	2.49	10.20	53.91	0.050108
Phongsaly	0.3	100	LECS 3 2007-2008	77	38	3.2	1.19	18.37	38.87	0.054624
Saravane	0.3	100	LECS 3 2007-2008	88	50	2.17	2.48	23.86	47.85	0.042151
Savanakhet	0.34	69	LECS 3 2007-2008	64	100	82.6	1.87	28.95	68.67	0.108387
Vientiane Province	0.32	100	LECS 3 2007-2008	61	84	35.7	2.86	21.39	75.10	0.059785
Vientiane Capital	0.38	100	LECS 3 2007-2008	27	100	282.62	1.96	38.24	91.27	0.048258
Xayabury	0.42	100	LECS 3 2007-2008	63	60	11.35	2.04	17.87	79.90	0.07828
Sekong	0.38	100	LECS 3 2007-2008	76	29	9.51	2.87	7.39	50.98	0.093462
Xiengkhouang	0.38	100	LECS 3 2007-2008	76	40	2.62	2.32	12.34	66.10	0.061505
Attapue	0.33	89.6	LECS 4 2012-2013	52.5	86	11.23	2.37	35.46	78.07	0.183713

ID	GINI	ROAD (%)	Year	Agriworkforce (%)	Electricity (%)	committed FDI (a million \$US)	Popgrowth (%)	percap Income (a thousand Kip) CPI Deflator 2002	Literacy	Govexp on edu and Health percap (a million kip) CPI Deflator 2002
Bokeo	0.29	89.9	LECS 4 2012-2013	75.4	72.5	7.51	2.4	17.04	55.68	0.152971
Bolikhamxai	0.36	84.3	LECS 4 2012-2013	68.3	90.3	41.21	2.64	38.57	82.42	0.126231
Champasak	0.34	94.1	LECS 4 2012-2013	46.7	96.1	375.1	1.3	35.45	76.32	0.114884
Huaphan	0.28	40.5	LECS 4 2012-2013	86.9	69.3	18.2	2.46	15.37	62.50	0.152434
Khammuane	0.3	75.9	LECS 4 2012-2013	59.6	88.2	71.5	1.95	30.84	65.87	0.113356
Luangnamtha	0.36	78.7	LECS 4 2012-2013	76.8	68.1	20.32	2.22	21.01	39.11	0.156621
Luangprabang	0.31	71.2	LECS 4 2012-2013	66.9	69	16.65	1.71	23.38	62.59	0.132994
Oudomxai	0.3	46.8	LECS 4 2012-2013	73.2	49.5	25.7	2.22	24.61	50.79	0.187804
Phongsaly	0.27	59.1	LECS 4 2012-2013	92.7	62.1	7.12	0.99	21.26	43.93	0.16412
Saravane	0.34	78.6	LECS 4 2012-2013	79.8	81.7	13.34	2.35	16.22	50.26	0.102434
Savanakhet	0.34	82	LECS 4 2012-2013	67.2	74.2	188.8	1.66	28.09	63.69	0.251839
Vientiane Province	0.31	90	LECS 4 2012-2013	56	90.4	79.8	2.64	31.03	77.18	0.141143
Vientiane Capital	0.38	100	LECS 4 2012-2013	12.4	100	540.75	1.72	38.59	90.88	0.078381
Xayabury	0.34	94.2	LECS 4 2012-2013	63.7	78.4	19.99	1.85	51.19	75.34	0.193831
Sekong	0.4	89.4	LECS 4 2012-2013	78.4	53.9	4.6	2.68	17.99	56.69	0.236276
Xiengkhouang	0.35	68.1	LECS 4 2012-2013	61.8	62.6	77.43	2.36	47.71	66.51	0.154641

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