Doctoral Dissertation

Domestic Savings Mobilization: A Tool for Closing Investment-Savings Gap in Lao PDR

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Doctoral Program in International Relations
Graduate School of International Relations
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Domestic Savings Mobilization: A Tool for Closing Investment-Savings Gap in Lao PDR

（ラオスにおける国内貯蓄の活用

－貯蓄・投資ギャップ解消に向けた考察と提言－）

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立命館大学大学院国際関係研究科

国際関係学専攻博士課程後期課程

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Abstract of Doctoral Dissertation

Domestic Savings Mobilization: A Tool for Closing Investment-Savings Gap in Lao PDR

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Although the country has experienced high economic growth over the past decade, the growth has been fragile owing to substantial external financial resources and capital to accommodate current account deficit which allows I-S gap to be filled. Too much reliance on external capital and financial resources, especially short-term capital flows, is not only sustainable but also highly vulnerable to the crises. Lao PDR' domestic savings rate has been relatively low, and the investment-savings gap has been largest compared with other ASEAN countries.

This research investigates the potential sources of domestic savings mobilization and how the savings are mobilized based on institutional framework and lessons drawn from experiences of Japan, Singapore, and Malaysia. This is the first attempt for Lao PDR to shed light on mobilizing domestic savings and allocating the mobilized savings to prioritized investments. Additionally, impacts of different categories of foreign capital net inflows on economic growth and domestic savings are examined. Therefore, this research examines the impact of different categories of foreign capital net inflows (FDI, Portfolio investment, and other investment) as well as domestic savings on economic growth in 6 ASEAN countries, namely Indonesia, Malaysia, Philippines, Singapore, and Thailand, and Lao PDR for the periods 1990-2015 and 2000-2015, based on regression analyses, utilizing Panel and Cross-section data. The results point to the importance of domestic savings to be effectively mobilized and channeled into productive and prioritized investments to attain sustainable economic growth.

Mobilizing domestic savings in Lao PDR is not easy feat. Government should take initiatives and actions on a broad range of areas, including improving access to formal financial services, providing appropriate financial services for the rural poor and cheap credits to SMEs, the core sector of the economy. Moreover, greater efforts are needed to establish the policy-based financial institution for the development of prioritized investments in each phase of development. Besides, necessary regulatory and enforcement frameworks are required to ensure that any mobilized financial resources are channeled into specific national priorities that will advance inclusive and sustainable economic growth.

博士論文要旨

ラオスにおける国内貯蓄の活用
－貯蓄・投資ギャップ解消に向けた考察と提言－

立命館大学大学院国際関係研究科

国際関係学専攻博士課程後期課程

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ラオスは過去 10 年にわたり比較的高い成長率を達成してきたものの、経済成長は外資の導入に依存した脆弱なものであり、長期的に維持可能な成長は達成するかは不透明である。近年では特に経常収支の赤字額は拡大する中、国内貯蓄・投資ギャップは短期資本の流入に依存しており、経済危機を発生させるリスクを常に伴っている。現在ラオスの国内貯蓄率は ASEAN 諸国の中でも最も低水準にあるため、その現状を打開することが求められている。

本論文は国内貯蓄を有効に活用して発展してきた日本、シンガポール、マレーシアなどアジア諸国での制度・枠組みを参考として本課題に取り組むものである。本研究はラオスにおいて国内貯蓄をいかに有効に活用して優先的な分野に振り向け発展できるかに関する初めての研究の一つである。本研究では、資本流入に関してそのカテゴリー別に成長率および国内貯蓄率の上昇に関係が深いかについて考察するため、ASEAN6 各国（インドネシア、シンガポール、タイ、フィリピン、マレーシア、ラオス）のクロスセクションでのパネルデータに基づき 1990-2015 年及び 2000-2015 年を対象として計量分析を実施した。その結果、国内貯蓄率が高い国では生産的な投資に活用され、その結果維持可能な高い成長率を達成するという正で有意な結果が得られ、経済発展における国内貯蓄の需要性が改めて確認された。

現在のラオスでは国内貯蓄率を引き上げることは容易ではない。政府は国内のすべての層に行き渡る全般的な経済活動の活性化を図る政策を導入するため、特に貧しい農村地域や中小企業向けの金融機能の強化が必要である。そのためにはこうした国全体の優先的かつ重要な分野における本格的な政策金融機関の設立が望まれる。一方、こうした包括的・維持可能な成長目的を達成するための法的枠組みの整備が必要であろう。

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Introduction

Savings and investment are the two key intermediate macro variables with micro foundations, playing an important role in economic growth, stabilizing inflation, and employment promotion in the context of developing countries in particular. The conventional wisdom is that domestic savings would contribute to economic growth subsequently resulting in capital accumulation, which in turn determined by domestic savings (Solow 1956). Increasing investment rate is considered to be necessary for inducing growth of per capita income. Theoretical models such as Rostow's stages growth model, the Harrod–Domar model emphasized that the key drivers of economic growth are the increase in savings, investments as well as capital stock and capital productivity (Rostow 1959), (R. Harrod 1939), (Domar 1946). Every country therefore needs capital to finance investments to spur growth of economy. Therefore, many economists have advocated positive roles of savings in the growth process irrespective of its origin whether it is mobilized domestically or coming from overseas. If domestic savings were not sufficient, foreign savings would be mobilized.

The standard neoclassical growth models assuming that foreign savings perfectly substitute of domestic savings in financing investments, suggesting that domestic saving rates are supposed to have no impact on investments and growth rates of countries' economies. However, these models fail to explain the divergence of growth rates between emerging market economies with low saving rates and East Asian countries with high domestic saving rates.

Furthermore, empirical evidences indicate that the sustainability of growth faces a significant risk when Investment-Savings gap or the share of foreign savings in total financing in developing countries is excessively high. In other words, countries with substantial external reliance on the foreign capital in financing domestic investments, are observed to be more vulnerable to external shocks in terms of their growth performances. This finding is more pronounced for low-middle income countries and countries with high reliance on external financing for investments. Additionally, countries with low and declining self-financing ratios have been more affected by the recent global financial crisis (Ganioğlu and Yalçın 2013). Unlike theoretical models that hardly suggest a link between Investment-Savings gaps and growth rates of countries, empirical studies provide robust and rich evidence about this linkage. Developing countries with higher self-financing ratios, which were financed by domestic

savings without reliance on external borrowing, grew faster than those with the low self-financing ratio (Prasad, et al. 2004) (Aghion, et al. 2009) (Aizenman, Pinto and Radziwill 2007). In addition, the theoretical framework provided by Aghion et al. (2009) highlights the role of domestic savings in attracting foreign capital and contributing to growth. Within this framework, domestic savings are treated as collateral for attracting growth-enhancing foreign capital to countries that are far away from technological frontier, for instance, low-middle income countries with low saving rates. More specifically, low domestic savings countries which are in need of foreign capital and far away from technological frontier may enhance their growth performance by raising domestic savings through which the extent of asymmetric information is minimized and thus foreign investors feel confident about investing in good projects. This would ease the adoption of new technology by local firms and consequently leads to better growth performance. In short, the transmission mechanism proposed by Aghion et al. (2009) is another channel through which a rise in domestic savings may enhance the growth performance of countries that are far away from technological frontier.

The development process of many developing and under-developed countries is constrained by insufficient domestic resources. Therefore, foreign savings are encouraged via unrestricted capital flows to meet up the two conventional gaps: Investment-Savings (I-S) gap and export-import gap. Although the foreign capital inflows can supplement domestic savings, the volatile character of the global capital market couple with the wake of global economic malaise curtails the availability of sustained cross-border capital inflows. In addition, reliance on Official Development Assistance (ODA)[1] and foreign direct investment (FDI) as well as workers' remittance to bridge the gaps would not attain sustainable economic growth. Official Development Assistance (ODA) is concentrated and dependent on the priorities of development partners rather than those of the recipient countries, and FDI tends to seek for short-term profits in sectors which government provides incentives. It was observed that foreign aid enhanced economic growth in only in host countries with specific policies (Burnside and Dollar 2000), and so too were portfolio and direct investments (Ferreira and Laux 2009) (Borensztein, De Gregorio and Lee 1998).

Therefore, domestic savings remain a major source of investment in developing countries (Basudeb and Mavrotas 2008). Mobilization of domestic savings is one of major

[1] which includes grants and loans

policy issues for developing countries to attain country's reliance on investment, sustainable and pro-poor growth. Therefore, for self-reliance and sustainable growth objectives, mobilization of domestic resources and their efficient utilization should be the two major policy-oriented focuses.

Like other developing countries, domestic savings level of Lao PDR is relatively low compared to other developing countries. Gross domestic saving rate is only 16 percent of GDP on average during 2000 and 2015 period, while those of Vietnam is 27 percent, Thailand 30 percent, Indonesia 32 percent, Malaysia 40 percent, and Singapore 50.5 percent. Although gross domestic saving rate of Lao PDR has gradually increased from 2.44 percent in 2000 to 19.69 percent in 2006 and 20.52 percent in 2009, it turned to dramatically decline to 16.66 percent in 2013 then increased to 23.57 percent in 2015 (The World Bank 2016). The unstable domestic saving level of Lao PDR is closely related to the fluctuation of foreign capital inflows, especially FDI in the natural resource-related sector and other investment as well as the increase in foreign banks presence in the economy since 2000s.

Investment-Savings gap in Lao PDR is relatively large compared with other ASEAN countries. The gap was 14.12 percent of GDP in 2000 then widened to 16.4 percent in 2004 then declined to 8.85 percent in 2013, and the gap has shown the rising trend in recent years. The huge gap between savings and investment in Lao PDR is attributed to low domestic savings rate owing to low income level and underdevelopment of the financial sector.

The 8th national five-year socio-economic development plan for 2016-2020 set a target for annual economic growth of not less than 7.5 percent. The government will strive to graduate Lao PDR from Least Developed Country status by 2020, and will strive to increase per capita Gross Domestic Product (GDP) from the current US$1,970 to US$3,190 by 2020, whereas the Lao population is expected to exceed seven million. Another major goal is the national poverty rate to fall below 10 percent. To finance the five-year plan and achieve these targets, Lao PDR needs investment capital of Lao Kip223,000 billion or 30 percent of GDP. Of this total amount, government-funded investment to be accounted for 9-11 percent of total investment (of government-funded investment, 12-16 percent to be sourced from grants and loans). Private investment by domestic and foreign investors is set to cover 54-57 percent while investment from the banking sector is set to account for 19-21 percent.

The shortage of domestic capital compels the government of Lao PDR to mobilize external funds for investment. During 2006 and 2010 period, 46.41 percent of total investment, was financed by Official Development Assistance in the forms of grants and loans, while investment funded by government's budget accounted for only 8.9 percent (Ministry of Planning and Investment 2011). Besides, FDI dominates investment in the country. Over the past 25 years, from 1989 to 2014, foreign direct investment accounted for 74.22 percent of total investment while domestic private investment and government funded investment accounted for only 18.24 percent and 7.54 percent respectively (Investment Promotion Department, Ministry of Planning and Investment 2015).

Financing source for public investment is mainly from external borrowing. Highly dependent on external financing source for socio-economic development, especially foreign borrowing of the government may lead the country to confront with debt crisis due to high level of external indebtedness which is the highest compared with other ASEAN countries, in couple with chronic trade deficit and the increasing outward transfer of corporate earnings of foreign investors and income payments of employees working for FDI projects.

Lao PDR has been experiencing high economic growth, which is considerably higher than ASEAN countries with the average GDP growth rate is 7.9 percent per annum during the implementing period of the 6th National Socio-Economic Development Plan between 2006 and 2010, and 7.8 percent per annum between 2011 and 2015, and GDP per capita increased from US$324 in 2000 to approximately US$2,353 in 2016[2]. However, the high growth rate is relatively volatile as it was driven by natural resource sector: mining and electricity generation.

Poverty rate remain high, especially in rural areas where over three quarters of the population reside in and engage in subsistence agriculture. Additionally, the United Nations for Development Program/DESA-CDP has released their 2015 review for LDC inclusion/graduation, indicating that Lao PDR does not meet any graduation criteria (UNDP/DESA 2015).

Despite Lao PDR has been maintaining high economic growth, low inflation and a stable exchange rate, serious macroeconomic challenges remain. First, Lao PDR has faced chronic deficits in budget and trade balances. Over the 2011-2013 period, the budget (excluding

[2] World Bank/World Development Indicators

grants) and trade deficit accounted for approximately 9.26 percent and 0.62 percent of GDP, respectively. The budget deficit is mainly financed by Official Development Assistance (ODA), whereas the trade deficit is financed by FDI and remittances. The fiscal situation is not strong in Lao PDR and the chronic fiscal deficit could accelerate inflation and lower the value of the Lao currency – the Lao Kip, potentially leading to the type of economic instability experienced during the Asian financial crisis.

Lao PDR also faces a high external debt burden. Accumulated external debt accounted for more than 45.56 percent of GDP in 2015. If Lao PDR becomes too dependent upon foreign finance, potential difficulties meeting its debt obligations could cause an external debt crisis and lead to macroeconomic instability. In addition, as the Lao economy is dependent on the resource sector, this could have a negative long-term impact in the form of the Dutch disease, which is characterized by the following four features: (1) real exchange rate appreciation, (2) declining input in non-booming sectors, (3) declining exports and output in non-booming sectors and finally (4) declining real GDP.

Financial sector in Lao PDR is dominated by banking sector, of which the three state-owned commercial banks account for approximately 46 percent of total banking sector' assets in 2015. The banking sector is inhabited by the state commercial banks, which are not fully performing important banking functions. Most of the deposit is mobilized through the state-owned commercial banks, and much of the mobilized deposit is allocated to the public sector including state-owned enterprises. In addition, the quality of service of the banks remains weak, leading to the lack of progress in financial deepening (Asian Development Bank, 2011). Since the Law on Commercial bank was enacted in 2007, foreign bank branches and affiliates establishment have rapidly increased in the economy, leading to high competition in domestic banking sector. The rise in foreign banks in the country has not been beneficial for local people, especially small and medium enterprises (SMEs). Those commercial banks located in urban areas especially in Vientiane Capital, are reluctant to extend services to other provinces, and most of enterprises having access to bank financing are large enterprise, while SMEs and micro level enterprises have limited access to bank services. Additionally, the presence of high lending interest rates in Lao PDR obstructs SMEs to access to formal financial resource. Therefore, they alter to use informal financial provision which charges higher interest rate on loans.

Additionally, the policy-based lending bank in Lao PDR is different from those of other foreign countries. The weak policy-based lending facility which provides short-term to medium-term loans to micro and rural to support for poverty eradication policy of the government, is not sufficient for the country's current stage of economic development. Moreover, the bank's non-performing loan level is relatively high, perhaps the highest among banks in the country, suggesting that the bank's effficiency and management quality should be improved to serve as an efficient policy-based lending facility in the future.

The above-mentioned situation of Lao PDR signifies the need for the country to leverage domestic finacing sources in order to fill the resource gap, reduce exterrnal reliance, and enhance pro-poor and sustainable economic growth. This research is the first attempt for Lao PDR to shed light on raising domestic savings mobilization and allocating the mobilized savings to the investments in prioritized sectors through efficient resource transfer mechanisms.

Many countries have experienced in domestic savings mobilization to finance public investments. Postal Savings System (PSS) and Fiscal Investment and Loan Program (FILP) of Japan exemplify the government financial intermediary system of mobilizing savings from ordinary citizens and channeling the mobilized funds into national development measures. In addition, the mandatory savings schemes contributing to high domestic savings rate are exemplified by those adopted by Singapore and Malaysia. The Singapore's experience, the compulsory savings scheme by establishing the Central Provident Fund (CPF), the high rate of contribution in couple with the rising wages, the Central Provident Fund (CPF) system has been an important contributor to Singapore's high savings rate (Asher 1995). Another example of domestic savings mobilization through compulsory savings scheme is the Employee's Provident Fund (EPF) of Malaysia. Besides, Malaysia also mobilizes savings through the Bank Simpanan Nasional or National Savings Bank which took over the functions of the former Post Office Savings Bank and provide improved facilities and services to its depositors.

Although many empirical studies have figured out the evidences to improve domestic savings rate, and experiences of many other countries have shown the conditions and success in domestic savings mobilization and allocation mechanisms, those may not fully appropriate for the case of Lao PDR to undertake. Therefore, investigation of specific conditions is made in this study to find the proper mechanism for the country to accelerate domestic saving level.

Since investment in Lao PDR is attributed to FDI as well as Official Developent Assistance (ODA) as the major financing souces for investment, this study is the first attempt aiming at investigating the potential sources of domestic savings mobilization in Lao PDR to finance prioritized investments. This study further analizes impacts of different categories of foreign capital net inflows (FDI, Portfolio Investment, and Other investment) on real GDP per capita growth rate and on gross domestic savings rate in 6 selected ASEAN countries: Indonesia, Malaysia, Philippines, Thailand, Singapore, and Lao PDR.

On one hand, this study analyzes and draws lessons from the selected countries' experiences in domestic savings mobilization and effective allocation of the mobilized fund to the most productive investments or investment in prioritized sectors to figure out the evidences and appropriate ways for Lao PDR to undertake.

The structure of the remaining part of this dissertation is as follows:

Chapter 1: Domestic financial shortage and Economic development issues in Lao PDR. This chapter gives an overview of recent and current situation of domestic savings and economic performance of the country. Due to low domestic savings mobilization, the country has substantially relied on external financing for social-economic development in forms of both Official Development Assistance (ODA) and Foreign Direct Investment (FDI), as a result, the country's GDP has grown at the high rate, especially since the late 2000s due to the influx of FDI in mining and electricity generation sectors. Despite the high economic growth, the growth remains fragile and unsustainable. This is due to substantial reliance on natural resource related sector such as mineral excavation and electricity generation, which do not create employment opportunities for majority of the population. In addition, the inflows of foreign capitals put pressure on export sector as resulted from the appreciation of local currency.

Small and Medium Enterprises (SMEs) dominating domestic private sector remain at the early stage of development, and have been facing difficulties in getting credits from banking sector, and lack of public financial support. Interest rate on loans provided by banks are fairly high, and require high value of collaterals as well as complicated application procedures. Therefore, most of SMEs rely on microfinance as well as informal financial sectors and informal money lenders, charge interest on loans at even higher rate than those charged by commercial banks.

Additionally, banking services extension have not reached the majority of the households in the country, and most of deposits mobilized are short-term deposits, whereas there is high demand for long-term credits for investment. Therefore, there should be an effective system to mobilize domestic savings and public financial support, such as low interest rate credits to SMEs as well as prioritized investment projects.

Chapter 2: Asian experiences in domestic savings mobilization and literature review on impacts of foreign capital flows on economic growth and domestic savings. This chapter analyzes the experiences of selected Asian countries, namely Japan, Singapore, and Malaysia in mobilizing domestic savings and allocating of the mobilized savings. The selected countries mobilized domestic savings through two different schemes such as voluntary and compulsory schemes. Voluntary savings can be done as per requirement and the needs of the individuals or families. Money can be deposited in banks, post offices, mutual funds, shares, and other institutions. The interest rate varies from time to time, and differ in various institutions. It is generally fixed depending upon the duration of the deposited amount. The compulsory savings are those that individuals and institutions are compelled to save as per government rules. This type of savings scheme is exemplified by the provident fund schemes and pension fund schemes.

In addition, due to globalization and financial liberalization, many countries have mobilized external capitals other than domestic funds. Therefore, this chapter also reviews past studies on impacts of foreign capital inflows on economic growth and domestic savings.

Chapter 3: Data and Methodology. This chapter examines the impact of different categories of foreign capital net inflows (which includes FDI, Portfolio investment, and other investment) on economic growth and domestic savings of 6 ASEAN countries, namely Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Lao PDR. The study is conducted for two periods: 1990-2015, and 2000-2015 based on regression analyses[3] utilizing panel and cross-section data of the selected ASEAN countries. The results show that at aggregate level, foreign capital inflows have positive impact on economic growth during the 1990-2015 period, however, the impact turns out to be negative in the recent period (2000-2015). In contrast, the aggregate foreign capital flows displace domestic savings in the two studied periods. At disaggregate

[3] Regression results based on Fixed-Effects estimation method which capture the influence of country's specific effect

level, only FDI has positive impacts on economic growth and domestic savings in the two periods while portfolio investment is not found to have any significant impact on growth and savings in the studied periods. Short-term capital flows, such as other investment is found to have significantly positive impact on economic growth during 1990-2015 period, whereas it is likely to displace domestic savings in the two periods. The positive relationship between short-term capital inflows and economic growth of the 1990-2015 period is associated with the voluminous inflow of the short-term capital in the early to mid-1990s. However, due to the volatile nature of short-term capital, the sudden stop of the capital inflows, followed by the large out flow of the short-term capital brought about the crisis in 1997. The results point to the importance of domestic savings to be effectively mobilized and channeled into productive investment. Besides, in the context of increasing global competition for FDI, developing countries should formulate policies to improve local skills and their human capital to enhance the countries' absorptive capacity to reap benefit from FDI.

Chapter 4: Policy recommendations. Viable effective mechanism for small savings mobilization and allocation of the mobilized savings is discussed in this chapter. In addition, policy recommendations for Lao PDR to ensure domestic fund to be tapped properly and effectively utilized for productive investments in prioritized sectors.

The last part of this dissertation is conclusion. This part concludes the research and addresses limitation of this research as well as the future research direction.

Chapter 1: Domestic financial shortage and economic development issues in Lao PDR

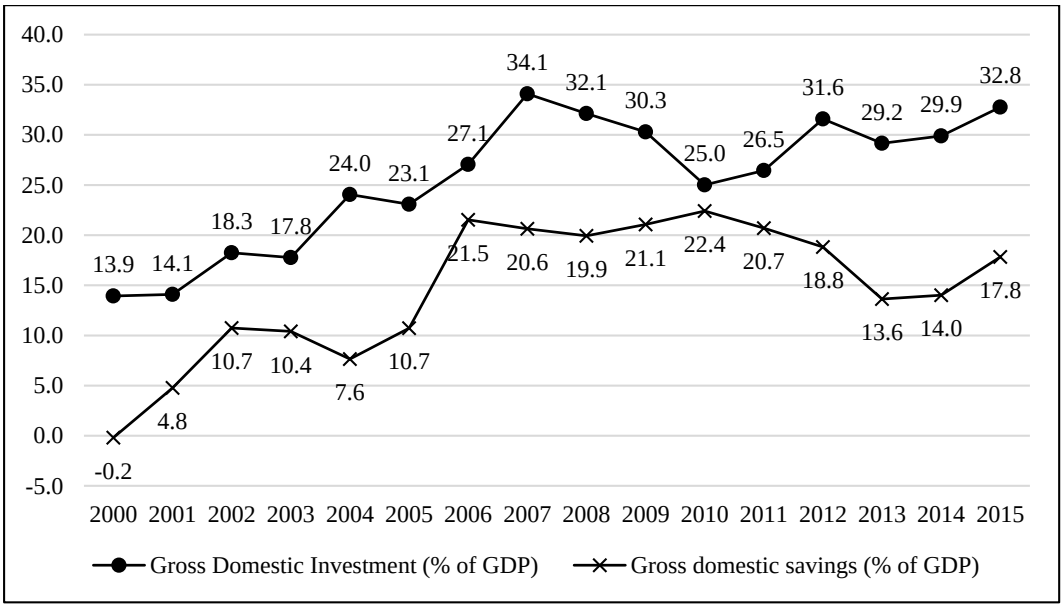
1. Domestic Financial Shortage

1.1 Investment-Savings (I-S) gap in Lao PDR

Lao PDR has been facing domestic financial shortage due to low domestic savings mobilization. Domestic savings rate is generally low, whereas investment rate is relatively high, resulting in large Investment-Savings (I-S) gap, bridged by foreign capitals.

Figure 1 clearly indicates that Investment-Savings (I-S) gap in Lao PDR is fairly large. During the 2000 and 2015 period, the investment level exceeded the domestic savings level. Annual gross capital formation (formerly gross domestic investment) was approximately 26 percent of GDP while gross domestic savings rate accounted for only 14.7 percent of GDP on average.

FIGURE 1: INVESTMENT-SAVINGS (I-S) GAP IN LAO PDR



Source: The World Bank, WDI 2016

Gross domestic savings rate of Lao PDR had increased from 10.7 percent of GDP in 2005 to 22.4 percent in 2010 then turned out to decline to 13.6 percent and 17.8 percent in 2013 and 2015, respectively. Although the domestic savings rate of Lao PDR has increased, it is considerably unstable and relatively low compared with other ASEAN countries. Moreover,

during the past five years, the Investment-Savings (I-S) gap has widened due to the decline in savings rate coupled with the increase in investment level, indicating the increase in foreign capital inflows.

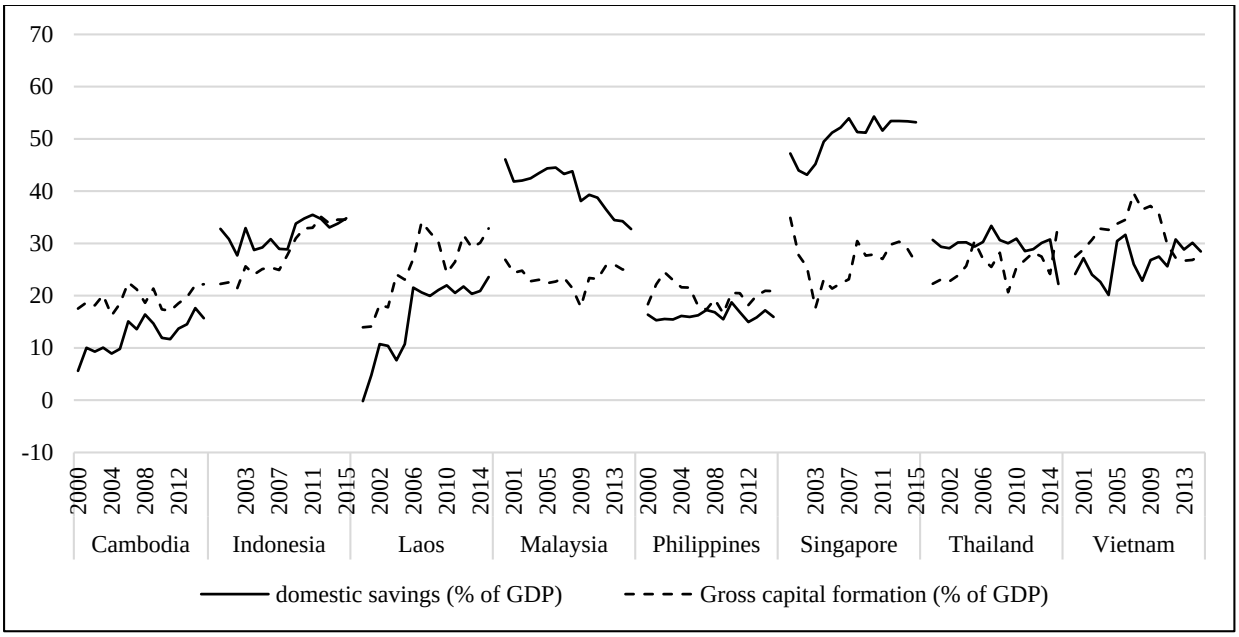
The savings rate is closely related to the inflows of foreign capital, especially FDI and other investment during the natural resource boom period which began in 2005 that mining and hydropower sectors have become the major sources of government revenue. As indicated in figure 1, before 2005, gross domestic savings rate of Lao PDR was relatively small, only 7.6 percent of GDP in 2004 then sharply rose to 21.5 percent in 2006 then turned out to fall to 13.6 percent in 2013. This is due mainly to the fall in global commodity prices, resulting in the fall in revenue from export of mining sector. In addition, the repatriation of corporate earnings of foreign investors as well as the outward income transfer of foreign employees under operating FDI projects, have resulted in the decline in gross domestic savings rate. Moreover, although FDI inflow has increased, corporate earnings from FDI projects are not retained in the country. The outward payment of primary income on FDI has increased from approximately US$ 19.9 million in 2001 to US$ 52.5 million and US$ 302.6 million in 2013 and 2015, respectively[4].

In terms of national savings or gross savings (calculated as gross national income less total consumption, plus net transfers), the rate is even lower than gross domestic savings rate, especially since the late 2000s when the large influx of FDI took place, indicating the gross domestic savings rate of Lao PDR is closely related to the fluctuation of FDI.

In cross-region comparison, gross domestic savings rate of Lao PDR is relatively low compared with other ASEAN countries. Singapore, and Malaysia are the countries which have high gross domestic savings rates, followed by Thailand, Indonesia, and Vietnam. Whereas the Philippines, Lao PDR and Cambodia are the countries with low domestic savings rates.

[4] The World Bank/WDI 2016

FIGURE 2: INVESTMENT-SAVINGS GAP, CROSS REGION COMPARISION



Source: The World Bank, WDI 2016

On the one hand, despite the low domestic savings rate, investment rate in Lao PDR is relatively high. As indicated in figure 2, the Investment-Savings (I-S) gap of Lao PDR is the largest among ASEAN countries. This would be due to the completely free capital and financial account regime like Lao PDR and Cambodia, as compared with those countries with some restrictions like Indonesia, Thailand, and even Singapore.

During the past sixteen years from 2000 to 2015, capital inflows have enabled investment to exceed savings level in Lao PDR, indicating the large inflows of foreign capital. Foreign currency reserves, especially in terms of foreign exchange, have increased from US$138.9 million in 2000 to US$972.3 million in 2015[5]. This has been fueled by financial account balance which mainly consists of inflows of direct investment and external borrowing as well as grants, indicating the fragile balance of payment that foreign currency reserves have been attributed to the inflows of foreign capitals rather than foreign exchange earnings from export. This is due to the volatile nature of foreign capitals, especially short-term capital flows such as loans (other investment) and portfolio investment that they are easily reversible as evidenced by experiences during the crises.

[5] Bank of Lao PDR's annual economic report 2000 and 2015

Due mainly to low domestic savings, the government has mobilized foreign capitals to finance investments, resulting drastically increase in foreign capital flows into the country. Foreign capital inflows have increased significantly since 2005, of which, foreign direct investment increased from US$27.7 million in 2005 to US$1,097.1 million in 2015. In addition, the flows of foreign direct investment have skewed to mining and electricity generation sectors, which do not contribute to employment opportunities for local people as expected. On the other hand, the inflows of short-term capitals, especially in recent few years, have increased sharply and exceeded the inflow of long-term capital such as direct investment. Other investment (including loans, trade credits, currencies and deposits) increased from US$307.3 million in 2012 to US$1,091.7 million in 2015, and portfolio investment increased from US$53.8 million in 2010 (the year that the Lao stock market was inaugurated) to US$514.8 million in 2015.

TABLE 1: FOREIGN CAPITAL INFLOWS INTO LAO PDR

Foreign capital inflows, Million US$	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	1011	2012	2013	2014	2015
Direct investment	33.9	23.9	45	19.5	16.9	27.7	187.3	323.5	227.8	318.6	278.8	300.7	294.4	426.7	913.2	1079.1
Portfolio investment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	53.8	11.5	5.7	6.7	360.7	514.8
Other investment	73.3	87.2	67.5	146.1	136.6	137.5	155.5	210.7	208.7	173.7	317.8	359.7	307.3	448.5	814.0	1091.7

Source: IMF/IFS: BOP and International Investment Position

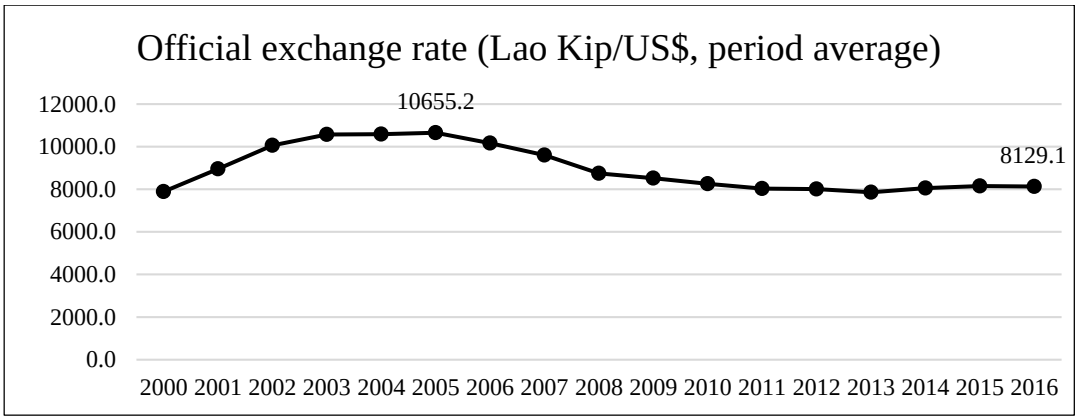
On the one hand, foreign capital inflows have ensured trade deficit, and to enable external transfers, real exchange rate has been more appreciated[6] than it would have been with current account balance. Therefore, foreign capital inflows hinder export performance of Lao PDR. In addition, foreign aid in all forms have potential of creating the Dutch Disease as real exchange rate is overvalued, restraining export potential.

In terms of nominal exchange rate, it has appreciated since 2005 when the substantial foreign direct investments in mining and electricity generation sector started to flow into the country. The exchange rate Lao Kip against US Dollar appreciated from 10,655 Lao Kip/US$

[6] However, data is not available

in 2005 to 8,129 Lao Kip/US$ in 2016. The continuous flows of foreign capital into the country caused the appreciation of local currency, putting pressure on competitiveness and profitability of tradable sectors.

FIGURE 3: OFFICIAL EXCHANGE RATE, LAO KIP AGAINST US DOLLAR



Source: The World Bank, WDI 2016

The domestic investment has been financed by external capital and financial resources to accommodate current account deficit which allows the Investment-Savings (I-S) gap to be filled. Thus, if external loans are used for investment yielding below the interest rates on these loans, external indebtedness becomes a burden, then the borrowing country would be better off without such loans. Lao PDR has been facing the problem of low investment efficiency and unprofitable investments[7], especially public investment projects which are mainly financed by foreign borrowing. This put heavy external debt burden on the government and the ability to repay the loans. On the one hand, high level of external indebtedness, as mentioned in the preceding section, also have significantly negative impacts on growth rate on economic growth especially in developing countries (Zouhaier and Fatma 2014).

Low income level, low financial intermediation of financial sector, and demographic factors, are perceived to be the main constraints on increasing level of domestic resource mobilization. Therefore, Lao PDR has relied substantially on external funding to bridge the Investment-Savings (I-S) gap. Official Development Assistance (ODA) is the major financing source for public investment, however, it could not attain sustainable growth, concentrated and

[7] 8th 5-year National Socio-Economic Development Plan 2016-2020, Ministry of Planning and investment, Lao PDR

dependent on donor's priority projects. On the other hand, FDI which has received much attention by the government concentrated on capital intensive sectors, such as mining and quarrying, and electricity generation. Although FDI is generally considered as more stable resources than short-term capital, the investment has been concentrated in some specific sectors like mining sector, thus the profit and benefit for the country should be smaller than that of the case of manufacturing sectors. Also, positive effects for upgrading the local skills and increase in tax revenues cannot be expected in the current foreign investment in the country.

1.2 Current issues in domestic savings mobilization

1.2.1 Household Savings

Savings instruments of Lao people is attributed to informal and non-financial savings. According to the financial survey 2014 (FinScope Survey for Lao PDR), of the total savings, 28 percent are kept in secret place at home, 23 percent held in form of livestock, 7 percent held in form of gold or jewelry, and 5 percent kept in village development funds or village banks, whereas savings at commercial banks (all bank savings products) accounted for only 25 percent, and only 0.1 percent saved in Lao Postal Savings Institute. This situation signifies the need for the development of formal financial services provision to enable people to have more access to safer saving instruments and to tap financial resource for investments.

Improving household savings could substantially increase the amount of funds for investments. However, households, especially in rural areas, rely on unsustainable income sources. In Lao PDR, agriculture which is characterized as subsistence in its nature, is the major source of income in rural areas. According to the financial access survey in 2014, 78 percent of households engaged in farming for income generation.

The survey reveals that the availability of financial services provision influences on how people save their money. People living in villages which close to bank service units or where there is convenient road access to bank branches, prefer to use banking services more than those living in remote areas[8].

[8] Digital financial services in Lao PDR: Market insights on product needs and channel management, 2014

In addition, the FinScope survey[9] (the financial access survey), revealed that 40 percent of those who had no savings in banks or did not use bank services reported that they do not need it, 13 percent did not save due to service providers are too far from their villages, and 11 percent could not maintain minimum balance set by the banks. It should be noted that 13 percent of the households do not understand how banks work, 9 percent do not know how to apply, 5 percent do not understand benefits of saving in banks, and 11 percent fear of being rejected. This indicates that there is the need for financial literacy and education promotion.

Besides, only 77 percent of total adults had savings while 23 percent were households without savings or dis-savings. The main reasons for dis-saving range from no left-over money after living expenses, accounted for 55 percent of those who did not save, followed by no income (27 percent), and save in other ways when they can. This is because those people generally rely on unstable income sources and their income levels are lower, especially in rural areas. Since majority of the population resides in rural areas, and more than three fourth of adults have savings, it is needed to boost their income level and raise domestic savings in rural areas.

In terms of corporate savings, as commonly observed in developing countries, corporate savings received less attention than household savings. On the other hand, the necessary data for disaggregating private savings into households and corporate components is not available for the case of Lao PDR. However, evidence from a study in South Africa revealed that corporate savings are determined by changes in rate of profits, interest rates, inflation, and the availability of credits (Aron and Muellbauer 2000).

1.2.2 Savings mobilization through compulsory savings scheme

The National Social Security Fund (NSSF) under Ministry of Labor and Social Welfare accumulates funds from compulsory contribution of government employees, employees in private enterprises, self-employed citizens, and voluntary contributed health insurance. Funds contributed by the government officials (16% of salary) are deducted from the salary and transferred to the account of the National Social Security Fund (NSSF) at National Treasury in Ministry of Finance. Whereas contribution from private employee (including from the

[9] The FinScope Survey (2014) for Lao PDR developed by FinMark Trust, is a research tool to assess financial access and financial constraints.

employer) and the voluntary insurance are deposited at state-owned commercial banks. The mobilized funds are allocated to 5 accounts, and rates of monthly contribution to the fund are summarized in the table below:

TABLE 2: INSURANCE SCHEMES AND RATES OF MONTHLY CONTRIBUTION

National Social Security Fund' Accounts	**Government officials, % of salary**	**Private enterprise's employee, %of salary**	**Voluntary self-insurance, % of salary**
Employment injury & occupational disease	0.5%	0.5%	-
Health insurance	1.5%	1.5%	1.5%
Short-term benefit	2.5%	2.5%	2.5%
Long-term benefit	12.0%	5.0%	5.0%
Unemployment benefit	-	2.0%	-
Total rate of monthly contribution	**16.5%**	**11.5%**	**9.0%**

Source: National Social Security Fund (NSSF) under Ministry of Labor and Social Welfare

However, the total number of the fund's member is small, only 268,798 persons which accounts for 0.4 percent of total population in 2016. In addition, more than 60 percent of the total members are in Vientiane, the country's capital city. The mobilized funds through this scheme have not been effectively and directly utilized for prioritized investments as the funds are deposited in commercial banks, which are lacking of appropriate mechanism to effectively allocate the funds to prioritized and productive investments.

2. Issues in Recent Economic Development

Since the economic reform in 1986, transforming from central-planned to market-oriented economy, the government of Lao PDR has made substantial progress in economic development. Although Lao PDR has achieved high economic performance, the signs of fragility have been observed, rising concerns that key elements required for sustainable economic growth remain weak owing to low level of domestic resource mobilization, low domestic savings, and high dependency on external assistance. Economic growth is driven by the extraction of mineral for export and electricity generation. FDI have been concentrated in specific sectors: mining and electricity. Since 2000s, mining sector has grown rapidly, as well as the increase in numbers of power plants and electricity export, becoming the main sources

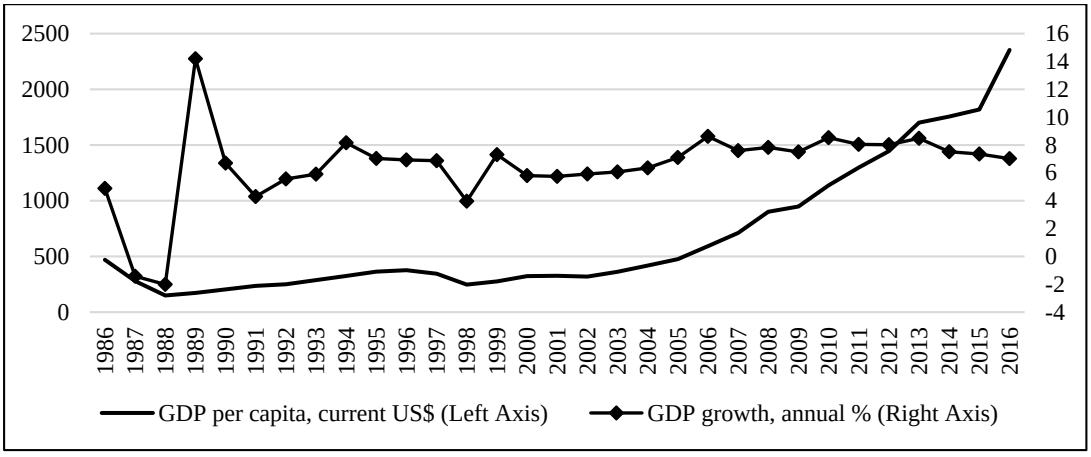
of government revenue. Although Lao PDR has high economic growth rate in recent years, the growth did not generate jobs for Lao people as expected.

2.1 Economic Growth and Sectoral Performance

Over the past three decades, the Lao economy has grown significantly, especially during the past sixteen years between 2000 and 2015. Lao PDR has experienced high economic growth, comparatively highest among ASEAN countries, with annual GDP growth rate at 7.9 percent on average throughout the implementing period of the 6th National Socio-Economic Development Plan (2006-2010)[10], and 7.9 percent per annum during the 7th National Socio-Economic Development Plan (2011-2015), and GDP per capita increased from US$324 in 2000 to approximately US$2,353 in 2016.

Despite the high economic growth, the growth has remained fragile and unsustainable. This could be mainly caused by substantial reliance on natural resource related sector such as mineral excavation and electricity generation, which do not create employment opportunities for majority of the population.

FIGURE 4: GDP GROWTH AND GDP PER CAPITA IN LAO PDR



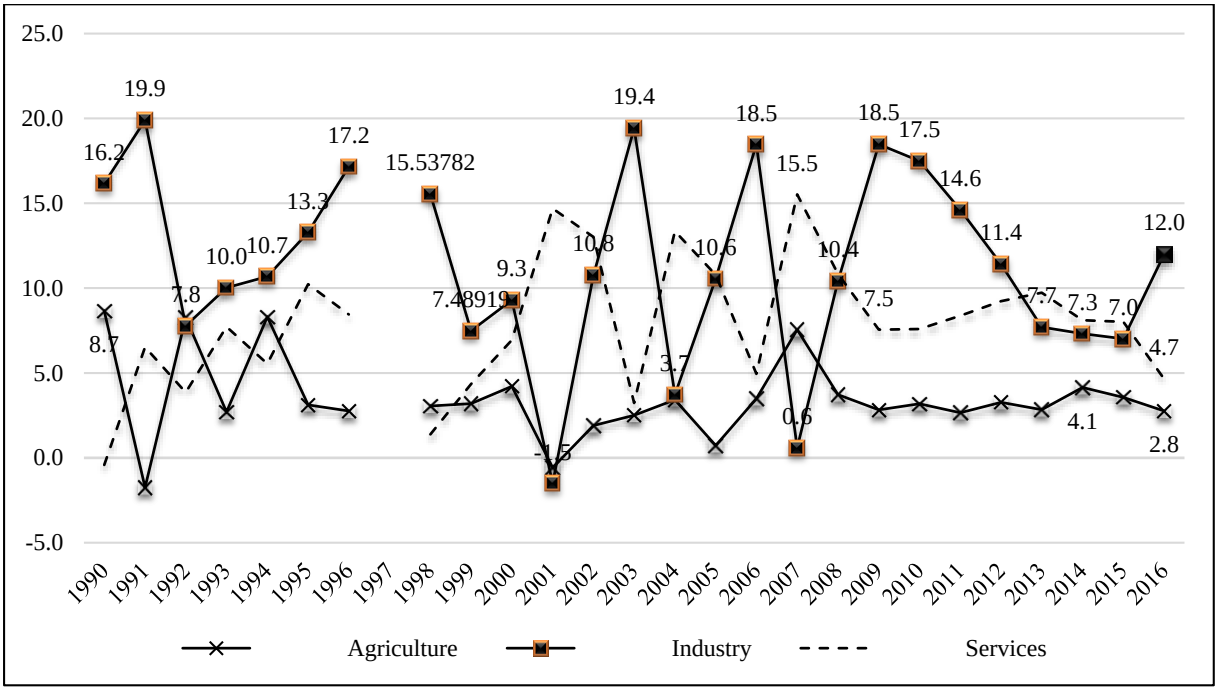
Source: World Bank/World Development Indicators Last updated October 2017

Overall, economic growth of Lao PDR has been fragile due mainly to the growth is attributed to growth of industrial sector which is dominated by mineral excavation and electricity generation. Although the growth rate of this sector has been high compared with the

[10] 7th National Socio-Economic Development Plan (2011-2015), Ministry of Planning and Investment 2011

other two sectors such as agriculture and service, the growth has been unstable and volatile. Since the global financial crisis and the fall in global commodity prices, growth of this sector has slowed down, and recently, service sector turned out to be the highest growth sector which mainly contributed by growth in wholesale and retail trade and repair.

FIGURE 5: SECTORAL GROWTH (1990-2016), ANNUAL CHANGE (%)



Source: ADB/Key indicators for Asia and the Pacific 2017

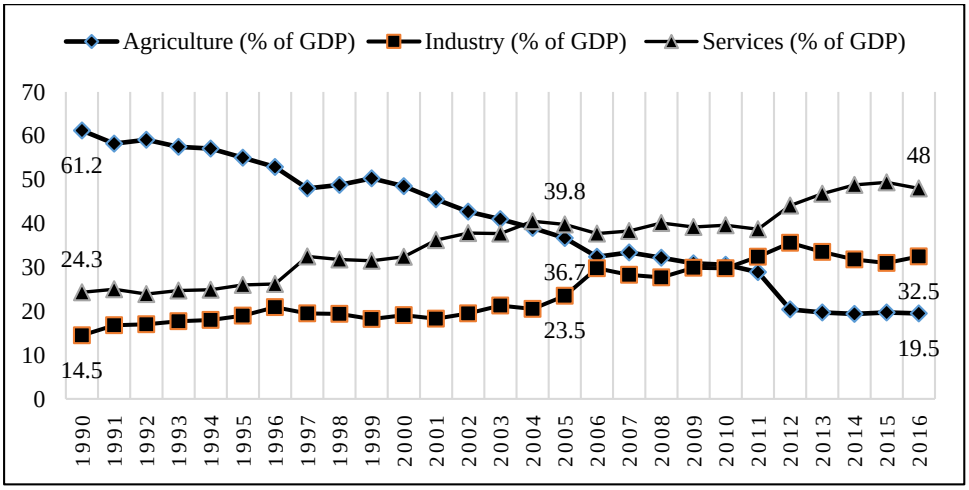
Note: 1997 data is not available

The agriculture sector, in which more than 75 percent of total population are engaged, the average annual growth rate of this sector has been relatively low compared with the other two sectors, such as industry and service, and has stagnated since the 2008. This sector consists of forestry which has drastically declined due to the decrease in logging quota, whereas crops, animal raising, and hunting grew by about 3.6 percent annually, and fishery grew by 3.67 percent approximately. However, since the 2012/13 fiscal year the government imposed fostering policy to cover domestic demand and export, resulting in the increase in fishery by 4.47 percent in the 2012/13 fiscal year and 4.07 percent in 2013/14 fiscal year.

The government of Lao PDR has adopted industrialization and modernization strategy to develop the economy deepening of industrialization. For this reason and based on the country's potentials, electricity generation, mining, agricultural and forestry product

processing, and construction material production as well as tourism industry are prioritized as the fundamentals of industrialization. In addition, during 2001-2020 period, the targeted annual growth rate of GDP was set to grow at 7 percent on average, of which industrial sector to grow at 10-12 percent annually, accounted for at least 37 percent of GDP in terms of sectoral share[11]. Therefore, economic structure has gradually changed toward industrialization and modernization, which is in line with the government's development vision. From 2000 to 2016, agricultural output share in GDP has declined from 48.5 percent in 2000 to 24.8 percent in 2016, whereas those of industrial sector and service sector have increased from 19.1 percent to 31.8 percent and 32.4 percent to 48 percent, respectively.

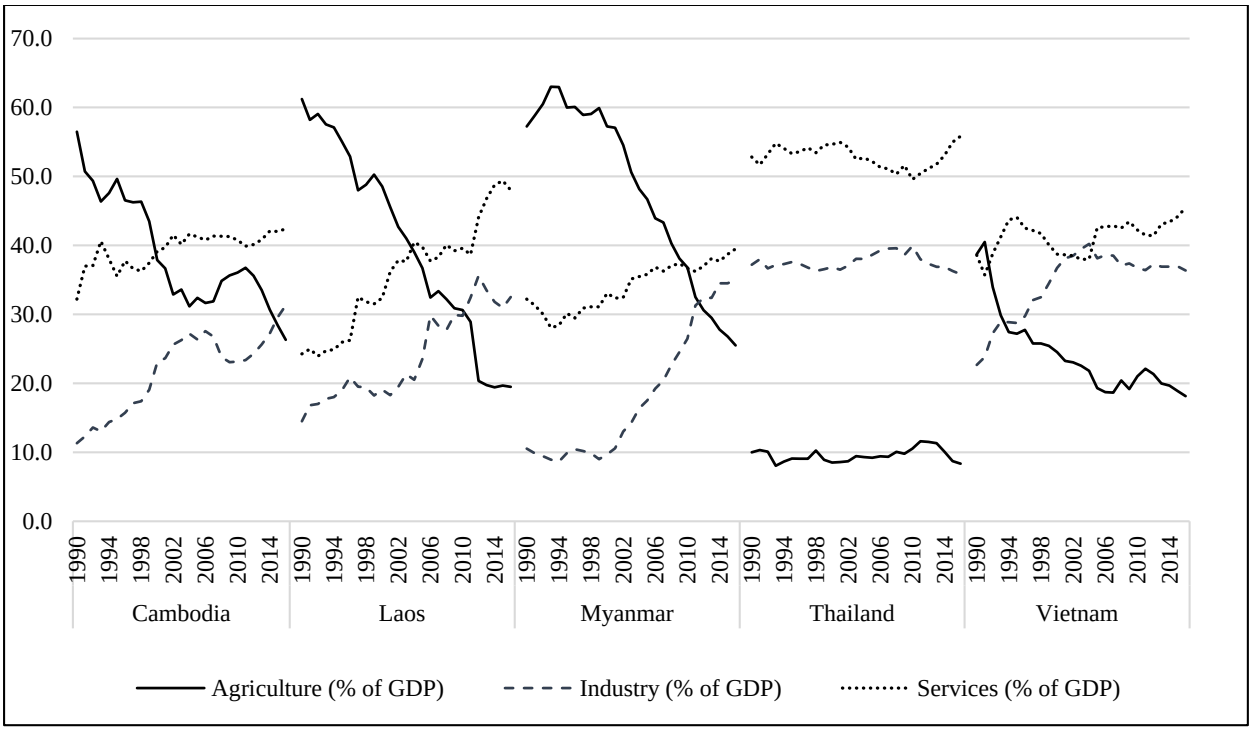
FIGURE 6: OUTPUT SHARES IN GDP OF LAO PDR



Source: ADB/Key indicators for Asia and the Pacific 2017

[11] Industrialization and Modernization Strategy (2001-2020), Planning and Cooperation Committee, Vientiane, Lao PDR, July 2002.

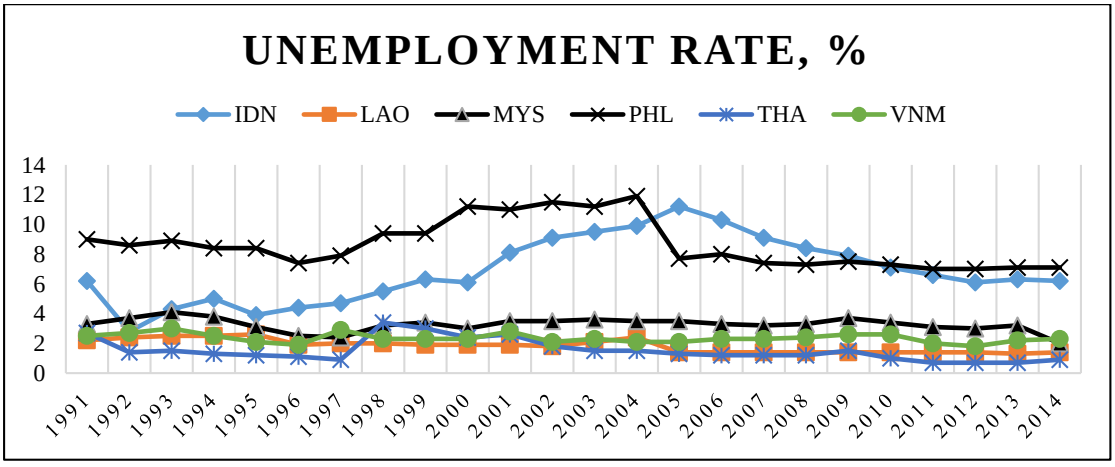
FIGURE 7: OUTPUT SHARES IN GDP, CROSS-REGION COMPARISON



Source: ADB/Key indicators for Asia and the Pacific 2017

Compared with neighboring countries, especially among CLMV countries, share of agriculture in GDP of Lao PDR has declined sharply while those of industrial and service sectors have increased at slower pace. This indicates that labors move out from agricultural sector have not been entirely absorbed by the industrial and services sectors.

FIGURE 8: UNEMPLOYMENT RATE



Source: World Bank/World Development Indicators 2016

Notes: IDN: Indonesia, LAO: Lao PDR, MYS: Malaysia, PHL: Philippines, THA:Thailand, and VNM is Vietnam

Although economic structure and employment or labor structure have changed in the same direction, the changes are not consistent. For instance, agricultural output share in GDP has drastically declined, whereas labor in this sector remain high. On the one hand, industrial sector which is the highest growth sector, has not created job opportunities as supposed. This is due to industrial sector is dominated by mining and electricity generation which are capital intensive industries.

Over the past 10 years from 2005 to 2015, labor in agricultural sector has dramatically declined from 78.5 percent in 2005 to 71.3 percent and 65.3 percent in 2010 and 2015, respectively while labor in industry and service sector have increased at lower rates than the declining rate of labor in agriculture sector. Despite the changes toward industrialization direction of labor structure, labor in industry sector accounted for only 11.4 percent of the total labor in 2015, while the largest share of labor work in the agricultural sector which accounts for only 23.7 percent of GDP in 2015[12].

TABLE 3: SHARE OF LABOR BY SECTOR, % OF TOTAL LABOR

Sector	Year, % of total labor		
	2005	2010	2015
Agriculture	78.5%	71.3%	65.3%
Industry	4.8%	8.3%	11.4%
Service	16.7%	20.4%	23.3%

Source: Ministry of Labor and Social Welfare 2016

Most of industrial sector development is capital intensive, challenging domestic employment creation and on-the-job training. On the other hand, majority of the labor force is unskilled labor, lack of self-discipline and lacking in skills for manufacturing of high value-added products, restraining production process in industrial system. Skill development in terms of quantity and quality has not supported the domestic labor demand, and lack of concrete coordination mechanism among concerned government organizations and private sectors as well as lacking in accurate labor market information (Ministry of Labor and Social Welfare 2015).

[12] Annual Economic Report 2015, Bank of The Lao PDR

Domestic labor supply is not sufficient for demand in terms of both quantity and quality, especially employment in Special and Specific Economic Zones[13] which are established to facilitate investment and attract FDI. By the end of 2014, total number of employment in the zones was 10,607 persons, of which domestically labor supply was only 3,439 persons accounted for 32.42 percent of total employment in the zones, whereas foreign labor accounted for 67.58 percent (Khattiya 2015), (Lao National Committee for Specific Economic Zone 2015). As of June 2017, there were 352 firms investing in the zones, creating 14,699 jobs. Of the total firms, 38 percent was investment in service sector, followed by trading (33 percent) and industrial sector (29 percent)[14].

Despite the insufficient domestic labor supply, labors migrate to overseas, particularly to Thailand. Between 2011and 2015, total domestic recruitment was 156,926 persons, while international recruitment was 120,513 persons[15]. Most of outward labor migration are unskilled labor, while labor from abroad are skilled labor (Skill Development and Employment Department, Ministry of Labor and Social Welfare 2015).

Although unemployment rate in Lao PDR is relatively low compared with Cambodia, Vietnam and Myanmar, under employment is majority in the rural areas, engaging in subsistence agriculture. Therefore, 'Hidden' unemployment may be found. The incidence of vulnerable employment remains high, accounted for 84 percent of total employment in 2010[16]. The vulnerable employment here consists of unpaid-family workers and own-account workers. Consequently, large number of population having no permanent job, migrate to urban areas and cross-country borders, especially to Thailand to seek employment in plantation agriculture, construction sector, and personal services.

[13] In Lao PDR, there are three main types of Special-Specific Economic Zones such as industrial zones (5 zones), tourism and new urban centres (4 zones), and trade and logistics zones (3 zones).

[14] Special Economic Zone Promotion and Management Office, Ministry of Planning and Investment (August, 2017).

[15] However, this is the official recorded figure while large number of illegal migration/recruitment is not recorded.

[16] The World Bank, World Development Indicators 2016.

2.2 Issues in fiscal sector

The government of Lao PDR has been facing chronic fiscal deficit, and the deficit is even larger when excluding grants from ODA. The overall fiscal deficit (including grants from ODA) has declined from minus 5.54 percent of GDP in 2000 to minus 1.5 percent in 2012. However, in fiscal year 2012/13, the fiscal deficit widened remarkably to minus 6.33 percent of GDP due mainly to the sharp increase in government expenditure, especially civil employees' compensation, monthly benefits, and domestic debt repayment. However, to the fiscal difficulties, since the fiscal year 2013/14, the monthly benefit allowance for civil servants have been suspended, followed by cutting funding for several new state investment projects by almost four-fold.

In the past two fiscal years, 2014/15 and 2015/16, the overall deficit had risen due to the decrease in tax and non-tax revenues, especially the fall of natural resource tax revenue and timber royalties as well as dividends, coupled with the increase in interest payment for external loans. Therefore, in 2014/15 fiscal year, the government mobilized external funds to finance the deficits by issuing bonds and loans which worth Lao Kip 2,870 billion. The bonds amounted to Lao Kip 419 billion, while the bonds issued in Thailand were worth Lao Kip 1,134 billion[17]. There is increasing debate about the rising debt in Lao PDR which could lead the country into economic crisis if the government fails to manage the situation properly. Economists have warned that the government should not let the budget deficit to rise above 5 percent of GDP as this would make it hard for the government to manage the debt.

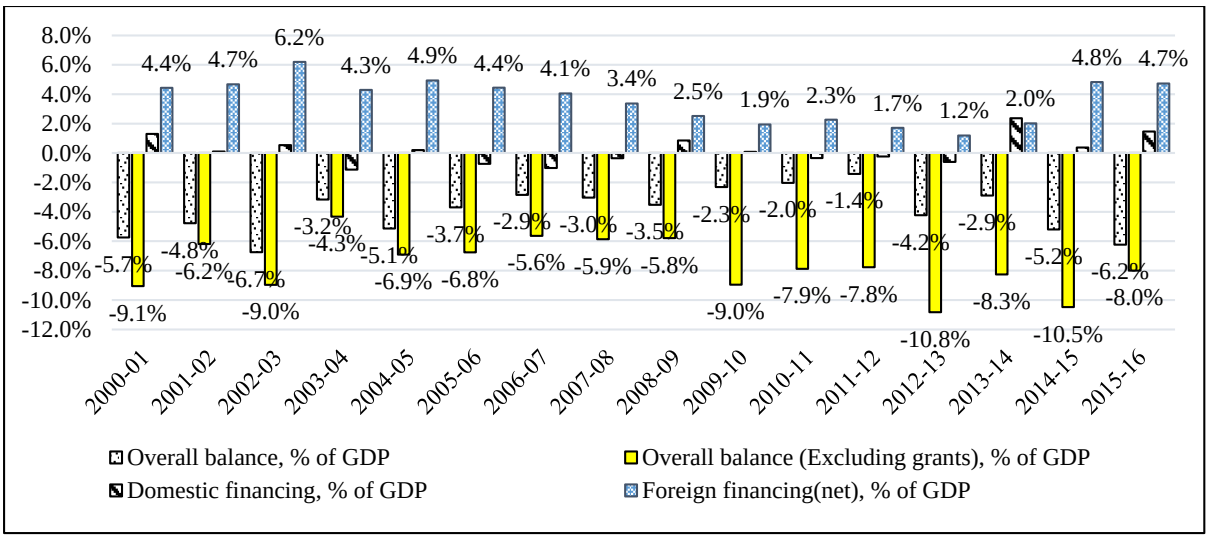
Lao PDR has experienced a revenue shortfall over several years. One of the main reasons for this is that many companies, both small and large companies, have avoided paying taxes. Also, state enterprises failed to pay profit taxes and dividends to the ministry of finance due to loss in earnings. Another factor is the improper use of funds, if not addressed, could harm the Lao economy considerably. Meanwhile income from the mining sector has also declined for around two third of those in the previous years because of falling commodity prices.

[17] Ministry of Finance, Lao PDR

2.2.1 Financing for fiscal deficit

The major financing source for government budget deficit is from foreign borrowing, accounted for approximately 3.4 percent of GDP on average throughout the period between 2000 and 2015. Domestic financing, especially borrowing from banks, reached 4.87 percent of GDP in 2013 due to the increased in salary and monthly additional allowance provided to civil employees. Large fiscal deficits could crowd out private activities since high public deficits increases cost of financial intermediation, and reduces funds available to business, threatening economic stability. Domestic financing includes borrowing from banking sector, issuing treasury bills and government bonds. The government bonds were the first ones of foreign currency issued overseas.

FIGURE 9: FINANCING SOURCES FOR FISCAL DEFICITS, % OF GDP



Source: Fiscal Policy Department, Ministry of Finance Lao PDR

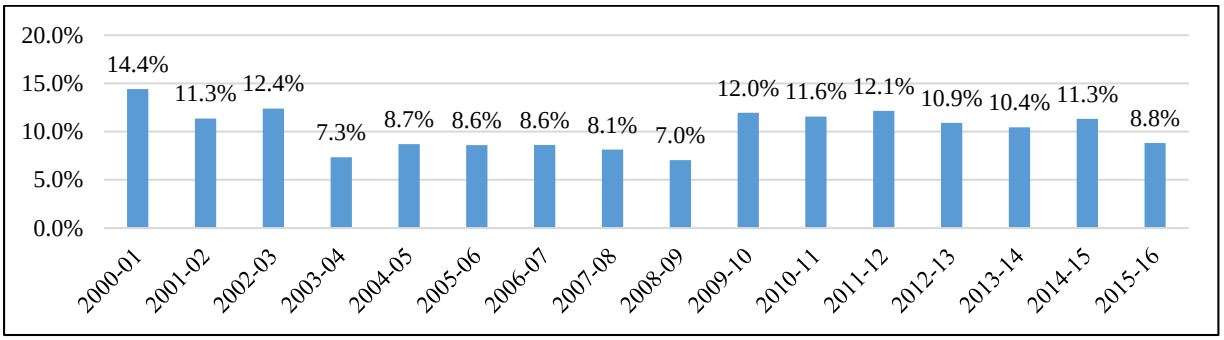
2.2.2 Public Investment

Public investment of Lao PDR accounted for approximately 10.2 percent of GDP on average during the 2000 and 2013 period. During the past five years[18], from the 2010/11 to 2014/15 fiscal year, total value of public investment from state budget financing source was amounted to Lao Kip 12,892.76 billion, accounted for only 5.45 percent of total investment of the entire period. Public investment has gradually increased from Lao Kip

[18] 8th 5-year National Socio-Economic Development Plan (2016-2020), Ministry of Planning and Investment 2016

1,753.23 billion, accounted for 6.62 percent of total investment in the 2010/11 fiscal year to Lao Kip 3,300 billion or 10.15 percent of total investment in the 2014/15 fiscal year. Of the total investment budget for the entire period, 30 percent was invested in economic sector, 35 percent in social sector: education 17 percent, public health 9 percent, and other 9 percent; and the rest 35 percent was allocated to finance the construction and improvement of roads and public buildings (28 percent for road upgrading and construction, and 7 percent for public buildings).

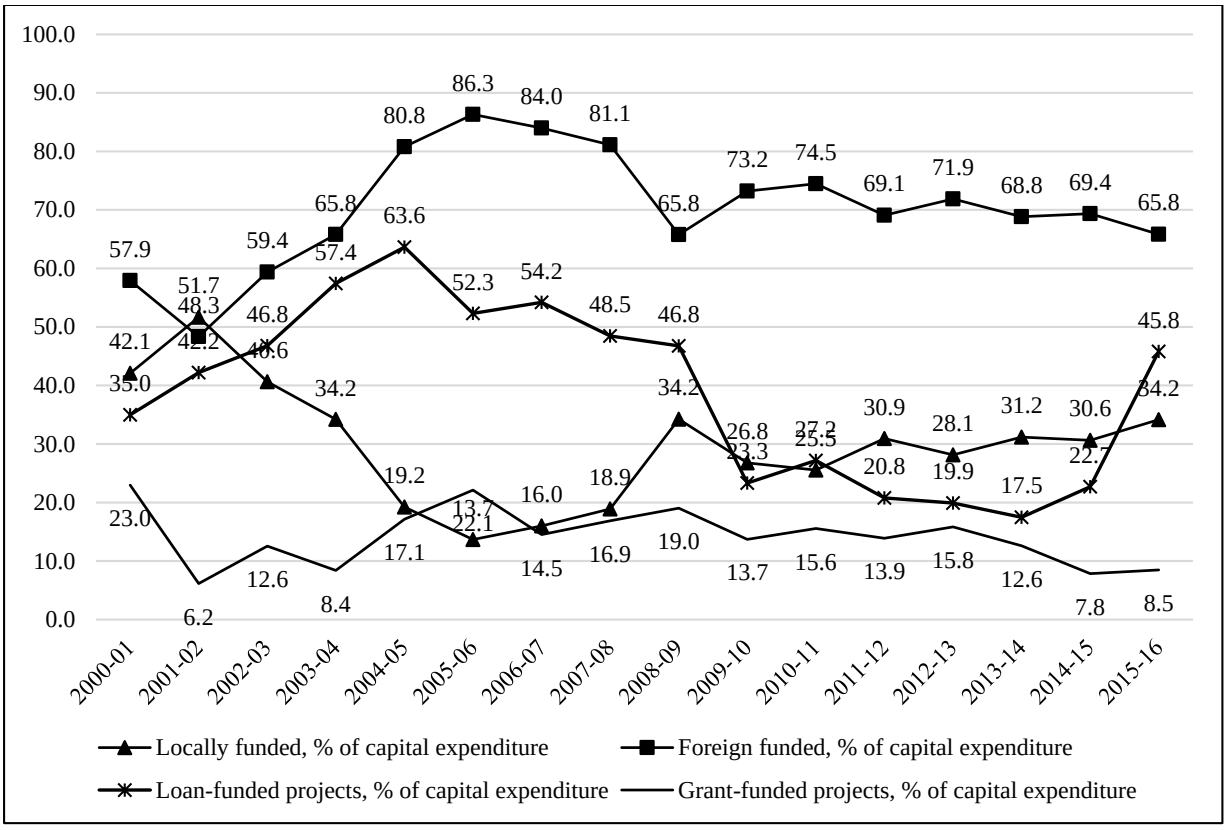
FIGURE 10: PUBLIC INVESTMENT (CAPITAL EXPENDITURE), % OF GDP



Source: Fiscal Policy Department, Ministry of Finance Lao PDR

As indicated in figure 10 that more than 70 percent of public investment throughout the 2000 and 2016 period was attributed to foreign financing, especially in terms of project loans which were used in investing in physical economic infrastructure. Whereas project grants were allocated to investments in social sector such as education and public health.

FIGURE 11: FINANCING SOURCES FOR PUBLIC INVESTMENT, % OF TOTAL PUBLIC INVESTMENT



Source: Fiscal Policy Department, Ministry of Finance Lao PDR

2.3 Issues in External financial sector

2.3.1 Balance of Payment

Lao PDR has chronic trade deficit, the main factor contributed to the current account deficit throughout the period between 2000 and 2015. Trade balance marked chronic deficit approximately 9 percent of GDP annually throughout the period. In addition, the deficit has widened from 7.57 percent of GDP in 2013 to 19.95 percent in 2015. Although the export value has gradually increased, it followed by the substantial increase in import. The main import categories were investment goods and consumption goods, while those of export were mining products especially gold and copper, electricity, garments, wood products, and agriculture and forest products.

TABLE 4: BALANCE OF PAYMENT, % OF GDP

Balance of Payment(% of GDP)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Overall Balance	2	-0.43	3.62	0.92	0.47	0.39	2.81	4.72	1.9	1.36	1.5	-6.33	0.65	-0.72	1.31	1.39
Current Account (Including grants)	-3	-3.21	1.09	-2.15	-7.69	-6.82	1.43	2.53	1.71	-1.09	0.43	1.96	-4.15	-4.05	-10.02	-18.34
Current Account (Excluding grants)	-7.03	-5.22	-2.18	-3.38	-9.23	-8.03	-0.51	1.4	0.3	-2.84	-1.16	0.11	-5.95	-5.45	-11.45	-19.32
Trade Balance	-12	-10.94	-8.09	-6.27	-14.19	-11.65	-5.14	-3.36	-5.89	-7.31	-4.59	-2.66	-8.35	-7.57	-13.69	-19.95
Capital and financial Account	6.76	7.48	3.81	5.87	3.82	4.55	6.63	9.36	8.15	11.54	5.87	11.76	8.99	12.62	14.63	22.8
External Debt Outstanding	65.7	69.1	70.93	81.7	77.18	78.21	71.21	57.7	48.71	48.24	41.04	36.52	42.29	38.66	46.14	45.56

Source: Bank of The Lao PDR' annual economic reports

Current account (including grants) marked deficits during 2000 and 2015 period, and the deficit had widened from -4.15 percent of GDP in 2012 to -18.34 percent in 2015. Among ASEAN countries, in 2015, Lao PDR was the country with largest current account deficit, followed by Myanmar (-7.12 percent of GDP), while the rest of ASEAN countries had current account surplus[19]. The rising external current account deficit jeopardizes the sustainability of economic growth, and causes the increase in external reliance as implied by the increasing in capital/financial account surplus. Capital and financial account had marked surplus throughout the period, due mainly to the inflows of foreign direct investment and other investment, especially in the recent five years that the capital/financial account surplus had increased drastically from 5.87 percent of GDP in 2010 to 22.8 percent in 2015.

Net transfers marked surplus throughout the past five years from 2009 to 2014. The amount of surplus had increased from around US$ 132 million in 2009 to US$ 288.5 million in 2014 due to the increase in private transfer and grants to government. On the other hand, annual outward income payments had larger amount than that of inward income. Outward income payments increased from US$ 88.76 million in 2009 to around US$ 192 million in 2014[20]. Its upward tendency was resulted from the increase in corporate profit repatriation of foreign investors, outward income and salary transfers of foreign workers in large mining and electricity projects, as well as the increase in government interest payments.

During the past five years, factor income marked deficit with average annual amount of US$ 93 million approximately. The Factor income had gradually increased from US$ 42.73 million in 2009 to US$ 72.72 million in 2013 then dropped to US$ 47.12 million in 2014.

[19] World Bank/World Development Indicators 2016

[20] World Bank/World Development Indicators 2016

In Lao PDR, the amount of personal remittances, which attributed to workers' remittances[21] from unskilled labors working Thailand, are relatively small and not significant compared with FDI, other investment, and grants. During 2000 and 2014 period, the amount of annual remittance received was approximately 0.34 percent of GDP on average[22]. Since the main source of remmittance is mainly from income of labor migrating to Thailand, after the Asian crisis, the remmitted money dropped from 3.9 percent of GDP in 1998 to 0.04 percent in 1999 then stagnates for years onward. Although it is not a large amount, it contributes to the living of the poor in rual areas.

2.3.2 General features of Foreign Direct Investment (FDI) in Lao PDR

The current situation of FDI in Lao PDR suggests that has not benefited from the FDI inflow as expected since most of FDI skews to capital intensive sector and substantial increasing outward transfer of the retained earnings. Foreign investors are granted the right to repatriate their profits or other funds from their investment (National Assembly 2009), and repatriation of profits is tax exempted (National Assembly of Lao PDR 2011). Consequently, the after-tax income earned from FDI has flown out of the country.

Lao PDR lacks sufficient financial resource for investment, therefore, the government emphasizes on attracting FDI to boost economic growth. However, FDI flows into Lao PDR, especially in the recent ten years between the 2005 and 2015, focuses mainly on capital intensive investment such as mineral excavation and electricity generation, which have not contributed to employment generation of local people. Since the early 2000s, FDI has increased sharply as foreign companies started to enlarge production due to the increase in mineral price in the world market, however, in 2009, it turned out to decline due mainly to many large projects were postponed in implementaion as a result of global economic recession and the fall in global commodity prices.

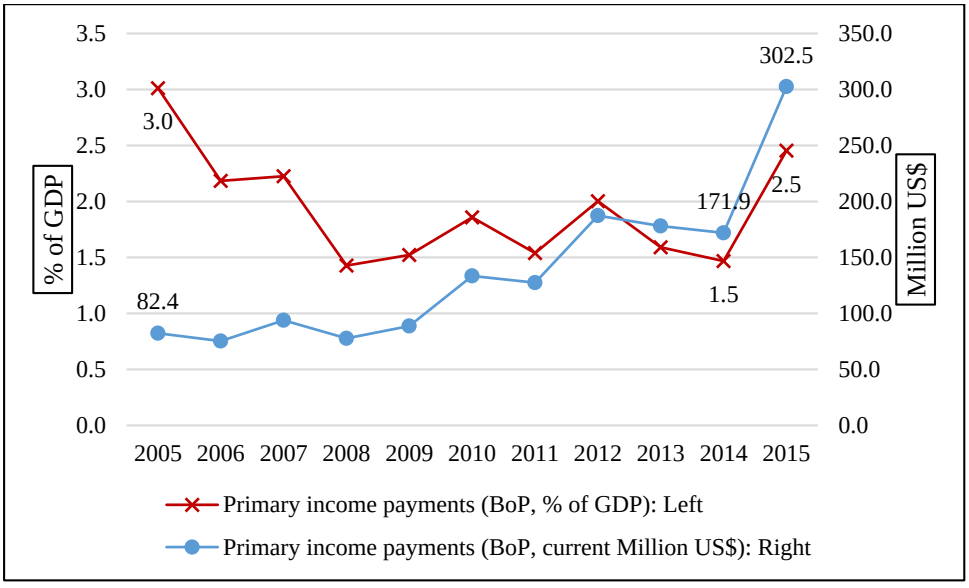
[21] Workers' remittances, though not domestically generated, can be a domestic resource in the recipient country. However, it is relatively small since the majority of remitted amount is from unskilled labor migrating to work in agricultural and construction sectors mainly in Thailand (Bank of The Lao PDR 2014), and the remitted money is used to accommodate only the household consumption of the poor in rural which should be subsistence level, so that the remittance would not contribute to increase domestic savings for investment areas other than for saving or investment.

[22] Author's calculation based on data from World Bank/WDI2016

According to the statistics from Investment Promotion Department, Ministry of Planning and Investment, over the past 26 years from 1989 to 2015, the approved FDI value amounted to approximately US$ 18.22 billion, accounted for almost three quarter of total investment in the country. Most of inward FDI was from neighboring countries particularly China, Thailand, and Vietnam. Currently, China becomes the top investor in Lao PDR, with 834 investment projects and the investment value amounting to around US$ 5.5 billion, accounted for approximately 22.1 percent of total investment in Lao PDR between 1989 and 2015 period.

Despite the increase in FDI inflow into the Lao PDR, the inflow is followed by the rise in repatriation of income generated from FDI projects operating in the country. During the past ten years from 2005 to 2015, outward transfer of employee compensation paid to non-resident workers and investment income generated from operating FDI projects had gradually increased from approximately US$ 82.4 million in 2005 to around US$ 171.9 million in 2014 (or 1.5 percent of GDP in the year), and abruptly rose to US$ 302.5 million (accounted for 2.5 percent of GDP) in 2015. The sharp rise in outward FDI income in 2015 was mainly due to many power plants has completed construction and started producing electricity.

FIGURE 12: OUTWARD INCOME PAYMENT



Source: World Bank/ World Development Indicators 2016

On the other hand, annual outward income payments had larger amount than that of inward income. Outward payments increased from US$ 88.76 million in 2009 to around US$

192 million in 2014. Its upward tendency was resulted from the increase in corporate profit repatriation of foreign investors, outward income and salary transfers of foreign workers in large mining and electricity projects, as well as the increase in government interest payments.

2.3.3 Financial and Capital Account

Capital and financial account recorded surplus over the past five years from 2009 to 2014, increased from US$ 644.43 million to US$ 1,719.98 million. The upward increase of the capital and financial account was resulted from the increase in capital inflows, especially FDI in hydropower, mining, construction, and service sectors. Portfolio investment has been recorded since 2010 when the Lao Stock Market was inaugurated, and the investment had drastically increased from US$ 53.8 million in 2010 to US$ 360.67 million in 2014, and upsurged to reach US$ 531.3 million in 2015[23]. The rise in foreign portfolio in the recent year was due mainly to more liberalization of capital market by increasing maximum order from 5-digit numbers to 6-digit numbers per order, and reducing trading commission fee. In addition, EDL-Gen, the largest company listed in the stock market, increased its foreign holding limit from 20 percent to 25 percent (Lao Securrity Exchange 2015).

2.3.4 External Indebtedness

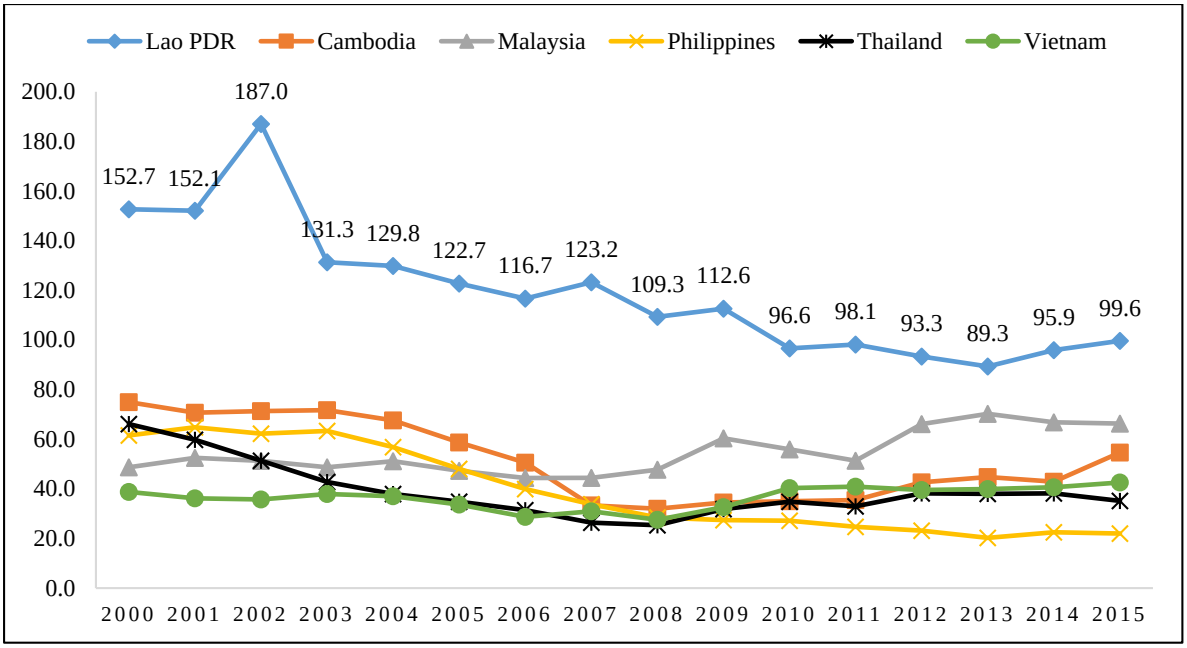
Although the external indebtedness of the country has declined, it remains the highest foreign indebtedness compared with other ASEAN countries. The high level of external debt would jeopardize capital flight since it serves as a signal of future increase in taxation and economic mismanagement which will result in outward transfer of capital.

Foreign indebtedness of Lao PDR had declined from 152.7 percent of GNI in 2000 to 95.9 percent in 2014 then rose to 99.6 percent in 2015. Foreign indebtedness in the form of public and publicly guaranteed accounted for 97.6 percent of total external debt outstanding in the 2000 and 52.5 percent in the 2014[24]. The debt was attributed to bilateral debt, accounted for 67.47 percent of total external debt outstanding in 2014 while multilateral debt accounted for 32.53 percent.

[23] ADB/Key indicators for Asia and the Pacific 2016

[24] ADB/Key indicators for Asia and the Pacific 2016

FIGURE 13: EXTERNAL INDEBTEDNESS, % OF GNI



Source: ADB/Key indicators for Asia and the Pacific 2017

2.4 General feature of Domestic private enterprises and issues in financial access

Domestic private sector in Lao PDR is dominated by small and medium enterprises (SMEs). According to the World Bank's Enterprise Survey for Lao PDR, in 2016, domestic private enterprises accounted for 93 percent of total registered enterprises while the other 7 percent was foreign private enterprise. Of the total enterprises, more than 95 percent were classified as small and medium-sized enterprises (SMEs), and most of them belong to domestic private ownership. Lao Enterprise Survey 2013 reveals that most of Lao's SMEs are in trade sector (wholesale and retail trade and repair of motorcycle and vehicle), accounted for 43.63 percent of total enterprises, followed by service sector (accommodation and food service activities) 19.81 percent, and manufacturing 13.71 percent (GIZ 2014).

SMEs in Lao PDR are primarily focused on domestic market selling their products domestically, while only small portion of them are exported to international market. In 2016, more than 90 percent of goods produced by SMEs are sold domestically. The low level of export of SMEs is due to most of SMEs have low productivity, and the goods produced have not yet met the international standards. In addition, the enterprises have been facing problem in lacking in external market information, and high cost of production. These are the fundamental causes of high prices of domestically produced goods, especially food prices which are 10-20 percent

higher than those in Thailand (Department of Domestic Trade, Ministry of Industry and Commerce 2017).

2.4.1 Major obstacles to doing business

Apart from access to finance, the practice of informal sector, high tax rate, and lack of adequately-educated workforce, are also the biggest obstacles enterprises in Lao PDR. As shown in the table 5 that 26.2 percent of medium enterprises, and 11.8 of small enterprises claimed that inadequately-educated workforce was their biggest obstacle, whereas 22.7 percent of medium enterprises, and 27.3 percent of small enterprises claiming practice of the informal sector were the biggest obstacle. Besides, 22.8 percent of small enterprises and 13 percent of medium enterprises reported that tax rates are the main constraint on their business. On the one hand, domestic private-owned enterprises have more difficulties than foreign enterprises in terms of access to finance, and tax obligation.

TABLE 5: BIGGEST OBSTACLE TO DOING BUSINESS OF FIRMS IN LAO PDR IN 2016

Group		**Biggest Obstacle, % of Subgroup level**								
Subgroup	Subgroup Level	Access to finance	Business licensing and permits	Customs and trade regulations	Electricity	Inadequately educated workforce	Practices of the informal sector	Tax administration	Tax rates	Transportation
Sector	Manufacturing	13.2	7	4.3	1.9	14.4	26.4	0	14.2	17.9
Size	Small (5-19)	5	1.3	3.8	13.5	11.8	27.3	1	22.8	2.8
Size	Medium (20-99)	3.6	1.6	1.2	9.4	26.2	22.7	0.3	13.8	20.2
Size	Large (100+)	2.8	2.5	1.4	2.3	33	12.5	0	21.7	4.8
Ownership Type	Domestic	5.2	1.4	3.9	14.1	11.8	26.5	1	23.1	3.4
Ownership Type	10% or more foreign ownership	0.3	0.3	0	0	31.5	30.3	0	9.5	14.2

Source: World Bank/Enterprise Survey database (Last Updated March 1, 2017)

On the other hand, investment promotion is non-discrimination between local and foreign investors. According to Law on investment promotion of the Lao PDR No.02/National Assembly, dated July 8, 2009, local and foreign investors are granted equally in terms of tax and non-tax incentives. Domestic enterprises which remain at the initial stage of development are unable to compete with foreign firms. Moreover, SMEs dominating domestic enterprises in the country, have been facing difficulties in getting credits and lack of financial support from banks. There are various constraints on access to finance, such as high collateral requirement, high interest rate on loans, complicated application procedure, and lack of accurate information from financial institutions.

2.4.2 Issues in financial access of SMEs

Enterprises in Lao PDR, especially SMEs and enterprises operating in manufacturing sector, have limited access to formal financing source, compelling them to use internal financing source. In 2016, only 6.9 percent of medium-sized enterprises, 17.9 percent of small enterprises, and 7.2 percent of large enterprises, used bank loans to finance their investments, whereas only 6.6 percent of manufacturing firms acquired bank financing for investment. Moreover, SMEs have been facing difficulties in obtaining secure banks loans as acquiring loans requires high value of collateral. In addition, the enterprises survey for Lao PDR in 2013 found that only about 60 percent of all firms borrowed money from banks to finance for their business. The alternative financing sources of large firms were from money lenders which accounted for 13 percent, whereas family members were important financing sources for micro firms (22.2 percent) as well as small and medium firms (19 percent and 11.5 percent, respectively). Using loans from informal financing sources such as money lenders to launch and run their business is insecure and drives up production cost as the informal providers always charge high interest on loans.

TABLE 6: ENTERPRISES' FINANCIAL ACCESS, AND SALES OF PRODUCTS 2016

Items	Sector	Size			Ownership Type	
	Manufacturing	Small (5-19)	Medium (20-99)	Large (100+)	Domestic	10% or more foreign ownership
Firms with a checking or savings account, %	81.6	79.6	97.7	95.2	80.6	88.9
Firms with a bank loan/line of credit, %	13.3	11.1	26.4	18.5	13.1	3.4
Proportion of loans requiring collateral (%)	99.1	95.8	100	85.2	96.2	n.a.
Value of collateral needed for a loan (% of the loan amount)	239	284.1	209.2	n.a.	277.1	n.a.
Firms not needing a loan, %	36.9	53.4	35.8	57.2	52.5	47.6
Firms whose recent loan application was rejected, %	0	5.3	1.2	0	4.4	n.a.
Firms using banks to finance investments, %	6.6	17.9	6.9	7.2	17.3	7.5
Proportion of investments financed internally (%)	93.5	79.2	89	92.7	79	94.5
Proportion of investments financed by banks (%)	1.8	12.5	1.5	3.6	12	1.6
Proportion of investments financed by supplier credit (%)	1.8	0	3.1	0	0.1	2.5
Proportion of investments financed by equity or stock sales (%)	3	0	5.7	3.8	1	0.8
Firms using banks to finance working capital	9.3	6.9	24.3	13.7	8.9	0.8
Proportion of working capital financed by banks (%)	3.1	3.3	7.3	6.8	4	0.6
Proportion of working capital financed by supplier credit (%)	2.2	1.8	2.2	2	1.9	0.8
Proportion of total sales that are domestic sales (%)	92	98.3	88	74.3	97.8	88.7
Firms exporting directly or indirectly (at least 1% of sales)	11.6	4.3	22.9	31.2	5.5	13.6

Source: World Bank/Enterprise Survey database (Last Updated March 1, 2017)

Since private sector in Lao PDR is dominated by SMEs which contribute to domestic employment generation, and those SMEs are at the early stage of development and facing difficulties in accessing to formal financial services as well as lack of financial support from government. SMEs promotion, especially sufficient financial support and low interest loan provision should be emphasized to assist SMEs and foster sustainable economic growth. This requires great support from government to ease financial constraints and provide more low-interest credits to SMEs. In addition, domestic or local firms, especially SMEs and export-oriented as well as manufacturing-oriented firms, should be prioritized and promoted. The incentives offered should be more favorable for the local firms to raise their competitiveness.

3. General feature of the financial sector in Lao PDR

The Lao financial sector is bank-based, with banks' assets account for more than 90 percent of the total assets of the financial sector. Financial structure has gradually diversified that there are now 42 commercial banks in Lao PDR, consisting of 4 state-owned commercial banks, 3 joint-venture banks, 7 private banks and 28 subsidiaries and branches of foreign banks, 147 microfinance institutes, and 5 listed companies in the Lao Securities Exchange.

Since late 2000s, banking business environment in Lao PDR has been very competitive due to the increase in number of banks, especially foreign banks, to provide various financial services. The sharp increase in foreign bank presence in the country stemmed from 2007 after the enacted of commercial bank law, and financial liberalization by reducing reserve requirement from 8 percent on Lao Kip account and 15 percent on foreign currency account in 2005 to 5 percent and 10 percent respectively in 2006.

Despite the increase in M_2 to GDP ratio from 17.4 percent in 2000 to 59.8 percent in 2015, financial sector in Lao PDR is characterized by low financial depth represented by low level of intermediary. In addition, another proxy of financial depth as measured by domestic credits to private sector by financial sector was only 43.3 percent of GDP in 2015[25]. Financial sector in Lao PDR is considerably the extreme form of external financial liberalization that high level of foreign currency assets is held and traded within the country.

Besides, monetary survey data from Bank of the Lao PDR reveals that Lao Economy is highly dollarized, as measured by foreign currency deposits which accounted for more than 65 percent of total deposit on average throughout the period between 1996 and 2015. Although dollarization in Lao PDR has gradually declined, it remains relatively high. Foreign residents can hold domestic financial assets, domestic firms have freedom to undertake external borrowing without government guarantee. According to data from Asian Development Bank/Key indicators for Asia and the Pacific 2016, private non-guarantee external debt has shown an increasing trend, rose from 12.1 percent of total external debt outstanding in 2002 to

[25] Author's calculation based on data from Asian Development Bank/ Key Indicators for Asia and The Pacific 2016

38.7 percent in 2014. On the other hand, in 2015, foreign currency deposits at commercial banks amounted to Lao Kip 28,983.60 billion, accounted for 50.05 percent of total deposits.

On one hand, most of the commercial banks' credits to private sector are provided in foreign currency which has increased from 69.8 percent of total credits in quarter two of 2011 to 96.1 percent in quarter four of 2015[26]. The increase in loans provided in foreign currency is associated with the increased in the number of foreign banks registered in Lao PDR. The provision of credits in foreign currency is for enterprises having income in foreign currency, especially foreign companies engaging in export. However, foreign currency based lending is risky and not sustainable as it can lead to systemic risk in financial sector when local currency depreciates then the borrowers will face difficulties in loans repayment.

Another issue is high interest rates charged on loans provided by both banking sector and microfinance sector have hit SMEs in healthy investment and industry promotion. This hinders SMEs to obtain secure loans at low interest rates to finance their investments. Although commercial banks are highly competitive, and in late July 2015 the Bank of Lao PDR lowered the interest rates, the interest rates on loans remain high. As of 2015, the average commercial banks' interest rates on loans for Lao Kip account ranged between 11.75 percent and 14.6 percent for 1-year loan, whereas those of medium-term loan (1-3 years) and long-term loan (3-6 years) ranged from 12.29 percent to 14.6 percent and 12.8 to 14.6 percent, respectively, depending on types of customers[27]. Loan interest rates charged by microfinance sector are even higher than those charged by commercial banks. Loan interest rates charged by microfinance institutes as well as village savings groups and village funds, ranged from 2.5 to 3 percent per month[28] or 30-36 percent per annum, and some of them charge extremely high interest rates which are as high as 5 percent or even more than 5 percent per month.

As a part of government initiative to promote SMEs, through facilitating the access to finance, SME Promotion and Development Fund was established in 2010, and the implementation of the fund commenced in August 2012, managed by Department of SME Promotion under the Ministry of Industry and Commerce. The Fund is financed by loan from

[26] Monetary Policy Department, BOL 2016

[27] Commercial bank supervision department, Bank of the Lao PDR

[28] Champasack deposit-taking microfinance institute

the World Bank (US$ 20 million) and from government budget (US$ 2 million). It is two-step loan project to provide loans to SMEs at lower interest rates than those charged by commercial banks. The fund is to support low-interest loans (7percent per annum for short-term loan less than 1 year, and 10 percent per annum for 1-3-year term loan) to registered SMEs though commercial banks such as Lao Development Bank, ST bank, SACOM bank, and Lao-China bank. However, over the past three years between 2012 and 2015, only 75 firms obtained loans from the fund[29]. Moreover, the size of the fund is small, and inadequate to meet the demand for loan to SMEs in the country. Moreover, the interest rates remain high, which are higher than those provided by Nayoby bank (the specialized bank serving as a policy-based lending bank for poverty eradication).

3.1 Issues in Banking Sector

The government of Lao PDR allows commercial banks to freely determine interest rates both on deposits and loans based on market mechanism, hoping that highly competitive banking sector would facilitate domestic enterprises to access to diversified financial services, particularly low interest loans. However, in practice, the interest rates were relatively too high. Demand for loans has increased, resulting in commercial banks to raise interest rates on deposits to attract more depositors, thus drove loan interest rates to rise, hindering private sector, especially SMEs to have access to bank financing. Therefore, in late 2015, the Bank of Lao PDR has lowered the interest rates both on deposits and loans in Lao Kip accounts and foreign currency accounts. Ceilings for deposit and loan interest rates have been imposed to manage and lower the interest rate that commercial banks charge from borrowers, aiming at lowering cost of production and stimulating economic growth. Deposit interest rates at commercial banks must not exceed the inflation rate by more than 2 percent, and the interest rate spread must not exceed 4 percent, a decrease from the 5 percent imposed previously.

On the other hand, it should be noted that too much foreign bank presence leads to banking crisis. As can be seen during the global financial crisis, countries experiencing banking crisis were those having high level of foreign bank participation. Moreover, empirical evidence reveals that the increase in foreign bank presence has negative impact on credit creation in

[29] SME Development Plan for 2016-2020 (Amended version), November 11, 2016

developing countries since accessing to credit information is difficult for local people (Claessens and Horen 2012).

Banking sector in Lao PDR is at initial stage of development. In 2015, total banking assets accounted for 97.29 percent of GDP, while deposits and credits accounted for approximately 54 percent and 48 percent of GDP, respectively. Level of deposits exceeds that of credits reflects the low financial intermediary of banking sector in Lao PDR. Although savings in banking system has increased over a decade, the degree of channeling the savings into investment remains low. Credit to deposit ratio, though it has been showing a rising trend, credit accounted for only 89.25 percent of deposit, reflecting the low degree of financial intermediary of banking sector. Much of deposits in banking sector is short-term deposit, restraining on providing long-term lending by banking sector.

On the other hand, credits provided by commercial banks including foreign banks cannot be relied on domestic investment, rather, those banks focus on consumer credits, especially loans for purchasing cars. The availability and increase in consumer credits discourage households' savings rate as they lack incentive to save given the availability of credits for consumption. Financial intermediation efficiency, as measured by the spread of lending and deposit interest rates, is the highest compared with ASEAN countries, indicating high cost of bank financing. Therefore, only few enterprises, especially large enterprises used bank credits to finance their business start-up and activities while most of firms, SMEs, relied on internal and informal financing sources.

During the past five years, 2011-2015, total credit provided by commercial banks as percentage of GDP has increased from 29.52 percent to 48.09 percent in 2015. Since the banking sector is dominated by state-owned commercial banks, most of credit provided focused on government projects: infrastructure construction, while loans to private sector seemed limited (Ministry of Planning and Investment 2013).

Commercial banks which dominate financial sector in Lao PDR, have been facing difficulties in deposit mobilization, especially in terms of long term deposit. Although deposits have increased, majority of the deposits at commercial banks are held in forms of short-term deposits (less than one year). This is due to the lack of mechanism to mobilize long-term deposits for financing long-term investments as well as lack of policy-based lending system to allocate long-term financing for productive investments.

TABLE 7: COMMERCIAL BANKS' DEPOSITS, % OF TOTAL DEPOSITS IN BANKING SECTOR

Year	Current deposit	Savings Deposit	Term Deposit					Residents' Deposit	Non-Resident Deposit	Other Deposit
			Total	3 Months	6 months	12 months	>12 months; <24 months			
2010	20.94	26.27	46.91	7.95	10.67	23.76	4.53	94.13	5.87	0.04
2011	19.10	25.70	48.09	8.60	7.64	26.11	5.73	92.89	7.11	0.51
2012	16.05	23.80	54.95	10.28	7.94	29.98	6.75	94.80	5.20	0.74
2013	14.54	22.41	56.86	10.64	8.23	31.02	6.97	93.82	6.18	0.05
2014	16.18	23.88	53.54	7.54	8.63	28.63	8.73	93.59	6.41	0.00
2015	16.61	25.34	51.95	3.73	3.50	22.09	22.64	93.90	6.10	0.03

Source: Author's calculation based on data from Bank of the Lao PDR's annual report 2013 and 2015

As indicated in the table 7, majority of the deposits mobilized by commercial banks held at short-term deposits. by the end of 2015, Time-deposits (12-24 months) was amounted to only Lao Kip14,132.71 billion, accounted for only 22.64 percent of total deposits while saving deposit amounted to Lao Kip15,817.22 billion (accounting for 25.34 percent of total deposits), and time-deposit less than 12 months was Lao Kip13,798.79 billion, accounted for 29.3 percent of total deposits. This indicates that most depositors are from corporate sector rather than household sector or individuals. This is one of the big challenges facing commercial banks to secure providing credits for long term investments. Furthermore, while majority of the mobilized deposits is characterized as short-term deposit, most of the deposit is allocated to construction of infrastructure which is long term investment, indicating instability of commercial banks.

Despites the increase in number of banks and services provision, most of banks concentrate in major cities, especially in Vientiane Capital, and those who have access to bank services are large enterprises whereas SME and micro enterprises rely mainly on informal financing source for their business. Moreover, the presence of too many foreign banks (which has increased rapidly since the promulgation of Law on Commercial Bank) in a small open economy like Lao PDR can introduce financial instability, and jeopardizes money to be easily flown out. Also, those banks are more likely to provide credits for foreign companies operating in Lao PDR as well as to exploit the high lending interest rate in the country.

On the one hand, before February 2004, credits provision was more agricultural and forestry sector promoted with lower loan interest compared with other sectors. 1-year lending or loan interest was 19 percent per annum for agriculture and forestry sector whereas 22 percent for industry and handicraft, 24 percent for construction, and 25 percent for service sector. Since 2005 onward, as banking sector become increasingly competitive, lending interest rates have been reformed depending upon lending term regardless of lending by sector. Moreover, although commercial banks, for instance, Lao Development bank and Aceleda bank, which are commercial banks aiming at providing credits to SMEs, the lending interest rates are indifferent among commercial banks. Interest rates on loans depend upon commercial purpose and time loans. In addition, commercial banks require too much collateral from SMEs (usually up to 3 times the Loan amount). Moreover, only land and building, some other tangible assets are accepted as collateral, and the maximum loan provision is up to only 60 percent of the collateral. Therefore, these hinder and discourage SMEs from borrowing from banks.

3.2 Issues in Microfinance Sector

Microfinance sector consists of formal and semi-formal microfinance. The formal microfinance is under the Lao Central Bank's supervision, consisting of 3 categories of microfinance institutes (MFIs): Deposit Taking MFIs (DTMFIs), Non-Deposit Taking MFIs (NDTMFIs) and Savings and Credit Unions (SCUs). Apart from the formal microfinance institutes under the central bank (Bank of Lao PDR) supervision, microfinance sector has been dominated by semi-formal microfinance which includes village savings groups, deposit-taking and non-deposit taking village funds, supervised by the Lao Women Union, Lao Front for National Construction, and other organizations.

Microfinance is relatively small in terms of assets, deposits mobilization as well as credit provision, compared with banking sector. As of December 2015, there were 147 formal microfinance institutes and 4,815 village savings groups. Total assets of registered microfinance institutes nationwide amounted to 444 billion Lao Kip[30], accounted for only 0.5 percent of total assets of commercial banks. Additionally, Loan interest rates charged by microfinance institutes as well as village savings groups and village funds are high, ranging

[30] Financial Institution Supervision Department, Bank of the Lao PDR

from 2.5 to 3 percent per month[31] or 30-36 percent per annum, and some institutes and funds charge interest on loans even more than 5 percent per month or 60 percent per annum.

Furthermore, microfinance sector lacks efficiency in terms of financial intermediation. By the end of 2015, total deposits mobilized by formal microfinance institutes amounted to approximately Lao Kip 303.6 billion while total credit amounted to only Lao Kip 290.1 billion. Whereas deposits mobilized by semi-formal microfinance amounted to approximately Lao Kip 523 billion, and total credit amounted to Lao Kip 525 billion[32]. This amount of credits includes credits provided by non-deposit taking village fund, indicates low efficiency in financial intermediation. Many of village savings groups have been facing excess funds problem, whereas some savings groups have suffered from fund shortage (Fujita 2015).

Although microfinance sector has grown over the past years, a large demand for financial services in the Lao PDR remains unmet as the outreach of the existing microfinance providers is still very limited and scattered. It is estimated that only 25 percent of Lao households have access to financial services. In addition, the sector remains weak and faces multiple challenges: Many microfinance institutes (MFIs) deal with high portfolio at risk levels and the capacity of staff as well as the governance level is low. Most MFIs are small with limited outreach. Several microfinance institutes (MFIs) haven't reached profitability yet and still depend on donor support.

In addition, a lack of awareness on microfinance good practice coupled with challenges in Microfinance sector has expanded drastically in recent years. Microfinance institutes (MFIs) have rapidly increased as part of government promotion to enhance access to finance, however, SMEs have not benefited from the microfinance sector. Almost 70 percent of SMEs required financing to expand their business, however, financing received from microfinance sector was limited. Micro enterprises received financing from micro credit schemes only 1.85 percent of total external financing, whereas small enterprises received only 2.37 percent, and medium enterprises received 5.13 percent of their total external financing[33]. In addition, most of loans

[31] Champasack deposit-taking microfinance institute

[32] Microfinance Statistics 2013, Bank of the Lao PDR

[33]GIZ (2014) HRDME Enterprise Survey 2013 for Lao PDR, Vientiane, July 2014

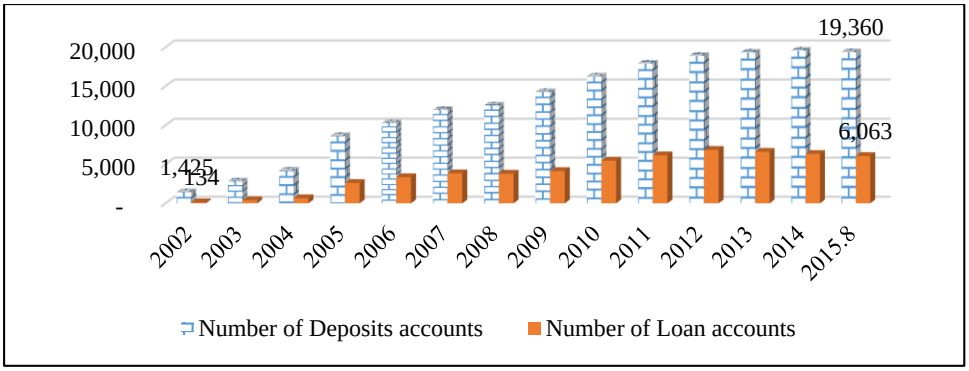
was attributed to loans for smoothing household consumption, and most microfinance institutes concentrated in Vientiane Capital.

3.3 Issues in the Lao Postal Savings Institute (LPSI)

The Lao Postal Savings Institute is relatively small and has different function from which of Japan and other countries. Initially, the Lao Postal Savings Institute was established to collect small savings from ordinary people and re-deposit the mobilized savings at the Trust Fund under the Ministry of Finance to finance prioritized and long-term investments. However, due to limited capacity of the postal network and facilities, technical problems, insufficient infrastructure and equipment well as limited registration capital and mobilized fund, the Trust Fund could not be established. Therefore, the current function of the Lao Postal Savings Institute does not serve as a public vehicle to mobilize small savings for productive investments as the initial set target. The current function of the Lao Postal Savings Institute is characterized by deposit-taking microfinance institute in its nature, providing financial services, especially loans to government employees to smooth household consumption. Therefore, the mobilized savings are not utilized to finance for investments in production of goods and services. Moreover, the Lao Postal Savings Institute charges interest on loans as high as the same rates charged by other microfinance institutes.

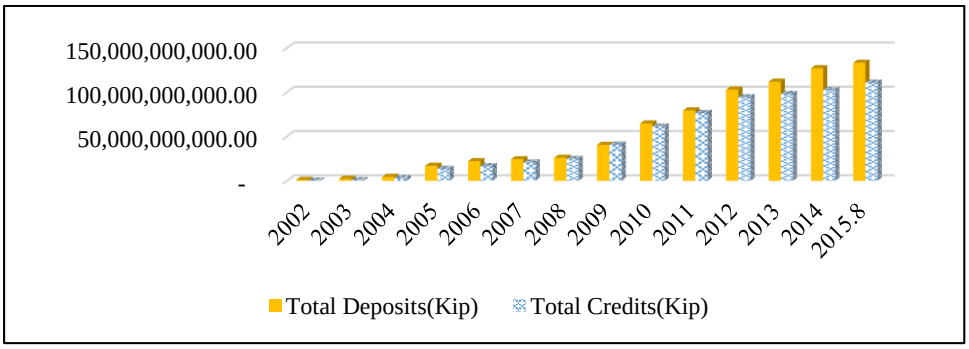
Financial services provided by the Lao Postal Savings Institute has increased dramatically, however, the services are provided at central and provincial levels and has not yet extended to district and village levels. Deposit account at the Lao Postal Savings Institute increased from 1,425 accounts in 2001 to 19,360 accounts in 2015, whereas loan accounts increased from 134 accounts to 6,063 accounts. The amount of total deposit and loans have also increased along with the increase in number of customers. However, as shown in figure13, throughout the period between 2002 and 2015, the amount of deposits exceeded that of credits, indicating low efficiency in terms of financial intermediation, especially in the recent five years.

FIGURE 14: DEPOSIT AND LOAN ACCOUNTS AT LAO POSTAL SAVINGS INSTITUTE (LPSI)



Source: Lao Postal Savings Institute

FIGURE 15: TOTAL DEPOSIT AND CREDIT AT LAO POSTAL SAVINGS INSTITUTE (LPSI)



Source: Lao Postal Savings Institute

Most of the Lao Postal Savings Institute's customers are government employee, accounting for 64 percent of total customers of the Lao Postal Savings Institute while 21 percent are ordinary citizens, students 14 percent and businessmen and merchant only 1 percent. This indicates that the money mobilized by the Lao Postal Savings Institute has been utilized for smoothing household consumption rather than to finance investments.

Given the large infrastructure of postal network, and the Lao Postal Savings Institute has already existed, it is worth to utilize the existing facilities to collect savings from ordinary citizen and allocate the savings to finance productive investments as Japan did during the post-war period.

3.4 The Lao Securities Exchange

The Lao Securities Exchange is relatively small compared with other countries. As of 2015, there were only 5 listed companies in the stock market, with 12,076 securities accounts, consisting of 36 local institution investors, 9,614 local individual investors, 2,360 foreign

individual investors, and 66 foreign institution investors. Market capitalization was also small, only US$1.5 billion, and average daily trading volume of only Lao Kip800 million or US$ 100,000. Although majority of the securities accounts were held by local investors, most trades (more than 90 percent) on the Lao stock market were made by foreign investors, rather than domestic investors[34].

In sum, Lao PDR has been facing domestic financial shortage and large Investment-Savings (I-S) gap. Investments have been substantially financed by external funding in forms of loans and FDI as well as Official Development Assistance (ODA). The country has substantially relied on external borrowing to finance investment projects. Additionally, the inflow of FDI has skewed to some sectors such as mineral excavation and electricity generation, which have not contributed to employment generation as expected. Although the country's economy has marked high growth in the past decade, the growth has been fragile and unsustainable.

The country lack of appropriate mechanism for mobilizing domestic savings and channeling the mobilized funds into productive investments. In addition, the current financial sector has facing difficulties in mobilizing long-term savings, and unable to sufficiently supply long-term loans for investments. Moreover, interests on loans charged by financial sector are fairly high, hindering SMEs development. Therefore, it is required to have an effective mechanism to mobilize domestic savings and allocate the mobilized savings to productive investments as well as SMEs.

4. The need for SMEs development and financial support for SMEs

Since SMEs play a crucial role in the country's economic development, policy measures for SMEs development, especially for providing financial supports to ensure strong development of SMEs are needed and as efficient method of enhancing sustainable economic growth. This will be beneficial for population nationwide through employment and income generation. SMEs development requirements need not only sufficient long-term capital, but also low interest loans. However, financial institutions providing long-term financing at low

[34] Lao Securities Exchange market performance 2015, Lao Securities Exchange: www.lsx.com.la

interest rate do not exist in the Lao PDR. Therefore, policy-based, long-term financial institution initiated by the government is needed at this early stage of economic development to assist SMEs development and enhance their competitiveness.

Indirect subsidies or policy-oriented credits are needed for prioritized SMEs that are closely linked to the increase in income level of the poor as well as SMEs in growth enhancing sector. On the one hand, prioritized sector or SMEs are needed to be clearly defined to avoid confusion and overlapping with other sector and enterprises seeking funding from financial sector.

To effectively use of policy-based loans for SMEs, it requires specialized financial institution or specialized bank to manage such policy loans. With specialized and well-organized development financial institution, it would be an option to promote SME development under government's prioritized areas and sectors to enhance income generation, especially to raise income level of the poor, and eventually raise country's domestic savings level.

4.1 Potential funding sources, mobilizing domestic savings and allocating of the mobilized funds

The current stage of Lao economic development, especially SMEs development requires the establishment of development financial institution to mobilize domestic long-term savings to finance long-term loans at low interest rate for prioritized SMEs. Domestic sources of funds are available in the current financial system, and those funds must be effectively mobilized.

4.1.1 Potential funding sources

The possible sources of funds that the government would seek are individuals and households' deposits at postal savings, commercial banks, other financial institutions, pension funds, insurance funds, and public bond issuance as well as government's budget.

a) Households and individuals

The financial access survey (FinScope Survey 2014) in Lao PDR revealed that of total 4,267,261 adult population nationwide, 64 percent are unbanked or lack of access to bank services, and almost 70 percent reside in rural areas. On the other hand, due to unavailability of

formal financial services, rural people save their retained income in various forms, for instances, livestock, and deposit at village development funds or village banks including savings groups, jewelry or gold, and keep in secret place at home. In addition, savings rate of rural households was higher than that of urban households, regardless of small amount of savings (Nolintha, Songvilay and Bannalath 2007). This implies that large demand for secure savings products remains unmet.

On the one hand, due to most of Lao population reside in rural areas and rely on farm income which is low now, raising farm income is crucial to enhance the amount of savings of large proportion of ordinary people as it has great potential for pooling small savings.

On the other hand, the current banking sector as well as formal microfinance institutions are reluctant to extend financial services, especially deposit facilities are limited in terms of geographical coverage due to high cost of service provision, utilizing the large outreach of the postal infrastructure to collect savings from small savers is the most efficient way to pool a large amount of fund for the development financial institution.

b) Funds from savings surplus savings groups

As mentioned in the former section, savings groups are relatively large in terms of numbers and geographical coverage, and most of savings groups had faced savings surplus, indicating lack of efficiency in financial intermediation. Thus, such excess funds should be effectively channel into the development financial institution to finance investments in growth enhance sector, such as prioritized SMEs. Additionally, village savings groups operate or open for collecting deposits only few days a month, limiting access to deposit service for savers.

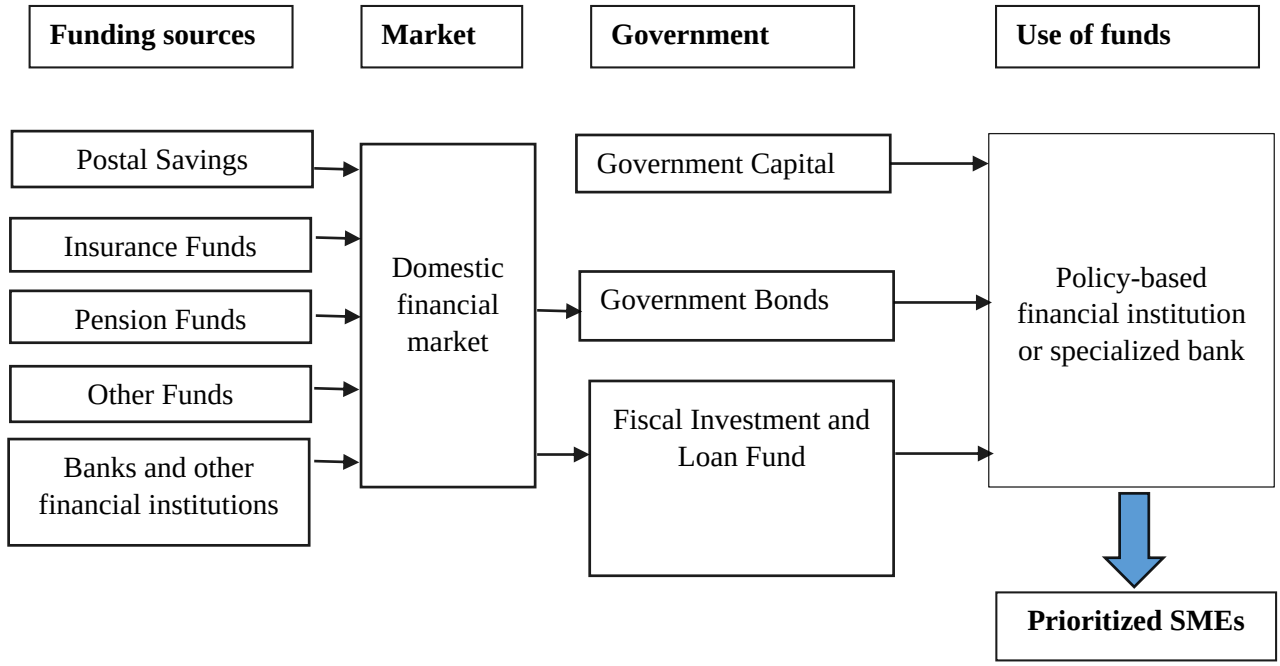
4.2 Mobilizing domestic savings and allocating of the mobilized funds

Under the condition of low domestic savings level, mobilizing long-term funds for the development financial institution seems difficult. Initially, it requires great support from government by providing some amount of capital to the development financial institution. In addition, issuing government guaranteed bonds is needed to absorb domestic savings to finance the development financial institution's activities or prioritized SMEs. However, issuing government bonds may crowd out private financing function, and under the countries fiscal difficulties owing to chronic fiscal deficit, the government bond would not be attractive for investors, individuals or commercial banks as well as other financial institutions to invest in.

However, without government initiatives, the long-term and low interest financial institution will not be established. Therefore, improving fiscal management and encouraging domestic savings should be prioritized.

Conceptual structure of raising funds from domestic private and public sectors is based on lesson drawn from the Japanese experiences presented in the chapter 2. The diagram below illustrates the process of fund raising for development financial institution.

Diagram 1: Process of domestic fund raising to finance prioritized investments



As illustrated by the diagram, the available funds in the domestic financial market are borrowed directly by the government through issuing long-term bonds or government guaranteed bonds at fixed low interest rate. If the financial market works properly, the funds can be absorbed from the market and channeled into investments in prioritized SMEs. This will also require macroeconomic stability, suitable law and regulatory framework, as well as sound fiscal management.

The main objective of the development financial institution is to provide supplementary loans to the large segment of the country's economy, especially to provide long-term and low interest loans for prioritized SMEs that unable to acquire loans from commercial financial institutions. However, its mission is not limited to only providing financial support, but also develop SMEs' business quality and environment by modernizing their operation and

improving managerial skills. The loans provided will assist SMEs finance business start-up, working capital, updating, improving and extending their business, to increase competitiveness.

Chapter 2: Asian experiences in domestic savings mobilization and literature review on impacts of foreign capital flows on economic growth and domestic savings

1. Selected Asian experiences in domestic savings mobilization

Many countries have been successful in mobilizing their domestic savings to finance investments in the development process, despite the lack of domestic resources. As evidenced by Japan's experience during the rapid growth period, and Singapore after independence. The government of Japan mobilized small savings and directed the savings to finance prioritized investments in industrial sector and investment in infrastructure through policy-based financial intermediary institutions. Savings promotion was also carried out, especially during the post-war period by establishing the council for saving promotion in 1952 to encourage household savings. Consequently, domestic savings level in Japan increased significantly during the 1950s and early 1970s.

Another successful case is exemplified by the case of Singapore. After independence, the country was confronted with financial shortage problems. At the initial phase of development between 1961 and 1965, the government focused on construction of physical infrastructure such as housing, water supply, power and gas, and seaport. Such investments required substantial amount of fund. However, two third of the investment fund[35] were raised domestically through effective and well-designed domestic savings mobilization schemes.

Domestic savings mobilization plays a crucial role in attaining sustainable economic growth. If domestic savings are properly mobilized and allocated to productive investments, it could boost sustainable economic growth. Increase in domestic savings level alone without effective mechanism to mobilize savings and allocate the mobilized funds, productive investments could not meet the financial need. Therefore, effective savings mobilization, especially long-term savings, and utilization of the mobilized funds, require government initiatives.

[35] Urban System Studies/Financing a city: Developing foundations for sustainable growth, Centre for Liveable cities, Singapore, First Edition 2014

Domestic savings can be tapped though different schemes: voluntary savings adopted by Japan and compulsory savings that Singapore adopted since the independence. Voluntary savings can be made as per requirement and the needs of the individuals or families. Money can be deposited in banks, post offices, banks, mutual funds, shares, and other institutions. The interest rate varies from time to time, and differ in various institutions. It is generally fixed depending upon the period of the deposited amount. Whereas compulsory savings are those that individuals and institutions are compelled to save as per government rules. This type of savings scheme is exemplified by the provident fund schemes and pension fund schemes.

1.1 Government involvement in setting up the promotion of household savings

Domestic savings mobilization mechanisms, both in the forms of voluntary and compulsory savings schemes, have been adopted in many Asian countries such as China, India, as well as Vietnam. In this study, experiences of Japan, especially during the post war period between 1950s and early 1970s, is focused to exemplify the successful case of small savings mobilization. The voluntary savings scheme adopted by Japan pooled a large amount of fund collected through postal savings system, which became the largest financial institution in the world in 1998, controlling one fourth of household financial assets in Japan (Cargill and Yoshino 2003). The Ministry of Finance of Japan had directed the funds mobilized through postal savings system towards national development goals, for instances, infrastructure development and industrial development. The mobilized savings were allocated through the Fiscal Investment Loan Program (FILP), enabling Japan to meet development goals (M. J. Scher 2001).

Other examples of domestic savings mobilization focused in this study are compulsory savings schemes adopted by Singapore and Malaysia, which are prominent countries having high and stable domestic savings rates. The countries have well-design mandatory savings schemes to mobilize long-term savings through provident funds. With stable, high rate of monthly contribution, the funds pooled large amount of savings to be utilized for long-term investments.

1.1.1 Voluntary Savings Mobilization Scheme: The case of Japan's experience

The prominent experience of Japan's domestic savings mobilization and allocation of the mobilized savings was during the post-war period until the 1970s. Japan's savings promotion movement was carried out under the government's initiative to achieve national goals. Savings were the crucial funding source for new industry development, thus, the government took supporting policies to catch up with advanced Western countries. After the Second World War, the government encouraged savings to rehabilitate the Japanese economy, and to suppress vicious inflation.

Japan was the most successful case in tapping small savings from ordinary people through the utilization of the postal network and allocating the mobilized funds to development projects through the Fiscal Investment Loan Program (FILP). Postal savings deposits were re-deposited with the Trust Fund Bureau of the Ministry of Finance, which serves as key source of funding for Fiscal Investment Loan Program (FILP). The deposits are utilized for infrastructure development, improvement the quality of life in Japan, and economic measures implemented by the government.

Postal Savings System (PSS) is the prominent feature of Japanese finance, it is Japan's largest financial institution holding 34 percent of household deposits, also sells life insurance accounting for 30 percent of life-insurance market. The financial resource of Postal Savings System (PSS) measured in terms of deposits of US$ 2.32 trillion, making it larger than any private or public financial institution in the world.

One of the most important pre-conditions enabling the Postal Savings System (PSS) and Fiscal Investment Loan Program (FILP) to be successful could be due to the availability of domestic savings to be tapped. The rapid economic growth of Japan during the 1950s and the early 1970s enabled the rise in Japan's household income as well as savings. Another factor was the unavailability of consumer credit during the period, as a result, the Japanese had to save in advance of purchasing of such high value goods, for instances, cars, and durable goods as well as housing. Moreover, before the 1973, public pension benefits were relatively low, compelling Japanese to save for their living after retirement. Furthermore, during that period, the Japanese society was dominated by working-age population (C. Y. Horioka 2007).

In addition, the availability of appropriate network infrastructure is indispensable to collect deposits from ordinary citizens. Postal Service System is large covering nationwide, and easy to access. On average, Japanese people live within 1.1 kilometers of a post office (Scher and Yoshino 2004). As of March 31, 2015, the post runs 24,160 branch offices, consisting of 122 branches, 222 sub-branches, 19,898 directly-operated post offices, and 4,035 contracted post offices[36]. As a result, the Japan Postal Savings System is the largest deposit-taking institute in Japan. On the one hand, regulations to Postal Savings System differed from those to the private banks. Before the privatization of the Postal Savings System, as the government-owned institute, interest income of three million Yen was tax exempted, attracting more savers to deposit at Postal Savings System.

Other factor behind the success of small savings mobilization in Japan was savings promotion program initiated by the government. For instance, dated back to the initial stage of the postal savings system in the 19th century during the Meiji Era, the government promoted thrift habit of people by introducing organization of schoolchildren's savings program to inculcate thrift.

With the passage of time and change in needs of the Japanese populace, the central council for saving promotion metamorphosis into the central council for savings information and the central council for financial services information in 1952 and 1988 respectively (The central council for financial services information 2014). In addition, the Fiscal Investment Loan Program (FILP) was established in 1952 to provide interest-bearing funds for prioritized investments as part of fiscal policy administration. Its function was to serve as a financial intermediary to the fiscal policy implementation by pooling funds mobilized from ordinary citizens and channeling them into public institutions which implement the investments in accordance with targeted policies.

The voluntary savings system adopted by Japan during the post war period played a crucial role in mobilizing domestic savings to finance investment in infrastructure projects and industrial development of the country. The government run Postal Savings System pooled large

36 Japan Post Bank Co. Ltd./Selected Financial Information for the Fiscal Year Ended March 31, 2015

http://www.jp-bank.japanpost.jp/en/ir/press/2015/pdf/en2015_sfi_2.pdf

amount of capital available for investments. Mobilizing small savings by utilizing postal infrastructure is the effective vehicle to tap deposits from small savers as well as farmers and non-salary employees. This is due to the existing postal facilities reach the large segment of population as well as the poor in rural remote areas, therefore, it can reduce the cost of extending financial services, deposit facilities, and pool large amount of fund.

Concerned public organization, especially under ministry of finance, was assigned to manage and allocate the mobilized funds, and Policy-based lending institutions were set aside to provide policy loans at low interest rate to the prioritized investments. This ensures the mobilized funds were effectively utilized for prioritized and productive investments.

1.1.2 Compulsory savings Schemes: The case of Singapore and Malaysia

The compulsory savings schemes adopted by Singapore and Malaysia, play a crucial role not only in ensuring steady income stream after retirement and easing medical expenditure burden, but also ensure stable and sustainable savings rate as fixed rate of contribution is set. With fixed and high rate of monthly contribution, the Central Provident Fund (CPF) of Singapore and the Employees' Provident Fund (EPF) of Malaysia have substantially contributed to stable and high domestic savings rates of the two countries for long period of time.

The contributory pension system, backed up by policies placing greater responsibility on the individual for financing old age, creates new opportunities for self-discipline in saving. This approach helps increasing investment in human capital and in physical assets such as housing.

a) Singapore's experience

Singapore is the country with high domestic savings rate, the highest among ASEAN countries. This high domestic savings performance has been dominated by the effective compulsory savings scheme, the Central Provident Fund (CPF).

The Central Provident Fund (CPF) scheme, under the Ministry of Manpower of Singapore, was introduced as the national funded pension scheme on 1 July 1955 under the British colonial government. It is publicly managed, mandatory program of private saving. Monthly deposits of 40 percent of salary are paid by employees and their employers. All

compulsory savings are tax exempted both at the time of deposit and withdrawal, and the withdrawal is permitted to be made when the members reach 55 years of age.

Although the Central Provident Fund (CPF) was evidently a pension fund for retirement, it was not meant to be the single social security system that it is today. Just before Singapore achieved self-government in 1959, a plan was in place to introduce a social insurance cum public assistance scheme to cater to the needy. At first, the scheme covered all employees in Singapore except those working in civil service or contributing to other approved provident funds. This plan was later scrapped, however, the first local government in 1959 believed it would take "available capital source from other even more pressing needs".

While the Central Provident Fund (CPF) scheme remained as Singapore's national funded pension scheme over the past four decades, its character has substantially changed. It retains its primary role as a pension fund for retirement, however, its functions have been expanded to include funding medical expenses as well as property and financial investments. Today, the Central Provident Fund (CPF) Board (Central Provident Fund Board is the official name) is more like mandatory savings bank, a significant portion of whose assets can be channeled to "desirable" activities like home ownership.

The evolution of the Central Provident Fund (CPF) scheme was not accidental. The scheme came about through a calibrated series of measures designed to exploit a critical pool of funds in a small country. However, one overriding principle that has not changed over the years is individual responsibility for one's own future.

The total 40 percent of income contributed by members maintain three accounts with the Central Provident Fund (CPF), is credited as: Ordinary account (which can be used for housing, approved investments, certain types of insurance, loans for college education expenses, and topping up parents' retirement accounts) for 30 percent, Medisave account (for hospitalization expenses) for 6 percent, and Special account (for old age and contingencies) for 4 percent. The high rate of contribution in coupled with the rising wages, the Central Provident Fund (CPF) system has been an important contributor to Singapore's high savings rate (Asher 1995). Almost all Singaporeans are required to be members of the Central Provident Fund (CPF). The accounts belong to individuals; deposits are mare by both employer and employee. The targeting of accounts for specific purposes may encourage members to regard their Central

Provident Fund (CPF) contributions as personal savings rather than as taxes, thus minimizing the work disincentive effects of contributions.

The Central Provident Fund (CPF)'s member can also earn annual interest up to 3.5 percent on savings in Ordinary account, and up to 5 percent on Special account, Medisave Account, and Retirement account. Some of the mobilized savings through this mandatory savings scheme are invested in government securities, allowing the fund to be utilized for productive investment and ensuring the fund's members to earn interest income as an incentive for savings.

Besides, the voluntary savings scheme also played an important role in financing for development at the early phase. The Post Office Savings Bank (POSB) which was a national savings bank aiming at promoting thrift and mobilizing domestic savings from citizen. Deposits at the postal bank increased from SGD 91 million in 1971 to SGD 996 million in 1976, and this mobilized savings were invested in government securities, helping the government to utilize for financing infrastructure projects (Centre for Liveable cities, Singapore 2014).

b) Malaysia's experience

The Malaysian Employee Provident Fund (EPF) was established in 1951 pursuant to the Employees Provident Fund Ordinance 1951, under the National Director of Posts. The Employee Provident Fund (EPF) requires employees and their employers to contribute towards their savings for retirement, and these savings could be withdrawn at retirement or for special purposes before then. Under this scheme, the employees contributes certain percentage of their salary. As of 2012, the Employee Provident Fund (EPF) functioned by requiring a monthly contribution of at least 11 percent of each member's monthly salary to be stored in a savings account, while the member's employer is obligated to additionally fund at least 12 percent of employee's salary to the savings at the same time (13 percent in case of salary is below RM 5,000)[37]. However, since 2007, the monthly contribution of member above 55 years of age has been cut by 50 percent.

Since the beginning of the year 2007, a member's EPF savings consists of two accounts varying by their share of savings and withdrawal flexibilities. The first account, dubbed

[37] Employees Provident Fund: www.kwsp.gov.my

"Account I", stores 70 percent of the members' monthly contribution, whereas the second account, dubbed "Account II", stores 30 percent. The ‘Account I’ is restricted to withdraw until the period when the members reach an age of 55 years, is incapacitated, leaves the country or passes away. Withdrawal of savings from Account II however, is permitted for down payments or loan settlements for a member's first house, financing for education and medical expenses, investments, and the time when the member reaches 50 years of age.

As of March 31, 2014, the asset of the Employees Provident Fund stood at RM.597 billion (which was equivalent to US$184 billion), as a result, it became the fourth largest pension fund in Asia and seventh largest in the world.

Like the Central Provident Fund (CPF) of Singapore, the Employees Provident Fund require fixed monthly contribution from members, accommodating a certain portion of income to be saved and utilized for productive investment. Under the compulsory savings schemes, long-term savings mobilization could be attained, and ensure the availability funds for long-term investment. However, the rate of monthly contribution to the central provident fund of Singapore is higher than that of the Malaysia’ Employees Provident Fund. In addition, the Central Provident Fund of Singapore is more attractive for savings mobilization as the fund’s member can earn interest income from this mandatory savings scheme.

Apart from compulsory saving scheme, Malaysia has also adopted voluntary savings schemes by utilizing postal infrastructure to collect small savings from ordinary citizen and promote thrift habit of people nationwide. The Bank Simpanan Nasional or National Savings Banks which was established in 1974, taking over the functions of the former Postal Savings Bank and provided improved facilities and services to its depositors. The overall objectives of the banks are as follows:

- To promote and mobilize savings especially from small savers.
- To inculcate the habit of thrift savings.
- To provide saving facilities by public.
- To utilize the funds of the bank for investment and financing for economic development of the nation.

The bank set up its own branch offices in major towns throughout the country. In areas where branch offices are not warranted, post offices and postal vans with savings bank facilities

continued to be used to mobilize savings. Meanwhile, intensive publicity campaigns to promote the savings habit and to encourage thrift and savings among the public were conducted on a national scale. Regional promotional officers visited schools and business center to publicize the services offered by the Bank and to encourage the people to save with it.

In 1975, the Bank continued to serve its depositors through 526 post offices, including 135 postal mobile units, acting as agents for the Bank. Net deposits with the Bank in 1975 rose by 6.2 percent or US$ 32.5 million. During 1976, Bank Simpanan Nasional added three new mobile units to bring the number in the mobile fleet to five. These units, together with 538 post offices with savings bank facilities, including 147 postal mobile units, enabled the Bank to provide an increasingly wider network to serve depositors, particularly in the smaller towns and rural areas (Bank Simpanan Nasional 2014).

The case of Singapore and Malaysia: The compulsory savings schemes, especially the Central Provident Fund (CPF) of Singapore and the Employees' Provident Fund (EPF) of Malaysia, ensure stable long-term savings. This mandatory savings scheme is appropriate for tapping savings from salary employees. Under the compulsory savings scheme, long-term savings mobilization could be attained, ensuring the availability funds for long-term investments. Well-designed savings schemes attract more savers, thus enhanced domestic savings level. With fixed rate of monthly contribution, it ensures regular savings at a certain level. Therefore, it has contributed to stable and high savings rate of the two countries.

Japan as well as Singapore and Malaysia in domestic savings mobilization and allocation of the mobilized savings to the productive investments, have shown the clear picture of effective mechanisms of domestic savings mobilization to finance productive investments. The fundamental circumstances for the mechanisms to be successful, both compulsory and voluntary savings schemes, require government initiative and concrete policies as well as campaigns to promote savings and the thrift habit of the country's citizens. Savings promotion campaigns and policies were carried out continuously and reached all citizen nationwide as well as school children to raise awareness the importance of savings and to promote the thrift habit to ensure long-term savings. Interest income earned on deposits at policy-based financial institution, especially postal savings banks, was tax exempt, attracting more depositors.

Compared with the experiences of Japan, Singapore, and Malaysia, Lao PDR, lack of such concrete and effective mechanisms for domestic savings mobilization and allocation of

the mobilized savings. Consequently, several development goals have been unmet due to lack of long-term financing.

1.2 Domestic Savings Mobilization and allocation of the mobilized funds: Lessons for Lao PDR to undertake

In Lao PDR, SMEs and agriculture dominate the economy, have limited access to formal financing loans provided by commercial banks, as and interest rates levied are very high. Furthermore, most of SMEs rely on financing informal financing sources as well as loans from microfinance sector which charge even higher interest rates than those commercial banks. Whereas public investment projects have been substantially financed by foreign borrowing, resulting in high external indebtedness.

Therefore, there should be public financial schemes to support SMEs and the rural poor. Since majority of the population reside in rural areas, and most of household savings are held in forms of physical assets such as gold and precious metal, livestock, etc. Therefore, utilizing the existing postal infrastructure would be the most appropriate vehicle to collect small savings, and to pool a large amount of fund to finance SMEs development as well as prioritized productive investments. Since the postal infrastructure is large compared with those of other financial institutions, collecting small savings through postal savings will lead to economies of scale. However, improving postal infrastructure and financial service extension, especially collecting deposits, would be required to reach all segment of population. The main function of Lao postal savings institute should be served as a vehicle to collect savings, and the collected savings are to be directed towards prioritized investments through policy-based lending institutions.

For the compulsory savings scheme, it would also be an effective mechanism for tapping domestic savings in Lao PDR in the future. This is because majority of the population remains rely on low and unstable income sources such as subsistence agriculture and non-timber forest product. Mandatory savings scheme may not be effective now since it requires continuous contribution, however, it should be initiated to induce ordinary citizen to save more and ensure long-term savings as well as long-term financing for productive investments.

2. General features of capital flows and economies of selected ASEAN countries

2.1 General features of capital flows since the 1990s

Past studies on the impact of foreign capital inflows on economic growth and domestic savings in ASEAN have focused mainly on FDI, whereas study on the impact of short-term capital flows into this region is limited. Most of the studies emphasize on inflows of foreign capital, however, in terms of net inflows emphasis is limited. Therefore, the objective of this study is to investigate the impacts of foreign capital net inflows, in terms of both at aggregate and disaggregate levels, on real GDP per capita growth rate and gross domestic savings rate in selected ASEAN countries, namely, Indonesia, Malaysia, Philippines, Singapore, and Thailand over the past 26 years between the year 1990 and 2015. This study further emphasizes on recent years since 2000, to reflect the fundamental changes in the sheer size and components of capital flows.

This study is the first attempt to incorporate Lao PDR into the analysis of impacts of foreign capital inflows on economic growth and domestic savings. This is due to the country has also heavily relied on foreign capital inflows for economic development since the year the 2000s onward[38]. The data used is the latest data set to reflect the current situation of capital flows as well as domestic savings and economies.

One of the key macroeconomic policies for most of developing and emerging and economies is to achieve sustainable economic growth. Theoretically, savings and investment are the two key intermediate macro variables playing an important role in economic growth. Therefore, there have been enormous studies on the relationship between savings, investment, and economic growth. Dated back to the (H. F. Harrod 1939) and (Domar, Capital Expansion, Rate of Growth, and Employment 1946) growth model argued that saving is the main driving force for economic growth. Many economists have advocated its positive roles in the growth process irrespective of its origin whether it is mobilized domestically or coming from overseas.

[38] Lao PDR is excluded from the 1990-2015 studied period is due mainly to the unavailability of the country's data on domestic savings, domestic investment, and domestic credit to private sector between 1990 and 1999.

During the 1990s, developing countries with higher self-financing ratios, which were financed by domestic savings without reliance on external borrowing, grew faster than those with the low self-financing ratio (Aizenman, Pinto and Radziwill 2007). However, the development process of many developing and under-developed countries is constrained by insufficient domestic resources. Therefore, foreign savings are encouraged via unrestricted capital flows in forms of direct investment, portfolio investment, and loans, to meet up the two conventional gaps: investment-savings gap and export-import gap.

Since the 1980s, international capital movement, flows of capital from developed countries to emerging and developing countries have sharply increased and impact of foreign shocks on emerging economies have become greater. In ASEAN region, the surge of foreign capital inflows began in the early 1990s, and ended abruptly with the Asian financial crisis triggering in 1997–98 while the second surge began in the early 2000s and again ended abruptly with the global financial crisis in 2008. During the 1990s, the ASEAN region has been the largest recipient of FDI, as well as short-term capital inflows, relative to gross domestic product (GDP). In addition, as pointed out by (Montiel and Reihart 1999) that the Asian financial crisis in 1997 was exposed to the increase in short-term capital flows or "hot money" owing to the policy response to the surge in capital inflows. The Asian financial crisis revealed that capital flows are volatile due primarily to short-term debt inflows, indicated by the sudden stop of short-term capital inflows (portfolio investment and other investment) followed by the massive outflow of the capital. Besides, FDI inflow also reduced during the years of crises hit. Therefore, to cope with the crisis, Malaysia and Thailand imposes capital controls to prevent massive and sudden capital outflow.

Although foreign capital inflows, especially long-term capital like FDI, have contributed to high economic performance in these countries, it is volatile and unsustainable financing source for development. As pointed out by (Rand and Tarp 2002) that FDI inflows are very volatile. In the study, they assessed the relationship between FDI and output, the general relationship between the two variables was not found, and indicating there is no connection between domestic investment and FDI. Indeed, they showed that FDI is much volatile than foreign aid flows. As such, they argued that stabilizing FDI is important to modify business cycle fluctuations. On the other hand, for the case of Lao PDR, the inflow of FDI has concentrated on capital intensive sector: mining and electricity generation, which has driven economic growth but not generated substantial employment in the country.

The volatility of foreign capital inflows is evidenced by the experienced of the ASEAN countries during the 1990s, especially Thailand in which the 1997 crisis triggered, and the country was severely hit, that the so call "bubble economy" was fueled by the voluminous inflow of short-term loans, which peaked at 9.8 percent of GDP[39] in 1995, and then turned out to stop, followed by massive outflow with the net inflow marked -15.4 percent of GDP in 1998, resulting in the economic meltdown.

Numerous studies have been conducted to investigate the effects of capital account liberalization on economic growth as well as on domestic savings. Empirical evidence pointed out the volatility capital flows that in recent years, capital flows influence pro-cyclically on the economy of emerging countries, and foreign capital flows have a negative impact on domestic savings, especially small countries with capital and financial account liberalization. (OHTA 2015), (Ocampo and Palma 2008). Before the crisis hit, economic development which is fueled by short-term capital flows or "Hot Money", is highly vulnerable to the crisis as pointed out by (Mishra, Mody and Murshid 2001) that more intense private capital flows are associated with the more intense crisis.

The presence of substantial foreign capital flows may displace domestic savings/investment, resulting in high level of external reliance for economic development which may confront the countries with external shocks. Large short-term inflows lead to an investment boom in the equity and real estate markets and increase the fragility of the financial system. As can be seen during the crises hit, the sudden stop of capital inflows and massive capital flight, and decline in FDI inflow as well as portfolio investment, leading to the economic growth to plunge and income per capita fell.

2.2.1 Asian experiences of financial crisis and capital controls after the crisis: The case of Malaysia and Thailand

The increase in financial liberalization during the early 1990s led to the Asian economies to become attractive locations for international capital flows. The investment atmosphere of East Asia had been attractive for investors, for instance, spectacular growth rates which led to high interest rates and lured foreign investors in search of high returns, bringing about asset bubbles. The inflows of capitals coupled with a fragile financial sector and weak

[39] Author's calculation based on data from IMF/IFS

macroeconomic fundamentals, led to the financial crisis in 1997, resulting in collapse of currencies, asset prices and stock markets in several East Asian countries.

Therefore, after the crisis, Asian countries, especially Malaysia, since September 1998, have imposed measures to control flows of capital, short-term capital. However, for the case of Thailand, the capital controls were introduced since the beginning of 2003 after the IMF program terminated.

2.2.1.1 Malaysia

In Malaysia, capital controls were introduced on September 1, 1998, Malaysian authorities imposed new regulations to prevent speculation on the ringgit and the outflow of short-term capital. Before the crisis, the Ringgit, the Malaysian national currency was internationally and freely traded prior to the 1997 crisis. After the crisis, the Ringgit sharply depreciated, the central bank imposed strict capital controls and introduced a 3.80 peg against the U.S. dollar to prevent massive outflow of the Ringgit in the open market, and consequently, the Ringgit became non-internationalized. Travelers must declare to the central bank in case of taking more than RM 10,000 out of the country. In addition, the government imposed controls on the amount of currency and investments that the residents can take abroad, and restricted foreign portfolio fund. Moreover, investment income of foreign investors must be retained in the country for one year to prevent short-term capital flight, and imposed restriction on transfer of capital held by residents.

However, the degree of capital restrictions for net capital inflows during this period tended to be higher than that in Thailand, since in February 1999, the central bank of Malaysian imposed graduated exit levies to discourage foreign investors to bring capital out of the country swiftly. Since then, the central bank has gradually liberalized the restrictions, for instance, the exit levy on profit repatriated after 1 year from the month the profits are realized was abolished and only portfolio profits repatriated within 1 year remained subject to the 10 percent levy. Therefore, after the crisis, the investment income has been no longer freely repatriated that is the investment income of foreign investors must be kept in the country for at least one year, leading to more funds retained in the country, resulting in the greater positive impact of FDI on domestic savings rate.

Capital reversal in Malaysia was far less than in other crisis-affected Asian countries during the Asian financial crisis. This might be due to the negative sentiment generated by the imposition of graduated exit levies on 15 February 1999. Net capital inflows dropped noticeably in 2001, mainly due to the sharp decline in FDI resulted from the collapse of the dotcom bubble. Net outflows of capital (asset side) started to gather momentum during the 1997 crisis period and has continuously increased since then.

2.1.2 Thailand

In 1994, Thailand fully liberalized its current account transactions, allowing greater freedom for foreign investment, as a result, massive short-term capital had flown into the country. The influx of capital was not only the acceleration of foreign loans but also the increase in share of short-term loans, portfolio investment, nonresident deposits and trade credits. The massive amounts of capital inflows had been allocated to speculative and unproductive and investments such as real estate, luxury resorts, golf courses, facilities for entertainment and luxury services. Large influx of short-term capital together with Thailand's weak financial system and misuse of the capital, led to the incurrence of the crisis in 1997.

Unlike Malaysia, after the crisis, Thailand adopted the IMF program with a stand-by credit of US$17 billion from August 1997 to July 2003. The IMF encouraged the country to raise interest rates to attract foreign investors to the securities. However, these higher interest rates led to slower growth in Thailand's economy.

After the termination of the IMF program, Thailand introduced many capital restriction measures beginning 2003 to discourage net capital inflows and encourage net capital outflows. Most of the capital controls imposed on non-residents were generally aimed at reducing speculative attacks by reducing non-resident holding of the baht (without underlying trade and investment) and eliminating the offshore Baht market, which could otherwise provide ammunition for speculators looking to attack the local currency. The controls were, for instances, limiting on holding of non-resident baht accounts to THB300 million, and the THB50 million rules on short-term lending to and borrowing from non-residents. Controls were also imposed on residents to limit foreign currency risk exposure, both on investment abroad and short-term borrowing.

2.2 Overview of economic development and investment-savings in selected ASEAN countries

Growth rates of real GDP per capita of ASEAN countries, except Lao PDR, were relatively high during the years before the 1997 Asian Financial crisis hit. The high growth economic growth was driven by the large influx of foreign capital, especially FDI and other investment during the investment boom period. After the 1997 crisis hit, the economic growth of the ASEAN countries has slowed down. For the case of Lao PDR, high economic growth rate emerged in the recent period, especially since the 2006.

Domestic savings and investment in the 6 ASEAN countries over the past 26 years vary across countries. As indicated in the table 8 below, Singapore and Malaysia are the countries having high domestic savings rate, especially Singapore that has the highest domestic savings rate which exceeds investment rate throughout the 1990-2015 period. The high savings rates of the two countries attributed to the domestic savings mobilization mechanism through compulsory savings schemes. In contrast, Lao PDR and Philippines are the countries with lowest domestic savings rates compared to other countries, and investments exceed savings. However, it should be noted that although domestic saving rate of the Philippines is low, its national savings which are calculated as national income less total consumption plus net transfer, the national savings or gross savings rate is highest among the ASEAN countries, 53.7 percent of GDP approximately during 2005 and 2009, and peaked at 60.8 percent of GDP in 2010[40]. The high national savings rate of the Philippines was attributed to substantial inflows of remittances.

It is also shown in the table 8 that investment level of the ASEAN countries was relatively high during the 1990s while in the recent periods, since the 1997 crisis, investment has declined. The high investment level in the 1990s was due mainly to substantial inflows of FDI in the period, especially before the Asian financial crisis. In the recent period, the decline in gross domestic investment, in advanced ASEAN countries: Singapore and Malaysia might be resulted from the increase in outward investment from the countries owing to the evolving

[40] World Bank/World Development Indicators 2016

ASEAN Economic Community, which promotes free flows of investment and freer capital flows.

For the case of Lao PDR, domestic investment, especially since the 2006, domestic investment has surged due to the large influx of FDI in mining and electricity generation. As addressed in chapter one, although economic performance in the past has been high, the signs of fragility have been observed, rising concerns that key elements required for sustainable economic growth remain weak. Low level of domestic resource mobilization, low domestic savings which lags far behind the investment level, and high dependence on external assistance.

TABLE 8: ECONOMIC AND SAVINGS/INVESTMENT IN SELECTED ASEAN COUNTRIES

Country	Data	1990-1996	1990-1999	2000-2009	2010-2015
Indonesia	GDP per capita growth, %	6.24	**3.19**	**3.71**	**4.29**
	Domestic Savings, % of GDP	30.97	28.15	25.47	31.93
	Domestic Investment, % of GDP	31.97	28.39	25.00	33.98
	Total capital net inflows, % of GDP	2.98	1.22	-2.36	1.84
	FDI net inflows, % of GDP	1.41	1.04	-0.13	1.42
	Portfolio net inflows, % of GDP	1.24	0.33	0.82	1.55
	Other net inflows, % of GDP	1.66	0.94	-1.82	-0.09
	Trade, % of GDP	53.40	58.89	59.32	47.52
	Credit to private, % of GDP	51.66	49.61	22.86	29.91
Malaysia	GDP per capita growth, %	6.66	4.52	2.88	3.96
	Domestic Savings, % of GDP	38.07	40.65	36.30	36.01
	Domestic Investment, % of GDP	38.72	42.98	26.87	24.73
	Total capital net inflows, % of GDP	4.97	0.91	-10.32	-4.13
	FDI net inflows, % of GDP	6.46	5.65	-0.08	-1.20
	Portfolio net inflows, % of GDP	-0.88	-0.73	-0.51	1.50
	Other net inflows, % of GDP	3.87	0.74	-5.26	-2.89
	Trade, % of GDP	166.93	178.13	196.58	145.99
	Credit to private, % of GDP	104.08	117.80	112.48	113.95
Philippines	GDP per capita growth, %	0.40	0.38	2.56	4.54
	Domestic Savings, % of GDP	16.46	15.89	16.05	16.19
	Domestic Investment, % of GDP	22.89	22.73	20.23	20.05
	Total capital net inflows, % of GDP	9.07	8.52	-2.35	-5.19
	FDI net inflows, % of GDP	2.53	2.75	0.71	-0.69
	Portfolio net inflows, % of GDP	2.67	2.53	0.91	1.51
	Other net inflows, % of GDP	8.47	7.15	-1.63	1.61
	Trade, % of GDP	71.66	80.34	93.19	64.76
	Credit to private, % of GDP	28.47	33.76	31.94	35.28
Thailand	GDP per capita growth, %	7.18	4.11	3.57	3.29
	Domestic Savings, % of GDP	35.75	35.40	30.31	30.75
	Domestic Investment, % of GDP	41.45	36.46	24.95	25.98
	Total capital net inflows, % of GDP	6.95	3.29	-3.80	-1.97
	FDI net inflows, % of GDP	1.37	2.27	2.78	0.34
	Portfolio net inflows, % of GDP	1.60	1.44	0.33	-0.72
	Other net inflows, % of GDP	7.15	1.62	-3.00	0.15
	Trade, % of GDP	80.75	86.12	126.18	132.48
	Credit to private, % of GDP	112.82	123.73	93.14	107.13
Singapore	GDP per capita growth, %	5.26	4.13	2.90	4.02
	Domestic Savings, % of GDP	48.33	49.34	48.88	53.64
	Domestic Investment, % of GDP	34.86	34.65	25.38	28.37
	Total capital net inflows, % of GDP	-11.95	-14.12	-18.66	-20.12
	FDI net inflows, % of GDP	5.40	5.61	5.02	9.41
	Portfolio net inflows, % of GDP	-7.37	-8.92	-14.46	-16.85
	Other net inflows, % of GDP	0.35	-1.94	-1.30	-8.44
	Trade, % of GDP	327.14	326.68	391.34	360.67
	Credit to private, % of GDP	83.41	89.09	97.29	117.78
Laos	GDP per capita growth, %	3.60	3.74	5.18	6.20
	Domestic Savings, % of GDP	N/A	N/A	12.73	17.90
	Domestic Investment, % of GDP	N/A	N/A	23.47	29.14
	Total capital net inflows, % of GDP	8.75	8.83	6.80	10.72
	FDI net inflows, % of GDP	3.15	3.63	2.90	5.17
	Portfolio net inflows, % of GDP	N/A	N/A	N/A	1.40
	Other net inflows, % of GDP	5.57	5.18	3.90	4.16
	Trade, % of GDP	51.42	58.94	74.78	86.43
	Credit to private, % of GDP	5.65	6.88	8.23	33.58

Source: Author's calculation based on data from IMF/ IFS and World Bank/World Development Indicators 2016

The global financial crisis led to the decrease in demand for imported goods in international markets, affecting the decline in export from ASEAN countries. Besides, The ASEAN-5 countries such as Indonesia, Malaysia, the Philippines, Thailand, and Singapore, are quite more open to trade and involved in production chains, for which China is the processing hub or destination. These countries have the large export of commodities, either raw or processed (such as refined petroleum in Singapore and petrochemicals in Thailand). Therefore, China's slowdown and rebalancing may have a large impact on the countries' export to decline. On the other hand, the large-populated country like Indonesia, external trade is relatively small in terms of share of GDP, and domestic trade of this country might be more important as it has the large domestic market. On the contrary, the lower income countries such as the Philippines, and especially Lao PDR, have chronic trade deficit throughout the studied periods.

3. Literature review on impact of foreign capital flows on economic growth and domestic savings

International capital movement from developed countries to emerging and developing countries have sharply increased and impact of financial crises on emerging economies have become greater in the past two decades. The empirical studies conducted in the past may not fully reflect the recent or current situation and impact of capital flows on economic growth and domestic savings. Most of past studies emphasized on countries outside ASEAN region. In addition, some studies that focused on ASEAN countries were also out of date which may not be applicable for the current situation, especially the current situation in the 6 ASEAN countries. More importantly, studies in literature used data on the inflows of foreign capital which do not account for the outflows of capitals.

Most of the empirical studies on growth impact of foreign capital flows emphasized on the effect of FDI, the study on effects of short-term capital flows on growth is limited. An empirical study found that foreign capital flows have a positive correlation with economic growth (Gheeraert and Mansour 2005), whereas other argued that capital inflows contribute to growth only if the banking sector has reached a certain level of development (Bailliu 2000). Additionally, it is argued that more intense capital flows are associated with more intense or frequent crises (Mishra, Mody and Murshid 2001).

Similar to past studies on economic growth, studies on impacts of foreign capital inflows on domestic savings in literature emphasized on countries outside ASEAN region, for instance, studies conducted by (Weisskopf 1972), (Okafor and Tyrowicz 2010), (Angmortey and Offin 2014), and (Afzal 2013). In addition, some studies that focused on ASEAN countries were also out of date which may not reflect the current situation, especially the current situation in the 6 ASEAN countries, and some emphasized on individual country such as studies conducted by (Boon 2000), (Kiong and Jomo 2005), (Ang 2011), and (Tapphavimol 1984). Besides the impacts of foreign capital inflows, many studies have also investigated some other important factors affecting the domestic saving rate, for instance, the level of income, demographic factors, financial development, and some other relevant determinants.

Capital account/ financial account liberalization has been undertaken substantially in most of Asian countries since 1990s. In the past 10 years, the features of liberalization in capital account in ASEAN have been so much different from the past decades in terms of size of capital movement and volatility. Therefore, the time span of this study starts from the 1990 to 2015 to reflect the effects of capital flows on domestic savings and economic growth. This paper is different from the past studies in terms of evaluation of short-term capitals and relative long-term capital (FDI) that it emphasizes on net inflows of capitals during the most recent years in 6 ASSEAN countries to reflect the current situation and the influence of capital flows on domestic savings. In addition, by using net capital inflows data, it reflects real impacts of capital inflows retaining in the countries on economic growth and domestic savings. Moreover, this study is the first attempt to incorporate Lao PDR into the analysis.

Despite its positive impact on economic growth, as suggested by (Borensztein et al.1995), and (Kotrajaras 2010) found that FDI contributes to economic growth of host country only when the country has a sufficient absorptive capability of the advanced technologies, implying that country is benefited from FDI only when it has a minimum threshold stock of human capital. This is consistent with the case of Singapore and Malaysia, especially during the 1990s before the crisis.

Besides, although it is found that FDI could have significantly positive impact on economic growth, an empirical study conducted by (Rand and Tarp 2002) argued a different view. Their study results revealed that FDI inflows are very volatile. In the study, they assessed the relationship between FDI and output, the general relationship between the two variables was

not found, and indicating there is no connection between domestic investment and FDI. Indeed, they showed that FDI is much volatile than foreign aid flows. As such, they argued that stabilizing FDI is important to modify business cycle fluctuations.

Past studies on impacts of foreign capital flows on economic growth and domestic savings are summarized in table 9 and table 10, respectively. Studies on impact of foreign capital inflows on economic growth in ASEAN emphasized on the advanced ASEAN countries whereas less-developed country like Lao PDR was excluded. In addition, the studies focused on inflow of FDI which have contributed to economic growth, especially, during the high growth period (Almasaied, Baharumshah and Rashid 2008), and (Pradhan 2009). Foreign capital inflows were found to have negative impacts on domestic savings in ASEAN countries, especially, found in Malaysia' case (Ang 2011). Most of past studies are out date, and focused mainly on FDI inflows whereas short-term capitals received less attention.

TABLE 9: SUMMARY OF STUDIES ON IMPACTS OF FOREIGN CAPITAL ON ECONOMIC GROWTH

Authors	Studied Country/Country Group (Time)	Methods	Findings
(Ahmad and Hamdani 2003)	32 developing countries (1996-1992)	Multiple regression with Fixed effects & Random Effects estimation	The contribution of FDI to economic growth is less than that of domestic private investment which is more consistent and reliable. The inconsistent of FDI is explained by the difference in sector-wise composition of FDI across countries.
(Asghar, Nasreen and Rehman 2011)	14 selected Asian Countries (1983-2008)	(Fully-Modified OLS: FMOLS) based on panel data	The positive relationship between economic growth and FDI inflows. However, only in the case of Malaysia that bi-directional causality between FDI and economic growth exists, whereas FDI-led growth is found only in the case of Singapore, Thailand, Japan, and Nepal.
(Suliman and Elian 2014)	Jordan (1980-2009).	Vector Error Correction Model (VECM)	developed financial markets are an essential precondition for the positive impact of FDI on economic growth, reflecting host countries' ability to exploit FDI more efficiently.
(Okafor, Ezeaku and Eje 2015)	Nigeria (1987-2012)	OLS & Granger Causality test	FDI and portfolio investment have the significantly positive effect on economic growth. FDI contributes to the improvement of labor and increase in capital, and transfer new technology to host country. It is also found that the effect of portfolio investment on the growth is

			higher than that of FDI in this country, this is due to it enhances liquidity in the capital market resulting in broader and deeper market, and enable small firms accessing to the capital market to meet their financial needs.
(Inekwe 2013).	Nigeria (1990-2010)	Vector Error Correction Model (VECM)	FDI in the servicing sector has a positive relationship with economic growth for the period studied. However, FDI in the manufacturing sector has a negative relationship with long-run growth in this economy. In addition, FDI in the manufacturing sector has positive relationship with employment, while FDI in the service sector has a negative significant relationship with employment rate
(Almasaied, Baharumshah and Rashid 2008)	5 ASEAN countries (1986-2002)	Auto Regressive Distributed Lag (ARDL)	Export is proved to be the main engine for growth. FDI has a positive impact on growth but less than that of domestic investment. In addition, human capital and financial intermediation are significant factors contributing to economic growth.
(Blomstrom, Lipsey and Zejan 1994)	101 Developing countries (1980-1985)	3 Stage Least Squared (3SLS)	Inflows of FDI has a positive impact on domestic investment, especially in long run. Thus, as the investment is the growth engine, the positive effect of FDI on domestic investment implies that it contributes to economic growth. However, in some countries, FDI is found to crowd in domestic investment.

(Bayar 2014)	Emerging Asian Economies (1982-2012)	Co-integration test and Vector Error Correction Model (VECM)	In long run, gross domestic savings, domestic investment, and FDI positively affect economic growth. In fact, economic growth also feeds back domestic saving and investment.
(Borensztein, Gregorio and Lee 1995)	69 developing Countries (1970-1989)	Seemingly Unrelated Regression Technique (SUR)	FDI is an important factor contributing to economic growth, and its impact on growth is higher than that of domestic investment. However, the contribution of FDI to economic growth only when the host country has a sufficient absorptive capability of the advanced technologies available in the country.
(El-Wassal 2012)	16 Arab countries (1970-2008)	Dynamic Panel (Generalized Method of Moments: GMM)	The impact of FDI on economic growth is limited or negligible. To reap growth benefit of FDI, it is important to improve preconditions of the host country such as human capital, financial development, trade openness as well as physical infrastructure.
(Gursoy, Sekreter and Kalyoncu 2013)	Azerbaijan, Kyrgyz Republic, Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan (1997-2010)	Granger Causality test	Unidirectional causality running from FDI to GDP for the case of Azerbaijan while there is bidirectional causality between the two variables for the case of Turkmenistan.
(Kotrajaras 2010)	15 East Asian countries	Multiple regression with	FDI does not necessarily enhance economic growth. It has the positive impact on the economic growth only in the countries having the

	(1990-2009)	Panel Fixed-Effects estimation	appropriate economic conditions such as human capital, trade openness.
(Soumia and Abderrezzak 2013)	Algeria, Morocco, and Tunisia (1980-2010)	Dynamic Panel (Generalized Method of Moments: GMM)	foreign direct investment affects positively the growth rate in the long run and improves the economic situation under economic and financial conditions, such as the adoption of an export promotion trade regime, restoring international competitiveness and diversification of exports
(Tiwari and Mutascu 2011)	23 Asian countries (1968-2002)	Multiple regression with Fixed effects & Random Effects estimation	FDI inflows and export positively affect economic growth, whereas human capital is the factor behind the FDI and export-led growth in Asian countries.
(Xu and Wang 2007)	China (1980-1999)	OLS estimation	Economic growth and domestic investment are positively affected by FDI inflows. FDI enhance investment efficiency, hence stimulate economic growth.
(Saqib, Masnoon and Rafique 2013)	Pakistan (1981-2010)	OLS estimation	Negative impact of FDI on economic growth, whereas domestic investment contributed to economic growth of the country
(Katerina, Papanastasiou and Vamvakidis 2004)	17 Transition Economies (1995-1998)	Bayesian Analysis	FDI is not funded to have any significant impact on economic growth. The insignificant impact of FDI was due mainly to data limitation.
(Yalta 2011)	China (1982-2008)	Maximum entropy	FDI has no impact on economic growth, especially at the aggregate level. This is due to specific characteristics of areas where FDI firms

		bootstraps based approach, time series data are utilized	locate, for instance, more developed coastal regions gain more from FDI whereas the provinces in western and central regions did not gain benefit from FDI.
	Malaysia (1970-2008)	Vector Error Correction Model (VECM)	Bi-directional causality between economic growth and domestic investment, while there is no causality between FDI inflow and economic growth. In short-run, FDI crowds out domestic investment.
(Sooreea-Bheemul and Sooreea 2013)	28 developing and emerging countries (1980-1998)	Granger Causality test	Bi-directional causality between FDI and economic growth, while there was unidirectional causality from economic growth to domestic investment. FDI leads to increase in domestic investment through spillover effects and linkage effect.
(Turkcan, Duman and Yetkiner 2008)	23 OECD countries (1975-2004)	Generalized Method of Moments: GMM	Bi-directional causality between FDI and economic growth. Additionally, increase in export contributes to the increase in FDI and economic growth.
(OHTA 2015)	21 OECD and Emerging Economies (1975-2013)	OLS estimation	Small economies with capital and financial liberalization are observed to have been more affected by foreign capital inflows on domestic savings, investment and economic growth that substantial reliance on foreign capital could increase economic instability.
(Gudaro, Chhapra and Sheikh 2012)	Pakistan (1981-2010)	OLS estimation	Positive impact of FDI on economic growth

(Chakraborty and Nunnenkamp 2006)	India 1987-2004	Granger Causality test	Differences effects of FDI on Economic growth. In manufacturing sector and service sector, FDI enhance growth, however, in the primary sector, it does not have any significant impact on output growth.
(Bayar 2014)	Turkey (1980-2012)	Co-integration test and Vector Error Correction Model (VECM)	Long run relationship among FDI, domestic investment, and economic growth: In short run and long run, FDI has negative impact on economic growth, while domestic investment has positive impact both in short run and long run
(Baharumshah and Thanoon 2006)	8 Asian countries (1982-2001): Malaysia, the Philippines, Singapore, Thailand, Korea, China, Myanmar, and Fiji.	Dynamic Generalized Least Squares (DGLS)	By applying DGLS estimation technique, the results revealed that domestic savings significantly contribute to long-term economic growth. On one hand, it was also found that FDI leads growth both in the short and long run. In addition, the influence of FDI on growth is much higher than that of domestic savings. On a contrary, short-term capital inflow has the adverse effect on economic growth both in long-run and short-run.
(Pradhan 2009)	5 ASEAN Countries: Indonesia, Malaysia, Philippines, Singapore and Thailand (1970-2007).	Panel Cointegration and Granger Causality test	Based on co-integration and causality test, both at the individual level and panel level. The results show that, at the panel level, foreign direct investment and economic growth are co-integrated, indicating the presence of long-run equilibrium relationship between them. However, at the individual country level, this is true only for Thailand and Singapore. Moreover, the Granger causality test also found that there

			are bidirectional causality FDI and economic growth both at the panel level as well as individual country level except Malaysia.
(Aizenman, Jintarak and Park 2011)	Latin America & Caribbean, East Asia & Pacific, Europe & Central Asia, Middle East & North Africa, South Asia, Sub-Saharan Africa, and High-Income country group (1990-2010)	Multiple regression with Fixed-Effects Estimation	Lagged FDI is positively associated with economic growth, both in pre-crisis and post-crisis periods, and the effect is even more robust during the entire studied period that includes the crisis period. In contrast, the impact of lagged short-term capital flow is nil in pre-crisis periods, whereas negative and large during the crisis period. The impacts of capital flows may differ between crisis and non-crisis periods.
(Gheeraert and Mansour 2005)	183 countries classified in 3 country groups: developed, developing, and Transition Countries (1975-2001)	Multiple regression with fixed effect LSDV, and SUR	Capital flows are unevenly distributed across countries. In developed countries, the inward private capital flows are higher than in the less developed countries. The empirical investigation of the relationship between capital flows and economic growth shows the positive relationship, and the relationship is robust to various measures of capital flows.
(Bailliu 2000)	40 developing countries (1975-1995)	GMM estimation technique	A synthetic indicator of capital inflows in those countries was used to examine the relationship between these inflows and economic growth. The results revealed that capital inflows contribute to growth only if the banking sector has reached a certain level of development.

TABLE 10: SUMMARY OF KEY LITERATURE ON IMPACTS OF FOREIGN CAPITAL FLOWS AND OTHER DETERMINANTS ON DOMESTIC SAVINGS

Authors	Country/Country Group (Period)	Methods	Findings
(Boon 2000)	5 ASEAN countries: Indonesia, Malaysia, Singapore, Thailand, Philippines (1968-1997)	Vector Error Correction Model (VECM)	In short-run, it is not found that domestic savings contribute to investment for all the cases except Singapore. In contrast, investment causes the increase in domestic savings for the case of Indonesia and Thailand, instead. For the case of Malaysia and the Philippines, causal relationship between savings and investment is not found. The absence of short-run causality running from savings to investment was due to a high degree of short-run international capital flows in the region, meaning that the increase in investment in the region, especially Malaysia, the Philippines, and Thailand, during the boom period of 1988-1996 was contributed partially by the net inflow of foreign capital. For Singapore, the domestic saving is always surplus to the investment level since 1986, which indicates a net capital outflow from the country.

(Kiong and Jomo 2005)	Malaysia (1966-1996)	OLS	Foreign capital inflow in aggregate and its components, i.e. external debt and FDI, had significantly negative impacts on the Malaysian domestic savings rate during 1966–96. However, although foreign capital inflows reduced the savings rate in Malaysia, it did not reduce the absolute savings level. The positive effect of foreign capital inflows on economic growth – suggested by conventional wisdom – was reduced due to the adverse effect of foreign capital on the domestic savings rate.
(Weisskopf 1972)	44 underdeveloped countries (1953-1966)	OLS	Foreign capital inflow has a negative impact on ex-ante domestic savings, but not necessary to the ex-post. On ex-ante domestic savings, foreign savings appear to displace domestic savings in under-developed countries.
(Delwar 2014)	63 developing countries (1971-2010)	Common Correlated Effects Mean Group (CCEMG) estimator technique based on panel data	Of all foreign capital, only remittances crowd out domestic savings while other foreign capital flows are not found to have any significant impact on domestic savings.
(Katircioglu and naraliyeva 2006)	Kazakhstan (quarterly data for 1993-2002)	Granger Causality test, VAR, and VECM	No co-integration between FDI and domestic savings, but both led economic growth. In long-run, the increase in of

			1% of domestic savings and FDI contribute to the increase in real income by 0.28% and 0.62% respectively.
(Agrawal, Sahoo and Dash 2009)	5 South Asian countries (1975-2010)	Panel Cointegration test by using Fully-Modified OLS model (FMOLS)	Main determinants of domestic savings rate are the growth rate of income per capita, accessing to banking institutions, foreign savings rate, have a positive impact on domestic savings, while dependency ratio and the availability of foreign savings are negatively related to domestic savings rate. Besides, the real interest rate has a minor impact, and its impact is inconclusive.
(Adeniyi and Egwaikhide 2013)	20 Sub-Saharan African Countries (1976-2005)	Multiple regression of panel data with Fixed-effects estimation	Financial development, especially domestic credit provided to private sector plays important role in mobilizing domestic savings for investment. Additionally, domestic credit to private sector has positively affected domestic investment, resulting in the increase in domestic savings. The results imply the role of financial development in mobilizing domestic savings for investment.
(Okafor and Tyrowicz 2010)	38 countries of Latin America and The Caribbean, and 48 Sub-Saharan African countries (1975-2004)	Fixed-Effects and Random Effects Models based on Panel data	The negative link between foreign debts and domestic savings, especially in the long run that 1% increase in foreign borrowing, domestic savings rate reduces by 7.8%. A large amount of foreign debt associated with debt service payment hamper economic development and discourage

			domestic private savings in developing countries. It is also found that FDI has a positive impact on domestic savings contemporaneously and in the medium term, whereas in long-run, it has a negative impact on domestic savings.
(Odhiambo 2009)	South Africa (1950-2005)	Multivariate Causality test	Foreign capital inflows and savings Granger- cause each other, however, the growth of real sector drives up the accumulation of savings in the long run.
(Hyung 2013)	15 high-income countries (1975-2010)	Pooled OLS, panel data with Fixed and Random Effects estimations	Old age dependency ratio has no significant impact on the domestic saving rates, while GNI per capita is found to have statistically significant effect on domestic savings. Elderly do not earn at the old-age, but spend their accumulated income for living, whereas the higher income level encourages capacity to save, hence contributes to the increase in the savings rate.
(Collins 1991)	10 developing countries (1960-84)	OLS	Countries that have high saving rates are those with high economic growth rate and lower young age dependency ratio. Sine household with more number of children spends more on consumption, hence discourages savings.
(Ang 2011)	Malaysia (1960-2007)	ARDL and DOLS	It is found that financial deepening and increased banking density tend to encourage private savings in Malaysia.

			However, financial system liberalization and development of insurance markets tend to discourage private savings.
(Sung and Young 2005)	Korea (1975-2002)	Life-cycle hypothesis test	Income growth positively affects the aggregate saving rate, whereas, young and the older age dependency ratios have negative effects on the saving rate. On the other hand, it is found that foreign saving substitutes domestic saving.
(Horioka and Terada-Hagiwara 2012)	twelve economies in Developing Asia (1966-2007)	Panel data based on Multiple regression with Fixed Effects estimations	The main determinants of domestic saving rates in Developing Asia are age structure of the population (especially the aged dependency ratio), income levels, and the level of financial sector development, and that the impacts of income levels and the level of financial sector development. In long-run, the negative impact of population aging on domestic savings will be offset by the positive impact of higher income level.
(OHTA 2015)	21 OECD and Emerging Economies (1975-2013)	OLS estimation	Foreign capital flows have a negative impact on domestic savings, especially small countries with capital and financial account liberalization.
(Osoian, Lazar and Zaharie 2008)	10 Eastern Europe economies: Czech Republic, Hungary, Poland, Slovak Republic, Slovenia,	Fixed Effects Model based on panel data	Current account balance, as a proxy of financial liberalization, does not substitute domestic savings. This is due to these transition economies had limited access to international capital markets. The results revealed that

	Bulgaria, Romania, Estonia, Latvia, and Lithuania (1986-2006)		income level is the most important factor contributing to domestic savings that the higher the income level, the higher domestic savings level.
(Angmortey and Offin 2014)	Ghana: Quarterly data (1983-2012)	Error Correction Model (ECM)	Foreign capital has positively correlated with real domestic savings in the long run, although not steady but volatile. In short-run, foreign capital is not found to have any significant effect on real domestic savings. The three components of foreign capital do not displace domestic savings both in the short-run and the long-run. The results suggested that FDI is to be more emphasized by improving the locational advantages. On one hand, the capital market should be strengthened to provide an avenue for investing the retained earnings of firms to prevent capital flight.
(Tapphavimol 1984)	Thailand (1970-1984)	2SLS method	Foreign aid had a significantly negative effect on domestic savings. This might be because foreign aid is negotiated on a government to government basis, and it is possibly due to the government of the recipient country may tend to relax its efforts in mobilizing domestic resources once large commitments of foreign aid from external sources is found. In addition, it is also found that short-term capital flow had

			negatively affected domestic savings whereas it positively affected economic growth.
(A.-W. M. Mohamed 2003)	Egypt (1970-1995)	OLS	Foreign capital flows are not found to displace domestic savings level of Egypt, in fact, the low domestic savings of the country may probably due to other factors and not foreign capital inflow, for instance, it might be due to government failure in generating large savings.
(Afzal 2013)	Pakistan (1960 -2010)	Granger Causality test	No causality is found from foreign capital to savings, but for the whole period (1960-2010), it is found that domestic savings cause foreign capital; and for 1973-90 periods, both foreign capital and domestic savings caused each other. During the recent period, 1990-2010, there is no causality between foreign capital and savings, but savings Granger-cause foreign capital in periods. The results suggested that foreign capital is not a permanently dependable source for investment, and Pakistan should rely on its own savings.

Chapter 3: Data and Methodology

1. Data

Real GDP per capita growth rate which is based on local currency constant price, and gross domestic savings rate (% of GDP) are the dependent variables in this study. When comparing one country to another, using GDP per capita is more useful and more reliable measure than GDP, since it shows the relative performance of the countries in an individual perspective. In addition, GDP per capita is considered as an appropriate proxy for the level of economic development subject to population, therefore, it normalizes economic development by the country size. The real GDP per capita is referred to GDP per capita based on local currency at 2010 constant price or inflation-adjusted GDP per capita. In the domestic savings regression, real GDP per capita growth is an explanatory variable that captures the change in income level.

The first explanatory variable in of economic growth regression is the starting level of GDP per capita denoted by INITIAL_GDP in the model. It is the per capita GDP of the year started. The unit of this variable is in US$ constant price 2010, thus it is adjusted for inflation. By including this variable in the statistical model, the size of the economy is controlled. The theory of conditional convergence implied that richer economies tend to grow slower than poorer economies, thus the expected sign of its coefficient is negative. The idea of convergence in economics (also sometimes known as the catch-up effect) is the hypothesis that poorer economy's income per capita tend to grow at faster rate than that of richer economy. As a result, economy should eventually converge in terms of per capita income. Developing countries have higher potential to grow at a faster rate than advanced or developed countries due to diminishing returns (returns to capital, in particular) are not as strong as in capital-rich (developed) countries. Moreover, poorer countries can replicate the institutions, technologies, and production methods of developed countries.

Foreign capital net inflows, both net inflow of total capital and the disaggregated capital net inflows, consisting of three major classifications of capital net inflows (in accordance with the categorization of the IMF BOP data), such as FDI, portfolio investment, and other investment, are the main explanatory variables in this study. The net capital flow variables are calculated as inflows minus outflows, which account for the exact amount of the capital

available for investment in the country. Change in capital net inflows is the matter of change in the inflows of capital (Inflows are the value of inward investment made by the non-residents investors in the reporting economy) and/or the change in the outflows of capital (Outflows are the value of outward investment made by the residents of the reporting economy to external economies).

Among the foreign capital flows, FDI is likely to be an engine of growth and tends to contribute to domestic savings rate. This is due to FDI may enhance capital formation and employment augmentation, promote manufacturing exports, bring special resources such as capital, managerial skills, knowledge flows and others, and results in technology and spillover effects. In addition, these ASEAN countries have substantially relied on FDI for economic development, especially during the Pre-Asian crisis years. Therefore, it is expected to have a positive sign of its coefficient in both economic growth and domestic savings regressions.

The other categories of foreign capitals are short-term capitals: portfolio investment and other investment. Other investment includes loans, the financial transaction in currency and deposit, and trade credit and advances. Both equity portfolio investment and other investment are volatile in their nature since they are easily reversible and sensitive to fluctuations in expected risk-adjusted in international yield differentials. On the one hand, as pointed out in past studies, the availability of foreign savings crowds out domestic savings. Therefore, the coefficients of this variable are expected to have negative signs on domestic savings rate and mixed sings on economic growth regression.

Gross domestic savings rate as the percentage of GDP is an explanatory variable of economic growth. Domestic savings is perceived to have a positive correlation with economic growth especially through the savings-investment link, hence it a main driving force of economic growth.

Gross capital formation or gross domestic investment, measured as the percentage of GDP, is an explanatory variable of economic growth and domestic savings. The data consists of investment by residents and non-residents. Due to the lack of data on investment by residents, gross capital formation is used in the analysis as a proxy of domestic investment. Although gross capital formation consists of investment by foreign and local investors, it reflects (to some extent) the influence of domestic investment invested by residents or local investors, and in the regression the variable and FDI are in separate run to avoid multicollinearity and double

counted FDI problems. With more reliance on domestic investment, which is domestically-financed investment, it would be the promising way to attain sustainable economic growth, thus the coefficient of domestic investment is expected to have a positive sign in both economic growth and domestic savings regressions.

Domestic credit to the private sector by banks, which is a proxy of financial development as the share of GDP, is the financial support provided to the private sector as an engine of economic growth. Enacting policies that develop one country's the financial sector would be expected to expand economic growth. On the other hand, increase in domestic banks' credit to private sector enhances domestic investment level and income generation, hence, accelerates economic growth and increase in income and savings level. However, due to the fact, these 6 ASEAN countries have been mobilizing imported capital to finance investment through capital flows directly, therefore the coefficient of domestic credit to the private sector is expected to have mixed sign in growth regression, whereas it is expected to have positive sign in domestic savings regression.

Trade, which is the sum of export and import value as the percentage of GDP. Trade openness which is commonly-used in international economics, is an explanatory variable. However, since trade is the sum of export and import, and as appears in GDP components in expenditure account, if the import is greater than export, the county's GDP decreases, and vice versa. Therefore, the expected sign of trade openness's coefficient is mixed. The increase in trade openness can result in magnified gains owing to large knowledge spillovers, the greater level of competition, product variety and technology transfer. Higher exports increase real output while higher imports mitigate production cost. Therefore, a high degree of trade openness is a growth enhancing policy tool. According to the comparative advantage theory, international trade leads to a more efficient use of a country's resources through the imports of goods and services that otherwise are too costly to produce domestically. In addition, as trade openness increase, especially the expansion of the export stimulates productivities by creating scale economies and increases foreign exchange earnings which provide greater access to the international markets (Krugman 1997), (Esfahani 1991). However, trade is highly dependent on the global economic situations, that is, international trade and world economy are inseparable. For instance, demand shocks drive consumption or investment booms in one country, the impacts may spill over into its trading partners through the increase in demand for imports, which in turn boosts other economies. Therefore, the expected sign of trade openness's

coefficient is mixed in growth regression while it is expected to have positive sign in domestic savings regression.

The Asian and Global financial crises are also incorporated in the growth regression as the dummy variables that capture the effects of the crises. Evidence from past studies shows that crises reduce investment incentives, lower demand for the product, and increase uncertainty in the matter of the returns on capital as well as on the risk premium. Additionally, companies are faced with less favorable conditions for financing investment owing to more stringent standards regarding the limited supply of credit in coupled with the rising costs of borrowing (Pindydick 1991), and (Pindyck and Solimano 1993). Therefore, the coefficients of the two crises dummy variables are expected to have negative signs in both economic growth and domestic savings regressions.

Initial average years of schooling of population aged 15 and above is one of explanatory variables of domestic savings. This is a proxy of human capital as found in many studies that the higher level of human capital, the higher level of domestic savings, and the coefficient of this variable is expected to have positive sign.

2. Methodology of analysis

Before 1990, capital flows to ASEAN countries were not significant. Since early 1990s, flows of foreign capital into these countries has increased remarkably, especially in 1997, and since then the inflows show declining trend particularly since the 2000s. Therefore, this paper analyzes the impact of foreign capital inflows and other observed factors on real GDP per capita growth rate for two periods: 1990 to 2015, and 2000 to 2015 periods.

Due to the economic growth of these studied countries and the flows of foreign capital are different, especially before and after the Asian financial crisis. On the other hand, due to the data limitation for Lao PDR, in the 1990s, the country is excluded from the analysis for the 1990-2015 period. Besides, the country has substantially relied on foreign capital inflows, especially FDI since the year 2000 onward, and loans to meet investment requirement of the country. During the recent five years, the country has also received the inflow of portfolio investment, stemming from the year 2010 when the Lao Stock Market was inaugurated.

Analyses based on multiple regression, utilizing panel and cross-section data of the selected ASEAN countries, are conducted. In the regression analyses, fixed effect of each

explanatory variable will be examined. In panel analysis, the term fixed effects estimator is used to refer to an estimator for the coefficients in the regression model. If we assume fixed effects, we impose time-independent effects for each entity (country in this study) that are possibly correlated with the regressors. The fixed effect assumption is that the individual specific effect is correlated with the independent variables. By using the fixed effects method, it is possible to control for all possible characteristics of the Individual country in the study, thereby eliminating potentially large sources of bias even without measuring them, so long as those characteristics do not change over time. In a fixed effects model, the intercept varies across countries. For the 2000-2015 period, the country dummy variable for Lao PDR is included in the regressions to capture the influence of this country specific effect on real GDP per Capita growth rate (as shown in equation 2 and 4).

Some explanatory variables are highly correlated. As shown in table 19 in the appendix, domestic credit to the private sector is highly correlated with total foreign capital inflow, domestic savings rate, and trade openness, with correlation degree of 0.609, 0.787, and 0.670, respectively. Therefore, to avoid multicollinearity problem, these variables are in the separate run.

The models for the two studied periods are specified as follows:

1). GDP per Capita Growth model for the 1990-2015 period (One-way Fixed Effects):

$$GDP\_Gr_{it} = \alpha_i + \beta_1 Initial\_GDP_i + \beta_2 DS_{it} + \beta_3 Domestic\_INV_{it} + \beta_4 FC_{it} + \beta_5 TR_{it} + \beta_6 CR_{it} + \beta_7 Crisis_{97} + \beta_8 Crisis_{08} + \mu_{it} \quad (1)$$

2). GDP per Capita Growth model for the 2000-2015 period (Two-way Fixed Effects):

$$GDP\_Gr_{it} = \alpha_i + \beta_1 Initial\_GDP_i + \beta_2 DS_{it} + \beta_3 Domestic\_INV_{it} + \beta_4 FC_{it} + \beta_5 TR_{it} + \beta_6 CR_{it} + \beta_7 D_{LAO} + \beta_8 Crisis_{08} + \mu_{it} \quad (2)$$

3). Domestic savings model for the 1990-2015 period

$$DS_{it} = \alpha_i + \beta_1 GDP\_Gr_{it} + \beta_2 Schl\_YEARS_i + \beta_3 Domestic\_INV_{it} + \beta_4 FC_{it} + \beta_5 TR_{it} + \beta_6 CR_{it} + \mu_{it} \quad (3)$$

3). Domestic savings model for the 2000-2015 period

$$DS_{it} = \alpha_i + \beta_1 GDP\_Gr_{it} + \beta_2 Schl\_YEARS_i + \beta_3 Domestic\_INV_{it} + \beta_4 FC_{it} + \beta_5 TR_{it}$$

$$+\beta_6 CR_{it} + \beta_7 D_{LAO} + \mu_{it} \qquad (4)$$

Where: i (i=1…..N) denotes the country, and t (t=1……T) denotes time (year)

α: time-invariant country specific effects

GDP_Gr: real GDP per capita growth rate as dependent variable.

Initial_GDP: real GDP per capita in the starting year, referred to the year 1990 for the 1990-2015 period, and the year 2000 for the 2000-2015 period

DS: gross domestic savings rate

Domestic_INV: gross domestic investment rate

FC: the vector of foreign capital net inflows which consists of total foreign capital inflows (TFC), total foreign capital inflows in previous 2 years (Lagged TFC), foreign direct investment (FDI), foreign direct investment in previous 2 years (Lagged FDI), Portfolio investment (Portfolio), and Other investment (OTHER)

TR: trade openness which is sum of export and import ratio to GDP

CR: domestic credit to private sector by banks

Schl_YEARS: Initial mean years of schooling of population aged 15 and above. The data referred to average years of schooling in the year1990 for the 1990-2015 period, and the year 2000 for the 2000-2015 period

D_{LAO}*:* dummy variable for Lao PDR (it takes the value 1 if the country is Lao PDR, and 0 otherwise)

$Crisis_{97}$*:* dummy variable that captures the existence of Asian Financial Crisis it takes the value 1 if the years are 1997 and 1998, and 0 otherwise)

$Crisis_{08}$*:* dummy variable that captures the existence of Global Financial Crisis (it takes the value 1 if the years are 2008 and 2009, and 0 otherwise)

μ is the error term.

3. Results and Discussion

Real GDP per capita growth rate and gross domestic savings rate are regressed by foreign capital net inflows, and some other explanatory variables. The lagged effects of foreign capital inflows at aggregate level and lagged FDI are also incorporated in the regressions based on the fact that foreign capital, especially long-term investment like FDI may take years to have effect on economy as well as on domestic savings. The variables are two-year lagged based on Var Lag Order Selection Criteria that the Akaike Information Criterion (AIC) value is smallest for 2 lags(20.1959) compared to 1 lag(AIC=20.4393).

Overall, during 1990-2015, net inflows of foreign capital have contributed to economic growth, especially before Asian financial crisis hit, whereas the flows of capitals both at aggregate and disaggregate levels have negative impacts on domestic savings. In the recent period, 2000-2015, of all categories of foreign capital inflows, only FDI has positive effects on GDP growth and domestic savings. The nature of each variable in the regressions of the two studied periods and the results are to be presented as follows:

3.1 1990-2015 period:

3.1.1 Impacts of foreign capital inflows and other factors on economic growth

Table 11 shows regression results of real GDP per capita growth rate of 5 ASEAN countries: Indonesia, Malaysia, Philippine, Thailand, and Singapore, during the 1990-2015 period, based on the estimation of equation 1 in the section 3 of this chapter. Real GDP per capita growth rate is regressed by foreign capital net inflows at aggregate and disaggregate levels as classified in the IMF/balance of payment, and also some other factors such as gross domestic savings rate, gross domestic investment, trade openness, and financial development.

TABLE 11: REAL GDP PER CAPITA GROWTH REGRESSION RESULTS (1990-2015 PERIOD)

Explanatory variables	Explained Variable: Real GDP per capita growth rate, %					
	1	2	3	4	5	**6**
Initial GDP	-0.0001***	-0.000007	-0.00004	-0.0001	-0.00005	-0.00001
	(0.00006)	(0.00006)	(0.000007)	(0.00007)	(0.00007)	(0.00005)
	(-1.9421)	(-0.1184)	(-0.5983)	(-1.4372)	(-0.7665)	(-0.2182)
Domestic Savings	0.1856 **	-	-	-	-	-
	(0.0757)					
	(2.4528)					
Domestic investment	-	0.2381***	-	-	-	-
		(0.0449)				
		(5.3077)				
Total Foreign Capital	-	-	0.1055 **	-	-	-
			(0.0508)			
			(2.0782)			
lagged Total Foreign Capital	-	-	0.0378	-	-	-
			(0.0540)			
			(0.7003)			
FDI	-	-	-	0.3315***	-	-
				(0.1033)		
				(3.2094)		
lagged FDI	-	-	-	-0.1329	-	-
				(0.0949)		
				(-1.4005)		
Portfolio Investment	-	-	-	-	0.0014	-
					(0.0583)	
					(0.0232)	
Other Investment	-	-	-	-	-	0.1018**
						(0.0442)
						(2.3024)
Trade	-	0.0078	-	-	-	-
		(0.0116)				
		(0.6712)				
Credit to private sector	-	-	-	-0.0298	-0.0221	-0.0224
				(0.0222)	(0.0203)	(0.0199)
				(-1.3441)	(-1.0873)	(-1.1233)
Crisis 1997	-7.7189***	-7.5567***	-7.6151***	-6.7185***	-6.6609***	-6.2801***
	(1.0107)	(0.9220)	(1.0728)	(1.1753)	(1.1938)	(1.1799)
	(-7.6372)	(-8.9595)	(-7.0986)	(-5.7166)	(-5.5796)	(-5.3225)
Crisis 2008	-3.9827***	-3.3439***	-3.3994***	-3.2391***	-4.2113***	-4.1901***
	(0.9974)	(0.9255)	(1.0362)	(1.0479)	(1.0399)	(1.0164)
	(-3.9933)	(-3.6130)	(-3.2808)	(-3.0911)	(-4.0497)	(-4.1223)
Constant term	-0.5715	-3.4623	5.3087***	7.2079***	6.5398***	6.1794***
	(2.4448)	(2.5789)	(0.8318)	(1.6490)	(1.4752)	(1.4468)
	(-2.2334)	(-1.3425)	(6.3821)	(4.3711)	(4.4328)	(4.2710)
R^2	0.3930	0.4906	0.4040	0.4283	0.3691	0.3958
Observations	130	130	120	120	130	130

Note: *1) Figures in Parenthesis are standard errors (upper), t-statistic (lower). * denotes significance level at 10%, ** at 5%, and *** at 1%.*

2) Countries included: Indonesia, Malaysia, Philippines, Thailand, and Singapore

As indicated in column 3 of the table 11, at the aggregate level, the net inflows of total foreign capital are positively correlated with the growth rate of real GDP per capita during the

1990-2015 period[41]. The coefficient is significant at 1 percent level, the lagged capital flows, however, is not found to have significant impact on the growth. The result would be consistent with the fact that during the investment boom, before the Asian Financial crisis hit, these countries relied heavily on inflows of foreign capitals, short-term capital flows, resulted in the trigger of financial crisis indicated by the sudden stop of short-term capital inflows followed by the massive outflow of the capital. Besides, FDI inflow also reduced during the years of crises hit.

At disaggregate level, as shown in column 4 of the table 11, FDI is positively correlated with economic real GDP per capita growth rate of the selected ASEAN countries, with 1 percent significant level of the coefficient. This finding is in line with findings in literature (Borensztein, Gregorio and Lee 1995), (Soumia and Abderrezzak 2013), and also consistent with the fact, as shown in the table 3 that during the years before the trigger of Asian Financial crisis the ASEAN countries received massive FDI inflows which contributed to employment and export of manufactured goods of the countries.

3.1.1.1 Causal links between FDI net inflow and economic growth

Additional to the Fixed-effects estimation, this study also investigates the causal links between FDI net inflow and real GDP per capita growth rate of the ASEAN-5 countries during the 1990-2015 period, and ASEAN-6 countries which includes Lao PDR for the 2000-2015 period. Table 12 in appendix shows that Granger Causality Test[42] results fail to reject the null

[41] Regression result shown in column 5 of table 4 shows that portfolio investment is not found to have any significant impact on real GDP per capita growth rate in the studied period. This might be due to the fact that economic growth is a factor attracting foreign portfolio investment into the countries, however, portfolio investment might not be used adequately in productive fields. On the other hand, since the 1997 financial crisis, there has been the increase in flowing out equity portfolio investment, especially the outflows from the advanced ASEAN countries.

[42] Granger Causality test is to test for Causation (also known as cause and effect) that an observed event or action appears to have caused a second event or action. Whereas correlation which indicates the extent to which an action or occurrence that has a direct link to another, meaning that the tendency of two variables to tend to move together. Sometimes correlation can be used to find causality, but not always. Correlation by itself does not imply causation. There may be other factor that is responsible for the fluctuations in both variables.

hypothesis of no causality running from FDI net inflow to real GDP per capita growth and that of no causality running from real GDP per capita growth to FDI net inflow for both in the 1990-2015 period and 2000-2015 period. The results imply that there are no causality links between FDI net inflow and real GDP per capita growth rate in the two studied periods[43].

TABLE 12: PAIRWISE GRANGER CAUSALITY TEST RESULTS FOR FDI AND REAL GDP PER CAPITA GROWTH RATE

Pairwise Granger Causality Test				
Lags: 4				
Sample Period:	Null Hypothesis:	Obs.	F-Statistic	Prob.
1990-2015	FDI does not Granger Cause GDP_GR	110	0.83540	0.5058
	GDP_GR does not Granger Cause FDI		1.28378	0.2814
2000-2015	FDI does not Granger Cause GDP_GR	72	1.18247	0.3272
	GDP_GR does not Granger Cause FDI		0.36533	0.8324

Although empirical results from panel fixed-effects estimation show that net inflow of FDI is positively correlated with real GDP per capita growth rate in the two studied periods, and panel cointegration test results in the table 13 show that the two variables are cointegrated, real GDP per capita is not automatically caused by FDI as indicated in the table.

Before testing for causality, it is required to test for panel unit root, and panel co-integration. The results of the three tests are shown in the appendix.

[43] FDI and economic growth may have some correlation, but granger causality may not be found in some cases.

TABLE 13: PANEL COINTEGRATION TEST RESULTS

H_0: No cointegration vector between FDI net inflow and real GDP per capita growth				
Statistics	**1990-2015**		**2000-2015**	
	Individual Intercepts	Individual Intercepts and Trends	Individual Intercepts	Individual Intercepts and Trends
Panel V-Statistic	-1.1000621	-2.731148	-0.898732	-0.671092
Panel rho-Statistic	-4.939344***	-3.038281***	-3.705054***	-4.958028***
Panel PP-Statistic	-5.962743***	-6.299000***	-6.245519***	-15.79523***
Panel ADF-Statistic	-6.041250***	-6.635412***	-6.081588***	-11.52394***
Group rho-Statistic	-3.248190***	-1.875779**	-2.129239**	-3.660946***
Group PP-Statistic	-6.135021***	-6.830364***	-5.934259***	-15.43466***
Group ADF-Statistic	-6.180473***	-6.349683***	-5.444606***	-12.29022***
Decision	**Reject H_0**	**Reject H_0**	**Reject H_0**	**Reject H_0**

Notes: *1). ***denotes significance level at 1%, **5%, and *1% indicates rejection of null hypothesis of non-stationary.*

2). Lags for the test are automatically selected based on Schwarz Information Criterion (SIC), the standard step-down procedure, maximum lags of 5 and 2 for the 1990-2015 and 2000-2015 period, respectively.

On the contrary, the incurrence of FDI inflow might be caused by investment climate in host country, for instances, trade policies, human capital, wage rate, infrastructure, tax and non-tax incentives offered, etc. On the other hand, while many studies in literature found that there are causality links between FDI and economic growth, it is not found any causal link between the two variables in this study[44]. One additional reason behind this is that it might be due to the

[44] Additionally, in terms of FDI inflow, (Asghar, Nasreen and Rehman 2011), however, found that only in the case of Malaysia that bi-directional causality between FDI and economic growth exists, whereas FDI-led growth is found only in the case of Singapore, Thailand. Moreover, evidence from panel cointegration and causality test of SAEAN-5 countries, namely, Indonesia, Malaysia, Philippines, Singapore and Thailand during 1970-2007 period, both at the individual level and panel level, show that at the panel level, foreign direct investment and economic growth are cointegrated, indicating the presence of long-run equilibrium relationship between them. However, at the individual country level, this is true only for Thailand and Singapore. On the one hand, the Granger causality test also found that there are bidirectional causality FDI and economic growth both at the panel level as well as individual country level except Malaysia. In addition, an empirical study revealed that in Malaysia during the 1970-2008 period, economic growth and domestic investment granger cause each other, whereas there is no causality between FDI inflow and economic growth, and FDI crowds out domestic investment in the short-run

nature of the data used that is net inflow of FDI (inflow minus outflow, thus net inflow amount is smaller than inflow amount used in many studies) which reflects the real amount of capital remaining in the country. Change in net FDI inflow is the matter of changes in the FDI inflows (FDI inflows are the value of Inward direct investment made by the non-residents investors in the reporting economy) and/or the FDI outflows (FDI outflows are the value of outward direct investment made by the residents of the reporting economy to external economies). If the increase in FDI inflow is greater than the increase in FDI outflow, it does not significantly accelerate GDP growth, implying no causal link between FDI net inflow and growth rate of GDP as well as GDP per capita.

Regression result in column 6 of the table 11 indicates that other investment positively correlated with real GDP per capita growth rate during 1990-2015 period. However, it should be noted that the significantly positive effect of other investment on growth rate of real GDP per capita in the 1990-2015 period was influenced by the substantial inflows of short-term capital inflows or other investment, especially during the years before the 1997 crisis[45].

Domestic savings, as shown in column 1 of the table 11, is found to have the significantly positive relationship with real GDP per capita growth rate of the 5 ASEAN countries during the 1990-2015 period, and its coefficient is significant at 1 percent level. This finding supports the theoretical view and in line with past studies that domestic savings which is fundamental and sustainable source for domestic investment, enhances sustainable economic growth.

(Mohamed, Singh and Liew 2013). Moreover, as pointed out in a study that several Japanese firms operating in Malaysia were moving out of the country to relocate in the lower wage rate countries such as China and Vietnam. This indicates that FDI is volatile and does not ensure sustainable growth in the long run (Mansur, Mamalakis and Idris 2003).

[45] The pro-cyclical nature of short-term capital flow is illustrated by the large influx of short-term capital causes the economy to grow at the high rate then accompanied by the sudden stop of the flow due to the debt is recalled by the creditors, as a result, the massive capital, private debt, in particular, is flown out of the debtor's country, and adversely affects the economic growth (Seth and Ragab 2012), (McCauley 2008).

As indicated in column 2 of table 11, domestic investment in the 1990-2015 period is positively correlated with real GDP per capita growth which is significant at 1 percent level. This finding is in line with (Almasaied, Baharumshah and Rashid 2008).

As a proxy of financial development variable, domestic credit to the private sector by banks is found to have significant impact on economic growth of the 5 ASEAN countries during the 1990-2015 period, as indicated in column 4 through column 6 of table 11. This could be due to economic growth of these countries is significantly affected by foreign capital, especially FDI. On the one hand, domestic banks' credits might not be channeled into growth-oriented sectors. In fact, there are disparities in domestic banks' credit to private sector among these countries[46].

Trade which is the sum of import and export is not observed to have any significant effect on real GDP per capita growth rate for the studied period. This could be due to the fact that in terms of net export, only Singapore and Malaysia have the surplus on trade balance throughout the 1990-1015 period. However, since the 2008 crisis, these two countries as well as Thailand during the political turmoil years, mark the decline in trade balance due to the decrease in export. On the other hand, the large-populated country like Indonesia, external trade is relatively small in terms of share of GDP, and domestic trade of this country might be more important as it has the large domestic market.

As indicated in column 1 of table 11, the initial level of real GDP per capita is negatively correlated with its growth rate. The significant results of the initial GDP variable are consistent with evidence from (Barro and Sala 1991) and (Mankiw, Romer and Weil 1992) for the convergence of income levels among countries which indicated that rich country grows slower than the poor country.

As clearly indicated in the table 11 that both Asian financial crisis and global financial crisis have significantly negative impacts on economic growth, especially the 1997 Asian crisis

[46] Throughout the 1990-2015 period, countries with fairly high level of financial development are Malaysia, Thailand, and Singapore, with banks' credit to private sector accounting for 115.3 percent, 108.14 percent and 98.87 percent of their GDP, respectively; while those of Indonesia and Philippines are 34.78 percent and 33.41 percent of GDP, respectively. Additionally, those highly developed financial sector countries such as Singapore, Malaysia, and Thailand, despites the increasing trend in banks' credit to private sector as illustrated in table the 12, domestic investment stagnation in the countries, and even decline in recent few years, implying domestic savings are not allocated to investment to boost economic growth.

which has the greater impact than the 2008 crisis. This could be due to the difference in terms of the size of capital flows between the before and after the year 2000. As indicated in the table 12, net inflows of foreign capitals, especially short-term capital like other investment, are much lower in the years after the Asian financial crisis. In addition, in the recent period, the ASEAN countries have not so much affected by the crisis due to the capital controls and management as well as macroeconomic stability in the past decades.

Overall, foreign capital inflows, both at aggregate and disaggregate levels, are positively correlated with real GDP per capita growth during the 1990-2015 period. This could be due to strong effects of the inflows of FDI and short-term capital during the years before the Asian Financial crisis.

3.1.2 Impacts of foreign capital inflows and other factors on domestic savings:

Table 14 shows the regression results based on the estimation of the equation 3 that gross domestic savings rate of the 5 ASEAN countries during the 1990-2015 period, is regressed by foreign capital net inflows and other factors. Regression results in the table are based on the estimation of the equation 3.

As shown in column 3 of the table 14, total foreign capital inflow has negatively affected domestic savings rate, the lagged total capital flows, however, is not found to have significant impact on gross domestic savings rate. The availability of foreign capitals, foreign savings, discourages domestic savings. This finding is in line with (Sung and Young 2005) that foreign savings substitutes domestic savings. The nature of each variable in the regression and the results are to be presented in table 14 below:

ABLE 14: DOMESTIC SAVINGS REGRESSION RESULTS OF 5 ASEAN COUNTRIES (1990-2015)

Explanatory variables	Explained Variable: Gross domestic savings rate, % of GDP					
	1	2	3	4	5	**6**
Domestic investment	1.4936***	0.3175***	-	-	-	-
	(0.1878)	(0.0779)				
	(7.9523)	(4.0783)				
Total Foreign Capital	-	-	-0.1754*	-	-	-
			(0.0939)			
			(-1.8680)			
lagged Total Foreign Capital	-	-	0.0627	-	-	-
			(0.0932)			
			(0.6730)			
FDI	-	-	-	0.0311	-	-
				(0.1281)		
				(0.2480)		
lagged FDI	-	-	-	0.1283	-	-
				(0.1225)		
				(1.0477)		
Portfolio Investment	-	-	-	-	-0.0203	-
					(0.0659)	
					(-0.3083)	
Other Investment	-	-	-	-	-	-0.0455
						(0.0616)
						(-0.7389)
Trade	-	0.0477***	-	-	-	-
		(0.0175)				
		(2.7341)				
Credit to private sector	-	-	-	0.1344***	0.1551***	0.1521***
				(0.0296)	(0.0253)	(0.0256)
				(4.5399)	(6.1421)	(5.9410)
Initial mean years of schooling	3.1452***	-	-	-	-	-
	(0.8025)					
	(3.9036)					
GDP per capita growth	-	-	0.1043	0.2563*	0.2397*	0.2377*
			(0.1597)	(0.1518)	(0.1323)	(0.1321)
			(0.6532)	(1.6890)	(1.8112)	(1.8000)
Constant term	-26.3796	17.1648***	32.4436***	21.4847***	20.4360***	20.6848***
	(8.0051)	(3.7312)	(0.7925)	(2.4761)	(2.0917)	(2.1144)
	(-3.2954)	(4.6004)	(40.9381)	(8.6769)	(9.7703)	(9.7828)
R^2	0.4017	0.9357	0.9357	0.9477	0.9443	0.9446
Observations	130	130	120	120	130	130

Note: *Figures in Parenthesis are standard errors (upper), t-statistic (lower). * denotes significance level at 10%, ** at 5%, and *** at 1%. (**Countries included:** Indonesia, Malaysia, Philippines, Thailand, and Singapore)*

Results in column 4 of the table 14 shows that FDI, as well as its lag, is not found to have significant impact on gross domestic savings rate of the 5 ASEAN countries during the 1990-2015 period. This is because these countries attracted FDI by offering incentives to foreign investors, especially the liberal regulations on income repatriation which is considered

as an incentive for foreign investor that repatriation of investment income was easy to be transferred out or repatriated to the home country.

However, it should be noted that during the Asian financial crisis, despites the insignificant positive effect of FDI on domestic savings, the domestic savings rate was also high, especially in Singapore and Malaysia. This because these two countries have effective domestic savings mobilization mechanisms through compulsory savings schemes such as the Central Provident Fund of Singapore and the Employee Provident Fund of Malaysia, with high rate of contribution to the Funds.

Results in column 5 and column 6 of the table 14 shows that short-term capital flows such as portfolio investment and other investment, are not observed to have significant impacts on gross domestic savings rate during the 1990-2015 period. In fact, the short-term capital flows tend to displace domestic savings. In addition, it could be due to the volatile nature of short-term capital that it is easily reversible, especially during the crises that sudden stop of capital inflows, followed by massive outflows, resulted in economic recession, declined in GDP as well as GDP per capita in absolute value, thus savings decreased.

Real GDP per capita growth is found to have significantly positive impact on gross domestic savings rate during the 1990-2015 period, with significant level of 10 percent (as shown in column 4, 5, and 6 of table 14. Increase in income level enhances the capacity to save, hence leverages the domestic savings rate.

As indicated in column 1 and 2 of the table 14, gross domestic investment is positively correlated with domestic savings with 1 percent significant level in the studied period. Theoretically, savings equals to investment, and if the domestic fund is effectively mobilized and allocated to domestic investment to create employment opportunities, income level will increase, resulting in the increase in the domestic savings rate. Promoting domestic investment is a more promising way to enhance sustainable economic growth and raise domestic savings level as the investment income remains in the country, whereas relying on foreign investment leading to the repatriation of the profit which reduces the availability of fund for financing domestic investment.

Column 4, 5, and 6 of the table 14 indicate that domestic credit to the private sector by banks is found to have a significantly positive effect on domestic savings rate in the studied

period. The findings are in line with (Adeniyi and Egwaikhide 2013) and (Agrawal, Sahoo and Dash 2009) that financial development, especially domestic banks' credit to private sector plays an important role in mobilizing domestic savings for investment.

Trade which is the sum of import and export, as indicated in column 2 of table 14, has a positive effect on domestic savings in the two studied periods, with 1 percent significant level. The result indicates the importance of trade liberalization, especially promoting export as a source of foreign exchange earnings which contributes to the increase in the savings rate.

As indicated in column 1 of table 14, average years of schooling at the initial year, as a proxy of human capital, is positively correlated with gross domestic savings rate for both the 1990-2015 period, indicating the more educated population leads to more likely to access to formal financial services.

Overall, regression results show that, during 1990-2015 period, capital inflows, especially short-term capital such as portfolio investment and other investment, are negatively correlated with gross domestic savings rate. This could be due to mass the massive inflows of foreign capital, thus the availability of capital for investments discourage domestic savings.

3.2 2000-2015 period:

3.2.1 Impacts of foreign capital inflows and other factors on economic growth:

Real GDP per capita growth rate is regressed by foreign capital net inflows at aggregate and disaggregate levels as classified in the IMF/balance of payment, and some other factors such as gross domestic savings rate, gross domestic investment, trade openness, and financial development. Table 15 shows the regression results of the 5 ASEAN countries: Indonesia, Malaysia, Philippine, Thailand, and Singapore, whereas table 16 shows the regression results of the 6 ASEAN countries: Indonesia, Malaysia, Philippine, Thailand, and Singapore, and Lao PDR. The nature of each variable in the regression and the results are to be presented as follows:

TABLE 15: REAL GDP PER CAPITA GROWTH REGRESSION RESULTS, 5 COUNTRIES (2000-2015)

Explanatory variables	Explained Variable: Real GDP per capita growth rate, %					
	1	2	3	4	5	**6**
Initial GDP	-0.00007	0.00001	-0.0001	0.00004	0.0001	0.0001
	(0.00009)	(0.00009)	(0.00009)	(0.0001)	(0.00009)	(0.00009)
	(-0.7144)	(0.1283)	(-1.0860)	(0.4560)	(1.6252)	(1.5307)
Domestic Savings	0.1632*	-	-	-	-	-
	(0.0906)					
	(1.8018)					
Domestic investment	-	-0.0020	-	-	-	-
		(0.0858)				
		(-0.0236)				
Total Foreign Capital	-	-	-0.1716**	-	-	-
			(0.0804)			
			(-2.1328)			
lagged Total Foreign Capital	-	-	0.1196	-	-	-
			(0.0769)			
			(1.5543)			
FDI	-	-	-	0.2562**	-	-
				(0.1048)		
				(2.4454)		
lagged FDI	-	-	-	-0.1280	-	-
				(0.0840)		
				(-1.5239)		
Portfolio Investment	-	-	-	-	-0.0242	-
					(0.0559)	
					(-0.4329)	
Other Investment	-	-	-	-	-	0.0076
						(0.0494)
						(0.1536)
Trade	-	0.0076	-	-	-	-
		(0.0139)				
		(0.5499)				
Credit to private sector	-	-	-	-0.1151***	-0.1298***	-0.1262***
				(0.0305)	(0.0315)	(0.0302)
				(-3.7747)	(-4.1208)	(-4.1742)
Crisis 2008	-3.8904***	-3.8132***	-3.8155***	-4.0637***	-4.6633***	-4.6755***
	(0.8198)	(0.8438)	(0.8048)	(0.7425)	(0.7811)	(0.7855)
	(-4.7455)	(-4.5190)	(-4.4708)	(-5.4731)	(-5.9699)	(-5.9526)
Constant term	-0.6045	2.5777	5.1315***	11.9927***	11.9490***	11.7668***
	(2.7613)	(3.5639)	(1.3697)	(1.9889)	(2.1823)	(2.1518)
	(-0.2189)	(0.7233)	(3.7464)	(6.0299)	(5.4754)	(5.4683)
R^2	0.2634	0.2336	0.3950	0.5068	0.3836	0.3822
Observations	80	80	70	70	80	80

Note: *1) Figures in Parenthesis are standard errors (upper), t-statistic (lower). * denotes significance level at 10%, ** at 5%, and *** at 1%. (**Countries included:** Indonesia, Malaysia, Philippines, Thailand, and Singapore)*

TABLE 16: REAL GDP PER CAPITA GROWTH REGRESSION RESULTS, 6 COUNTRIES (2000-2015)

Explanatory variables	Explained Variable: Real GDP per capita growth rate, %					
	1	2	3	4	5	**6**
Initial GDP	-0.00003	-0.00001	0.000007	-0.00002	0.0001	-0.000005
	(0.00002)	(0.00004)	(0.00003)	(0.00002)	(0.00008)	(0.00001)
	(-1.3691)	(-0.3088)	(0.2267)	(-1.0065)	(1.6049)	(-0.3102)
Domestic Savings	0.0493	-	-	-	-	-
	(0.0330)					
	(1.4954)					
Domestic investment	-	0.0704	-	-	-	-
		(0.0512)				
		(1.3734)				
Total Foreign Capital	-	-	-0.1067*	-	-	-
			(0.0572)			
			(-1.8646)			
lagged Total Foreign Capital	-	-	0.1454**	-	-	-
			(0.0657)			
			(2.2129)			
FDI	-	-	-	0.2353**	-	-
				(0.0893)		
				(1.0123)		
lagged FDI	-	-	-	-0.0813	-	-
				(0.0803)		
				(-1.0122)		
Portfolio Investment	-	-	-	-	-0.0196	-
					(0.0537)	
					(-0.3649)	
Other Investment	-	-	-	-	-	-0.0213
						(0.0468)
						(-0.4560)
Trade	-	0.0007	-	-	-	-
		(0.0061)				
		(0.1145)				
Credit to private sector	-	-	-	-0.0085	-0.1235***	-0.0102
				(0.0072)	(0.0295)	(0.0076)
				(-1.1794)	(-4.1874)	(-1.3450)
Crisis 2008	-3.2125***	-3.1657***	-2.9943***	-2.8892***	-4.6260***	-3.1811***
	(-0.7032)	(0.0707)	(0.6720)	(0.6689)	(0.7574)	(0.7096)
	(-4.5683)	(-4.4790)	(-4.4559)	(-4.3193)	(-6.1079)	(-4.4829)
Dummy variable: Lao PDR	2.6134***	1.9497***	1.8722**	0.9633	-	1.7199**
	(0.7501)	(0.6579)	(0.9251)	(0.7782)		(0.7591)
	-3.4839	(2.9636)	(2.0237)	(1.2378)		(2.2656)
Constant term	2.6664***	2.1683	4.2325***	4.7094***	11.4666***	4.5025***
	(0.8980)	(1.4501)	(0.3433)	(0.5406)	(1.9802)	(0.7591)
	(2.9694)	(1.4953)	(12.3280)	(8.7109)	(5.7906)	(2.2656)
R^2	0.2707	0.2683	0.3810	0.4027	0.4208	0.2681
Observations	96	96	84	84	86	96

Note: 1) *Figures in Parenthesis are standard errors (upper), t-statistic (lower). * denotes significance level at 10%, ** at 5%, and *** at 1%.*

2) Countries included: *Indonesia, Malaysia, Philippines, Thailand, Singapore, and Lao PDR (For Lao PDR, Portfolio investment data is not available from 2000 to 2009)*

Net inflows of foreign capital at aggregate level which is positively correlated with real GDP per capita growth rate, however, during the recent period between the 2000 and 2015, as shown in column 3 of the table 15 and table 16, it turns to negatively affects growth rate of real GDP per capita, indicating the increase in its volatility. This would be consistent with the fact that during the investment boom, especially before the Asian Financial crisis hit, these countries relied heavily on inflows of foreign capitals, short-term capital flows, resulted in the trigger of financial crisis indicated by the sudden stop of short-term capital inflows followed by the massive outflow of the capital. Besides, FDI inflow also reduced during the years of crises hit.

FDI, which is positively significant at 1 percent level for the 1990-2015 period, however, in the recent period (2000-2015), as indicated in column 4 of the table 15 and table 16, the positive impact of FDI on real GDP per capital growth rate becomes less significant, which is significant at 5 percent level. This could be due to the capital controls imposed by the advanced ASEAN countries such as Malaysia and Thailand that limited foreign ownership in investment as well as the increase in outward investment of countries such as Singapore and Malaysia.

On the other hand, although FDI is positively correlated with real GDP per capita growth rate in the studied period, and the panel cointegration test results in the table 13 in appendix show that the two variables are cointegrated, Granger causality test results in table the 12 in appendix reveal that FDI net inflow and real GDP per capita growth rate do not granger cause each other, indicating no causal links among the variables.

Column 5 and 6 of the table 15 and table 16, indicate that short-term capital flows such as portfolio investment and other investment are not found to have any significant impact on real GDP per capita growth rate in the 2000-2015 period. In fact, although it is insignificant, the coefficients turn out to have negative sign in the recent period, indicating the increase in its volatility. On the other hand, Short-term capital is no more utilized for productive investments, and they are utilized for financial investment, and sometimes speculative investment.

During the recent period between the year 2000 and 2015, as shown in column 2 of the table 15 and table 16, impact of domestic investment on real GDP per capita growth rate becomes insignificant. This might be due to the fact that investment in these countries, especially Singapore, Malaysia, and Thailand have declined owing to increasing outward

investment, and as it is one of GDP components in expenditure account, the decline in investment lowers the GDP.

Domestic credit to the private sector by banks is found to have the negative impact on economic growth during the 2000-2015 period, as indicated in column 4 through column 6 of the table 15 and column 5 of the table 16. The coefficient is negatively significant at 1 percent level. This could be due to domestic banks' credits are not channeled into growth-oriented sectors. In fact, there are disparities in domestic banks' credit to private sector among these countries. Additionally, those highly developed financial sector countries such as Singapore, Malaysia, and Thailand, as illustrated in the table 10, despites the increasing trend in banks' credit to private sector, domestic investment stagnated in the countries, and even declined in recent few years. This implies that domestic savings are not allocated to investment to boost economic growth. Moreover, among the 6 ASEAN countries, during the 2000 and 2015 period, Indonesia and Lao PDR are the countries which domestic investment exceeds the level of domestic credit to the private sector by banks, implying heavily reliance on foreign borrowing.

Trade is not found to have any significant impact on real GDP per capita growth rate in the 2000-2015 period. This could be explained by the fact that Singapore and Malaysia as well as Thailand during the political turmoil years since the 2008 crisis, have marked the decline trade balance due to the decline in export.

Initial level of real GDP per capita is not found to have any significant impact on real GDP per capita growth rate in the recent period. However, it tends to be negatively correlated with the growth rate. The results found in table 14 are compatible with the fact that during the recent 16 years, the low-income country like Lao PDR grows faster than those higher-income countries such as Singapore, Malaysia, as well as Thailand, Indonesia, and the Philippines.

In general, regression results reveal that, during the 2000-2015 period, short-term capital and foreign capital at aggregate level turn out to be negatively correlated with real GDP per capita growth rate. This is because after the Asian financial crisis short-term capital has no longer been used for productive investments like Thailand did before the crisis, instead, it has been used for speculative investment and financial investment. Of all the categories of capital flows, only FDI, which is more stable compared with short-term capital, has positive impact on the growth rate of real GDP per capita.

3.2.2 Impacts of foreign capital inflows and other factors on domestic savings rate:

Table 17 and 18 show the regression results of gross domestic savings rate, which is regressed by net inflows of foreign capital as well as other observed factors.

TABLE 17: DOMESTIC SAVINGS REGRESSION RESULTS OF 5 COUNTRIES (2000-2015)

Explanatory variables	**Explained Variable: Gross domestic savings rate, % of GDP**					
	1	**2**	**3**	**4**	**5**	**6**
Domestic investment	1.8093***	0.3544***	-	-	-	-
	(0.2574)	(0.1104)				
	(7.0301)	(3.2104)				
Total Foreign Capital	-	-	-0.3748**	-	-	-
			(0.1600)			
			(-2.3423)			
lagged Total Foreign Capital	-	-	0.0944	-	-	-
			(0.1298)			
			(0.7276)			
FDI	-	-	-	0.1625	-	-
				(0.2005)		
				(0.8104)		
lagged FDI	-	-	-	0.4019**	-	-
				(0.1608)		
				(2.4995)		
Portfolio Investment	-	-	-	-	0.0175	-
					(0.0899)	
					(0.1949)	
Other Investment	-	-	-	-	-	-0.0701
						(0.0766)
						(-0.9154)
Trade	-	0.0792***	-	-	-	-
		(0.0212)				
		(3.7362)				
Credit to private sector	-	-	-	0.0497	0.1553**	0.1426**
				(0.0819)	(0.0696)	(0.0698)
				(0.6065)	(2.2308)	(2.0430)
Initial mean years of schooling	4.8880***	-	-	-	-	-
	(0.6123)					
	(7.9832)					
GDP per capita growth	-	-	-0.2069	0.0908	0.1974	0.1734
			(0.2400)	(0.2524)	(0.2244)	(0.2233)
			(-0.8622)	(0.3595)	(0.8800)	(0.7763)
Constant term	-47.8527	11.2704	32.0386***	28.2975	20.7921	21.6180
	(8.9114)	(4.2662)	(1.5050)	(6.4150)	(5.5371)	(5.5459)
	(-5.3698)	(2.6418)	(21.2878)	(4.4111)	(3.7550)	(3.8980)
R^2	0.5908	0.9601	0.9515	0.9542	0.9466	0.9473
No. observations	80	80	70	70	80	80

Note: *1) Figures in Parenthesis are standard errors (upper), t-statistic (lower). * denotes significance level at 10%, ** at 5%, and *** at 1%.*

2) Countries included: *Indonesia, Malaysia, Philippines, Thailand, and Singapore*

TABLE 18: DOMESTIC SAVINGS REGRESSION RESULTS OF 6 COUNTRIES (2000-2015)

Explanatory variables	Explained Variable: Gross domestic savings rate, % of GDP					
	1	**2**	**3**	**4**	**5**	**6**
Domestic investment	1.4954*** (0.2056) (7.2730)	0.7775*** (0.1327) (5.8603)	-	-	-	-
Total Foreign Capital	-	-	-0.4942** (0.2360) (-2.0939)	-	-	-
lagged Total Foreign Capital	-	-	-0.7866*** (0.2495) (-3.1525)	-	-	-
FDI	-	-	-	0.9404*** (0.2876) (3.2698)	-	-
lagged FDI	-	-	-	0.5797* (0.2903) (1.9971)	-	-
Portfolio Investment	-	-	-	-	-0.0070 (0.0864) (-0.0806)	-
Other Investment	-	-	-	-	-	-0.2413 (0.1800) (-1.3400)
Trade	-	0.0849*** (0.0054) (15.8287)	-	-	-	-
Credit to private sector	-	-	-	0.1925*** (0.0242) (7.9694)	0.1476** (0.0683) (2.1624)	0.2332*** (0.0250) (9.3356)
Initial mean years of schooling	4.6644*** (0.5739) (8.1272)	-	-	-	-	-
GDP per capita growth	-	-	0.5076 (0.5434) (0.9341)	0.0729 (0.4696) (0.1553)	0.1411 (0.2165) (0.6517)	0.5243 (0.4712) (1.1127)
Dummy variable: Lao PDR	-5.0204 (2.8945) (-1.7345)	-11.7947*** (1.5928) (-7.4049)	0.6267 (3.3222) (0.1887)	-9.2608*** (2.6983) (-3.4321)	-	-4.6123 (2.8738) (-1.6050)
Constant term	-38.4169 (7.4735) (-5.1404)	-0.1591 (3.3439) (-0.0476)	22.3763*** (2.5052) (8.9320)	15.9913*** (2.6863) (5.9529)	20.8439 (5.2428) (3.9757)	13.1915*** (2.7205) (4.8490)
R^2	0.6821	0.8612	0.6773	0.7691	0.9492	0.9960
Observations	96	96	84	84	86	96

Note: *Figures in Parenthesis are standard errors (upper), t-statistic (lower). * denotes significance level at 10%, ** at 5%, and *** at 1%.*

Countries included: *Indonesia, Malaysia, Philippines, Thailand, Singapore, and Lao PDR (For Lao PDR, Portfolio investment data is not available from 2000 to 2009)*

As indicated in column 3 of the table 17 and 18, at the aggregate level, the net inflow of total foreign capitals is negatively correlated with gross domestic savings rate both during the 2000-2015 period. The coefficient is significant at 5 percent level, and its lagged effect is even more significant (at 1 percent level) when incorporating Lao PDR in the regression. This implies that foreign capital inflows displace domestic savings, and especially for the case of low savings country like Lao PDR that relied largely on foreign borrowing for investment, the availability of foreign funds crowds out domestic savings.

Column 4 of the table 175 and table 18 show that in the 2000-2015 period, FDI is positively correlated with gross domestic savings rate. The reason why FDI is significantly correlated with domestic savings in this period is that Lao PDR may be a large factor which affected by large scale investment in mining sector and infrastructures. It could be one of the results after the Asian Financial Crisis hit in 1997, when many countries introduced capital control by limiting the capital outflows, as mentioned in the previous section, the investment income of foreign investors are not freely repatriated, leading to more funds retained in the country, resulting in the greater positive impact of FDI on domestic savings rate.

Short-term capital flows, both portfolio investment and other investment are not found to have any significant impact on gross domestic savings rate, but tend to be negatively correlated with domestic savings rate, especially other investment.

Real GDP per capita growth rate, which has positively correlated with gross domestic savings rate during the 1990-2015 period, the coefficient becomes insignificant during the recent period (as indicated in column 4 through 6 of the table 17 and table 18). This could because economic growth rate of these ASEAN countries in the recent period, except for the case of Lao PDR, has slowed down and fluctuated dramatically, and might be due to the growth volatility in relation to short-term capital flows.

Domestic investment is highly positive correlated with domestic savings with 1 percent significant level, both for the cases of 5 countries and 6 countries which Lao PDR is included.

Domestic credit to the private sector by banks is found to have a significantly positive impact on domestic savings rate. The findings are in line with findings in literature that financial development, especially domestic banks' credit to private sector plays an important role in mobilizing domestic savings for investment.

Trade which is the sum of import and export, as indicated in column 2 of the table 17 and table 18 that trade openness has a positive effect on domestic savings, with 1 percent significant level. This indicates the importance of trade liberalization, especially promoting export as a source of foreign exchange earnings which contributes to the increase in the savings rate. On the one hand, for the case of 6 countries that Lao PDR is included, as indicated in column 2 of the table 18, the coefficient as well as the t-statistic are much greater that those of the case of 5 countries. This implies that developing country like Lao PDR should promote trade liberalization, especially export promotion to earn foreign exchange.

Average years of schooling at the initial year, as a proxy of human capital, is positively correlated with gross domestic savings rate, both for the cases of 5 countries and 6 countries, with 1 percent significant level. Results indicates that, for the case of 6 countries including Lao PDR, the standard deviation is smaller, and the t-statistic is much greater than that of the 5-country case, implying that developing country, especially Lao PDR should develop human capital or education to enhance financial literacy and savings.

Generally, net inflows of foreign capital displace domestic savings in 2000-2015 period. Only FDI is found to have positive impact on domestic savings rate, implying that FDI related to export brings about increase in income generation, encouraging domestic savings.

4. Overall impacts of capital flows on real GDP per capita growth and domestic savings

The analyses on the effects of capital flows on economic growth and domestic savings based on panel for 5 ASEAN countries (Indonesia, Malaysia, Philippines, Thailand, and Singapore) over the past 26 years from 1990 to 2015, and 6 countries (Indonesia, Malaysia, Philippines, Thailand, Singapore, and Lao PDR) during the past 16 years between the year 2000 and 2015.

Regression analyses based on Panel Fixed-Effects estimation show that, on economic growth, foreign capital inflows at aggregate level as well as short-term capital flows, are positively correlated with real GDP per capita growth rate during the 1990-2015 period, whereas they turn out to have significantly negative correlations with the growth in the 2000-2015 period. It should be noted that in the recent period, the inflow of short-term capital becomes more volatile and focuses on speculative investment which is one with a high degree

of risk, and no has no longer been directed towards investments in growth enhance sector. Of all the categories of foreign capital flows, only FDI is positively correlated with growth rate of real GDP per capita in the two studied periods. On the other hand, domestic savings rate is also found to be positively correlated with real GDP per capita growth rate, both in the 1990-2015 and 2000-2015 periods.

However, it should be noted that to financial sector's activities, including bank lending may not always correspond with domestic investment, since several countries are mobilizing imported capital through capital inflows directly. In addition, there are disparities in domestic banks' credit to private sector between among these countries. Those highly developed financial sector countries such as Singapore, Malaysia, and Thailand, despites the increasing trend in banks' credit to private sector, the domestic investment has stagnated in the countries, and even decline in recent few years, implying domestic savings are not allocated to investment to boost economic growth. Moreover, among the 6 ASEAN countries, during the 2000 and 2015 period, Indonesia and Lao PDR are the countries which domestic investment, as the share of GDP, exceeds the level of domestic credit to the private sector by banks, implying heavily reliance on foreign borrowing.

Besides, although it is found that FDI could have significantly positive impact on economic growth, an empirical study conducted by (Rand and Tarp 2002) argued a different view. Their study results revealed that FDI inflows are very volatile. In the study, they assessed the relationship between FDI and output, the general relationship between the two variables was not found, and indicating there is no connection between domestic investment and FDI. Indeed, they showed that FDI is much volatile than foreign aid flows. As such, they argued that stabilizing FDI is important to modify business cycle fluctuations.

Moreover, the Granger Causality Test results show that there are no causality links between FDI and real GDP per capita growth rate in the two studied periods. Although empirical results from panel fixed-effects estimation show that FDI is positively correlated with real GDP per capita growth rate in the two studied periods, real GDP per capita is not automatically caused by FDI net inflow, and vice versa. In addition, it might be due to the nature of the data used in this study, that is, net inflow data which is relatively smaller than inflow data and in the recent period, there has been large outflow of FDI from Singapore and Malaysia. On the contrary, the incurrence of FDI inflow might be caused by investment climate in host

country, for instances, trade policies, human capital, wage rate, infrastructure, tax and non-tax incentives offered, etc. On the one hand, the fluctuation of net capital flows, especially FDI, could be due to the ASEAN policy that enhances free flow of investment as well as freer flows of capital.

On domestic savings rate, in general, foreign capital inflows are negatively correlated with gross domestic savings rate in the two studied periods. The large inflows of foreign capital crating the availability of financial resources which discourage incentive to save, displacing domestic savings. The empirical results in this study show that only FDI is positively correlated with gross domestic savings rate. However, even though FDI has a significantly positive correlation with gross domestic savings rate, and appears to be more stable compared to the short-term capital due to its sunk cost nature, a past study showed that FDI is also volatile and its volatility is much higher than foreign aid flows.

Reliance on foreign capital inflows, especially short-term capital which is evidenced by the years before 1997 crisis, confronts the countries with financial crisis leading to economy shrinking. These stylized facts suggest that domestic savings should be effectively mobilized and allocated to productive investment in prioritized sectors and areas to attain sustainable economic growth. Besides, in the context of increasing global competition for FDI, developing countries should formulate policies to improve local skills and their human capital as to enhance the countries' absorptive capacity to reap benefit from FDI as well as to improve the quality of FDI that a country can attract.

Chapter 4: Policy Recommendations

The analysis in this research shows that domestic savings in the Lao PDR are low and unstable, creating challenges to sustainable economic growth. Therefore, domestic savings should be effectively mobilized and allocated to productive investment in prioritized sectors and areas to reduce external reliance and attain sustainable economic growth.

Mobilizing domestic savings in Lao PDR is not an easy feat. The government should take initiatives and actions on a broad range of areas, including improving access to formal financial services, providing more appropriate financial services for the rural poor, and providing provide cheap credits to small and medium enterprises which are the core sector of the economy.

On the other hand, greater efforts need to be made to establish the policy-based financial institution for the development of prioritized SMEs in each phase of economic development. In addition, necessary regulatory and enforcement frameworks ensuring discipline in public financial management are required to ensure that any mobilized financial resources are channeled into specific national priorities that will advance inclusive and sustainable economic growth.

1. Policy recommendations for raising domestic savings mobilization

1.1 Create new financial intermediaries and instruments geared toward long-term finance provision.

The current domestic financial sector in the Lao PDR is unable to efficiently serve as financial intermediary. Large demand for long-term credits are unmet, and SMEs are facing difficulties in getting credits from banking sector. Moreover, most of deposits mobilized by banks are in forms of short-term deposits. Therefore, the government should establish new savings pools and create new financial intermediaries and instruments to provide low interest long-term finance for prioritized SMEs. The creation of new financial instruments or the development financial institution will enable public sector to leverage domestic financial resource from private sector, especially to mobilize savings from ordinary citizen for long-term

financing. Both mobilizing savings and allocating of the mobilized funds must be made in the efficient manner to ensure the mobilized funds are effectively utilized for the most productive investments in prioritized activities to foster employment and income generation as well as sustainable economic growth.

1.2 Collect small savings.

Most of the rural population, more than three fourth approximately, reside in rural areas, and banking sector, especially commercial banks are reluctant to provide financial services due to high cost of provision. Due to lack of secured and formal provision of deposit facilities, most of the rural poor's savings are kept in forms of livestock, physical assets, precious metals, as well as kept in secret place at home. Therefore, utilizing the existing postal infrastructure would be the most appropriate vehicle to collect small savings, and to pool a large amount of fund to finance for prioritized SMEs through the development financial institution.

On the other hand, the current Lao Postal Savings Institute which collects deposits and provides credits for government officials at central and provincial levels should be reformed in its function to be a deposit collecting facility for the development financial institution. Its function should serve as a public vehicle to mobilize small savings for productive investments, especially SMEs as prioritized by the government.

Apart from the small savings mobilization through the postal savings system under voluntary savings schemes, well-designed forced savings schemes, exemplified by the experiences of Singapore and Malaysia, should be considered to establish. This is because it ensures long-term financial stream, supplementing to the funds mobilized through the postal savings system.

1.3 Abolish Semi-formal microfinance or village savings and credit groups

The practice of semi-formal microfinance, especially village savings and credit groups operating nationwide should be abolished. Regardless of large number of groups and its function to facilitate savings and credit access to the rural poor, village savings and credit groups are non-professional, and the operation opened only few days a month, and it is questionable in terms of accountability and transparency. Moreover, interest rates charged on

loans are very high, ranging from 2 per cent to 5 percent per month, resulting in high production cost of micro and SMEs that borrow for financing their production.

On the other hand, without the presence of village savings groups, providing deposit facilities through postal savings system can collect more savings to channel into the development financial institution to promote prioritized SMEs.

1.4 Improve the existing policy-based lending facility.

Currently, Lao PDR has a specialized bank namely Nayoby Bank (NBB) serving as a policy based lending facility to provide policy loans at low interest rate to farmers in the 64 poorest districts, and loans to other socio-economic activities in focal areas as defined by the government. The Nayoby Bank (NBB) also provides loans for commercial production in agriculture and forestry sectors, family's cottage industry, handicraft, and services in the rural areas. The Nayoby Bank (NBB) is a policy tool for poverty alleviation under the national poverty eradication strategy.

However, due to the current weak function of the bank, it is unable to serve as an efficient policy based lending institution. The main funding source is borrowing from the central bank, and lack of mobilizing stable and sustainable funds like the system adopted by Japan. In addition, credits provided by the banks do not meet the demand for loans due mainly to inadequate fund, and lack of secured and stable fund mobilization system. On the one hand, non-performing loans remain high, 21.3 per cent in 2014[47], hence, it is required to strengthen bank management.

Since the policy based lending facility has already existed, it could be utilized to provide long-term finance for prioritized SMEs. However, the Nayoby Bank (NBB) should be improved in terms of efficiency and management. Mobilization of funds should not only rely on borrowing from the central bank, government budget, and grants, but secured and stable funding streams should be mobilized such as through postal savings system.

[47] 2014 Annual report on implementation of the NBB, January 2015

1.4 Increase public savings

Domestic savings can be mobilized from both public and private sectors. Lao's public savings are critical owing to chronic fiscal deficits, compelling the government to borrow from external sources to finance the deficit, resulting in high level of external indebtedness. Increasing savings in public sector could be made through improving fiscal management. Sound public financial management is crucial in the process of domestic savings mobilization, ensuring the domestic funds mobilized are effectively used to boost sustainable growth. This includes cutting unproductive expenditures and generating revenue in efficient manners. As addressed in chapter 1, the current public revenue collection is below its potentials, signifying the improvement of revenue collection efficiency.

2. Promote Savings

Currently, savings promotion campaign does not exist in Lao PDR. The FinScope survey (the financial access survey), revealed that 40 percent of those who had no savings in banks or did not use bank services reported that they do not need it, 13 percent did not save due to service providers are too far from their villages, and 11 percent could not maintain minimum balance set by the banks. 13 percent do not understand how banks work, 9 percent do not know how to apply, 5 percent do not understand benefits of saving in banks, and 11 percent fear of being rejected. These indicate the need for provision of financial literacy, and savings promotion to raise awareness about benefits of savings.

Therefore, there should be government policies to raise public awareness about benefits of savings, particularly long-term savings, and to elevate financial literacy level of households and individuals. Since households/individuals do not plan for savings, later, they may suffer from income gap in life and unable to sustain their standards of living. Increasing financial capacity of households as well as individuals helps them make informed financial decisions and increases savings.

Intensive publicity campaigns to promote the savings habit and to encourage thrift and savings among the public should be conducted on a national scale. Promoting of savings should be implemented continuously or on regular basis.

3. Promote sophisticated manufacturing industries and agricultural productivity

The current industrial sector in Lao PDR is attributed to mineral excavation and electricity generation, which do not generate employment for majority of the population. Therefore, investment diversification and manufacturing-oriented investment should be emphasized. This because most of population rely on subsistence agriculture, using traditional techniques for production. Improving agricultural productivity will release large number of labor from subsistence agriculture to enter to the more profitable sector such as manufacturing. Improving and promoting agricultural productivity together with the development of manufacturing will enhance employment and income generation for the most of population, and increase saving level.

Besides, in the context of increasing global competition for FDI, the government should formulate policies to improve local skills and human capital as to enhance the country's absorptive capacity to reap benefit from FDI as well as to improve the quality of FDI that the country can attract. Moreover, attracting FDI should focus on FDI in manufacturing rather than in capital intensive sector such as mining and electricity generation.

4. Put limit on profit repatriation of FDI

Foreign investors are granted the right to repatriate their profits or other funds from their investment (National Assembly 2009), and repatriation of profits is tax exempt (National Assembly of Lao PDR 2011). Thus, the after-tax income earned from FDI has flown out of the country. Therefore, the government should levy tax on repatriation of profits or dividends of foreign companies to increase public revenue and gains from FDI. Additionally, income generated from FDI projects should be retained in the country at least for a certain period, thus allowing more savings to be utilized for domestic investment. This would require complex repatriation procedures. Such control is exemplified by China's practice, for instance, repatriation of after-tax profit can be made only once a year, and some portion of the profit is not allowed to be repatriated. Moreover, the Chinese government levies 5 to 10 percent tax rate on overseas repatriation of dividends[48].

[48] Source: World Bank Group/Public-private partnership in infrastructure resource center https://ppp.worldbank.org/public-private-partnership/legislation-regulation/framework-assessment/legal-environment/foreign-investor-currency-exchange-restrictions

Conclusion

Domestic savings rate of Lao PDR is low relative to the demand for investment compared with other countries in ASEAN. The low domestic savings level in the presence of high demand for investment pushes up the interest rate, depending on the magnitude of investment-savings gap. This impedes investment and economic growth of the country.

Like other developing countries, domestic savings level of Lao PDR is relatively low compared to other developing countries, gross domestic saving rate is only 16 percent of GDP on average during 2000 and 2015 period, while those of Vietnam is 27 percent, Thailand 30 percent, Indonesia 32 percent, Malaysia 40 percent, and Singapore 50.5 percent. Gross domestic saving rate of Lao PDR has gradually increased from 2.44 percent in 2000 to 19.69 percent in 2006 and 20.52 percent in 2009, it turned to dramatically decline to 16.66 percent in 2013 then increased to 23.57 percent in 2015 (The World Bank 2016). The unstable domestic saving level of Lao PDR is closely related to the fluctuation of foreign capital inflows, especially FDI in the natural resource-related sector and other investment as well as the increase in foreign banks presence in the economy since the 2000s. Investment-Savings gap in Lao PDR is relatively large compared with other ASEAN countries. The gap was 14.12 percent of GDP in 2000 then widened to 16.4 percent in 2004 then declined to 8.85 percent in 2013, and has shown the rising trend in recent years. The huge gap between savings and investment in Lao PDR is attributed to low domestic savings rate owing to low income level and underdevelopment of the financial sector.

The shortage of domestic capital compels the government of Lao PDR to mobilize external funds for investment. During 2006 and 2010 period, 46.41 percent of total investment was financed by Official Development Assistance (ODA: grants and loans), while government domestic budget accounted for only 8.9 percent (Ministry of Planning and Investment 2011). Besides, FDI dominates investment in the country. Over the past 25 years, from 1989 to 2014, foreign direct investment accounted for 74.22 percent of total investment, while domestic private and government funding accounted for only 18.24 percent and 7.54 percent respectively (Investment Promotion Department, Ministry of Planning and Investment 2015).

However, the Investment-Savings (I-S) gap has been bridged through foreign direct investment and official development assistance. Given the volatility and uncertainty of foreign

direct investment, high investment level will not be sustained, unless domestic private investment steps up. Empirical evidence in chapter three clearly indicates that reliance on foreign capital inflows to bridge the Investment-Savings (I-S) gap confronts the country with exposure to external risk as foreign capital is volatile in its nature. Therefore, mobilizing domestic savings and channeling the mobilized fund to productive investment in prioritized sectors and areas, especially to prioritized SMEs which dominate the Lao economy, would be the promising way to attain sustainable economic growth for Lao PDR.

Increase domestic savings alone does not ensure sustainable economic growth, unless financial intermediaries are well functioning. Based on lessons drawn from Japanese experience in small savings mobilization to finance investment during post war period, as well as experiences of Singapore and Malaysia, possible mechanism to raise and mobilized domestic savings is proposed. The mechanism requires government initiatives and great support to effectively pool savings mobilized from both domestic public and private sectors and allocate to the most productive investments, especially to the prioritized SMEs. Also, greater efforts need to be made to establish the policy-based financial institution for the development of prioritized SMEs in each phase of economic development. In addition, necessary regulatory and enforcement frameworks ensuring discipline in public financial management are needed to ensure that any mobilized financial resources are channeled into specific national priorities that will advance inclusive and sustainable economic growth.

In this thesis, suggestions for further research concerning raising and mobilizing domestic savings in Lao PDR are offered. Although this research provides major contribution in terms of small savings mobilization and allocation of the mobilized fund for the case of Lao PDR, it is only as good as the data on which it is based due mainly to data limitation. Therefore, in further research, it is required to have more detailed data and analysis on financial sector, and research on household savings, especially determinants of savings at micro level is needed to be conducted.

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Appendix 1

TABLE 19: CORRELATION MATRIX

	TFC	*FDI*	*PORTFOLIO*	*OTHER*	*DOMESTIC_INV*	*DS*	*TR*	*CR*	*INITIAL_GDP*	*GDP*
TFC	1									
FDI	-0.172701792	1								
PORTFOLIO	0.601004127	-0.494842018	1							
OTHER	0.479504937	-0.210227625	-0.059600768	1						
DOMESTIC_INV	0.18808435	0.29996703	-0.10121868	0.092231231	1					
DS	-0.77688581	0.31645872	-0.567906654	-0.434909263	0.316066692	1				
TR	-0.800301838	0.491671326	-0.72363317	-0.334151684	0.07916662	0.824785421	1			
CR	-0.609318516	0.146575869	-0.405585805	-0.395891681	0.077823703	0.787633077	0.670315427	1		
INITIAL_GDP	-0.79245702	0.513434426	-0.801199056	-0.272762515	0.136632975	0.788260338	0.96045945	0.551437173	1	
GDP	-0.785141528	0.539257076	-0.78381616	-0.320545472	0.160771097	0.790301565	0.936293899	0.554066808	0.982755881	1

Source: Author's calculation based on data from IMF/IFS and World Bank/WDIs

TABLE 20: DESCRIPTIVE STATISTICS

	GDP	GDP_GR	TFC	FDI	PORTFOLIO	OTHER	DS	DOMESTIC_INV	TR	CR
Mean	10549.25	3.384894	-4.262232	2.398897	-2.008573	-0.790250	33.40260	27.45689	157.5095	78.09794
Median	3893.726	3.812859	-3.245342	1.732881	-0.063345	-0.828777	32.69489	25.48741	119.5725	88.55671
Maximum	51855.08	13.21649	22.53054	13.73763	14.03442	14.48848	54.28837	43.64010	439.6567	166.5041
Minimum	1444.546	-14.35101	-26.62493	-4.271337	-27.03793	-22.26450	13.20180	11.36740	41.93771	17.75938
Std. Dev.	13933.95	3.735936	9.307673	3.513095	7.327793	6.581871	12.12288	6.941385	111.8360	40.00173
Skewness	1.728412	-1.578611	-0.216099	1.065048	-1.729111	-0.315559	-0.014187	0.563331	1.065607	-0.009015
Kurtosis	4.592900	7.637586	2.926434	4.216544	5.675816	3.713196	1.975494	2.610229	2.822959	1.779073
Jarque-Bera	78.47108	170.4910	1.041118	32.59365	103.5628	4.912687	5.689760	7.698639	24.77266	8.076178
Probability	0.000000	0.000000	0.594188	0.000000	0.000000	0.085748	0.058141	0.021294	0.000004	0.017631
Sum	1371402.	440.0362	-554.0901	311.8566	-261.1144	-102.7325	4342.338	3569.396	20476.23	10152.73
Sum Sq. Dev.	2.50E+10	1800.481	11175.63	1592.097	6926.855	5588.412	18958.38	6215.585	1613440.	206417.9
Observations	130	130	130	130	130	130	130	130	130	130

Source: Author's calculation based on data from IMF/IFS and World Bank/WDIs

TABLE 21: MEASUREMENT OF VARIABLES

Variables	**Proxy used (Period covered: 1990-2015)**	**Source of data**
DS	Gross domestic savings (% of GDP). Gross domestic savings are calculated as GDP less final consumption expenditure (total consumption)	WB/WDIs 2016
GDP_GR	Annual percentage growth rate of GDP per capita based on 2010 constant price, local currency	WB/WDIs 2016
Domestic_INV	Gross capital formation (formerly gross domestic investment), Gross capital formation or Gross Domestic Investment (% of GDP). It consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings.	WB/WDIs 2016
FC: 1). TFC 2). FDI 3). PORTFOLIO 4). OTHER	FC: Vector of foreign capital net inflows (calculated as net incurrence of Liabilities minus net Acquisition of financial assets). Inflows are the value of Inward investment made by the non-residents investors in the reporting economy, whereas outflows are the value of outward investment made by the residents of the reporting economy to external economies. 1). Total foreign capital net inflow is the sum of net inflows of FDI, Portfolio investment, and Other investment	Author's calculation based on data from IMF/IFS_ Balance of Payments and International Investment Position presentation (net current account), and WB/WDIs 2016 (for GDP)

	2). Foreign direct investment, net inflows, % of GDP. Foreign direct investment is the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. 3). Portfolio investment, net inflow, % of GDP. Portfolio equity includes net inflows from equity securities other than those recorded as direct investment and including shares, stocks, depository receipts (American or global), and direct purchases of shares in local stock markets by foreign investors. 4). OTHER: Other Investment, net inflow, % of GDP (Other investment includes loans, financial transactions in currency and deposits, and trade credit and advances)	
Initial_GDP	GDP per capita (based on constant 2010 price $US) in starting year refers to 1990 for the 1990-2015 period, and to the year 2000 for the 2000-2015 period	WB/WDIs 2016
CR	Domestic credit to private sector by banks, % of GDP	WB/WDIs 2016. For the Lao PDR, data from 2011 onward is based on data from Bank of the Lao PDR's annual report
Trade openness: TR	Trade is the sum of exports and imports of goods and services measured as percent of GDP	WB/WDIs 2016
Initial mean years of schooling: Schl_YEARS	The average years of schooling of population aged 15 and above in starting year refers to 1990 for the 1990-2015 period, and to the year 2000 for the 2000-2015 period	WB/Education Statistics (Barro-Lee)

Crisis 97 and Crisis 08	The dummy variables capturing the influence of Asian Financial crisis and the 2008 global financial crisis	
D_{LAO}	The country dummy variable that captures the influence of Lao PDR's country specific or unobserved factors	
Studied periods: 1). From 1990 to 2015 (5 countries are included: Indonesia, Malaysia, Thailand, Philippines, and Singapore) 2). From 2000 to 2015 (6 countries are included: Indonesia, Malaysia, Thailand, Philippines, Singapore, and Lao PDR) **Note:** For Lao PRD, before 2000, Domestic Savings rate and domestic investment rate data are not available, and before 2010, portfolio investment data of the country is not available.		

Testing for Causal links between FDI net inflow and economic growth

Since FDI-Growth nexus has received much attention over the past decades, several studies investigating causal relationship between FDI and economic growth found the existence of causal links between the two variables. Evidence from empirical study conducted by (Sooreea-Bheemul and Sooreea 2013) found that there exist bidirectional causality between FDI and GDP growth while (Gursoy, Sekreter and Kalyoncu 2013) found that bidirectional causality between the two variables exists for the case of Turkmenistan, whereas there is unidirectional causality running from FDI to GDP for the case of Azerbaijan. For the case of ASEAN-5 countries, namely Indonesia, Malaysia, Philippines, Singapore and Thailand, (Pradhan 2009) found that during 1970-2007 period, at the panel level, foreign direct investment and economic growth are co-integrated, indicating the presence of long-run equilibrium relationship between them. However, at the individual country level, this is true only for the case of Thailand and Singapore. Moreover, the Granger causality test also found that there are bidirectional causality FDI and economic growth both at the panel level as well as individual country level except Malaysia.

However, past studies on FDI-economic growth link emphasized on the links between the inflows of FDI and economic growth, hence, the matter of the outflow is neglected. Therefore, in this study, FDI net inflow data is utilized to investigate FDI-growth nexus. Net inflows of FDI (inflow minus outflow, thus net inflow amount is smaller than inflow amount used in many studies) reflects the real amount of capital retaining in the country. Change in net FDI inflow is the matter of changes in the FDI inflows (FDI inflows are the value of Inward direct investment made by the non-residents investors in the reporting economy) and/or the change in FDI outflows (FDI outflows are the value of outward direct investment made by the residents of the reporting economy to external economies). If the increase in FDI inflow is greater than the increase in FDI outflow, does not significantly accelerate GDP as well as GDP per capita growth.

This study focuses on panel data to examine the direction of causality between FDI net inflow and real GDP per capita growth rate of selected ASEAN countries namely, Indonesia, Malaysia, Philippines, and Thailand during the 1990-2015 period, and the 2000-2015 period which Lao PDR is included. The reason for conducting the two studied periods is that the FDI flows into these countries has marked significant increase since the early 1990s. In addition, during the recent period, 2000-2015, not only the substantial increase in FDI inflow is observed, but also the large outflow of FDI, especially for the case of Singapore and Malaysia, whereas Lao PDR has received massive FDI inflows since the 2000s onward.

The empirical results are reported in three steps as follows:

1. Panel Unit Root Test

The first step of proceeding Granger Causality Test is to test for unit root that is the variables must be stationary to avoid possible spurious relationships among the variables. Panel unit root are tested by (Levin, et al. 2002), and Im, Pesaran and Shin W-Stat test (Im, Pesaran and Shin 2003) unit root tests. The unit root test results are shown in table 20 below:

TABLE 22: PANEL UNIT ROOT TEST RESULTS

Period	Variables		Levin, Lin & Chu		Im, Pesaran and Shin W-Stat	
			Level	First Difference	Level	First Difference
1990-2015	GDP per capita growth	Individual Intercepts	-6.76997***	-11.5770***	-5.65790***	-11.9638***
		Individual Intercepts and Trends	-6.79138***	-9.78856***	-5.29897***	-10.6537***
	FDI net inflow	Individual Intercepts	-1.40680*	-11.1707***	-1.62671*	-10.9854***
		Individual Intercepts and Trends	-1.59667*	-7.13078***	-2.06593**	-7.84530***
2000-2015	GDP per capita growth	Individual Intercepts	-5.94723***	-8.80670***	-4.84946***	-7.70031***
		Individual Intercepts and Trends	-6.92461***	-7.20891***	-3.80222***	-5.41111***
	FDI net inflow	Individual Intercepts	-2.90175***	-10.1213***	-1.99486**	-8.50374***
		Individual Intercepts and Trends	-3.63605***	-7.59063***	-2.28203***	-6.40221***

Notes: *1). ***denotes significance level at 1%, **5%, and *1% indicates rejection of null hypothesis of non-stationary.*

2). Lags for the test are automatically selected based on Schwarz Information Criterion (SIC), the standard step-down procedure, maximum lags of 1 and 2 for the 1990-2015 and 2000-2015 period, respectively.

Results shown in the table 20 shows the set of statistics of the models of interest: individual intercepts and individual intercepts and trends with one lag. The results of the panel unit root statistics on FDI net inflow show during 1990-2015 period that, at level for the two models of interest, the null hypothesis that variables are non-stationary is rejected by the left tail of normal distribution, this study fails to reject the null hypothesis at 5% significance level; meaning that FDI net inflow during 1990-2015 period has unit root or non-stationary. However, for the 2000-2015 period, at level for both individual intercepts and individual intercepts and

trends, the null hypothesis is rejected at 1% significance level, the data is stationary. For real GDP per capita growth in the two periods, at level for both individual intercepts and individual intercepts and trends, the null hypothesis is rejected at 1% significance level, the data is stationary. At first differences, both GDP per capita and FDI net inflow for the two models of interest, are stationary. The null hypothesis is rejected at 1% level. This implies that real GDP per capita growth and FDI net inflow are integrated of order one.

2. Panel Cointegration Test

After testing for unit root or stationary, the next step is testing for panel cointegration. The test is based on (Pedroni 1999) residual-based cointegration tests, which allows for cointegrating vectors of differencing magnitudes between individual as well as time fixed effects.

TABLE 23: PANEL COINTEGRATION TEST RESULTS

H_0: No cointegration vector between FDI net inflow and real GDP per capita growth				
Statistics	**1990-2015**		**2000-2015**	
	Individual Intercepts	Individual Intercepts and Trends	Individual Intercepts	Individual Intercepts and Trends
Panel V-Statistic	-1.1000621	-2.731148	-0.898732	-0.671092
Panel rho-Statistic	-4.939344***	-3.038281***	-3.705054***	-4.958028***
Panel PP-Statistic	-5.962743***	-6.299000***	-6.245519***	-15.79523***
Panel ADF-Statistic	-6.041250***	-6.635412***	-6.081588***	-11.52394***
Group rho-Statistic	-3.248190***	-1.875779**	-2.129239**	-3.660946***
Group PP-Statistic	-6.135021***	-6.830364***	-5.934259***	-15.43466***
Group ADF-Statistic	-6.180473***	-6.349683***	-5.444606***	-12.29022***
Decision	**Reject H_0**	**Reject H_0**	**Reject H_0**	**Reject H_0**

Notes: *1). ***denotes significance level at 1%, **5%, and *1% indicates rejection of null hypothesis of non-stationary.*

2). Lags for the test are automatically selected based on Schwarz Information Criterion (SIC), the standard step-down procedure, maximum lags of 5 and 2 for the 1990-2015 and 2000-2015 period, respectively.

The first four statistics in the table 21 are panel cointegration statistics, and the last three are group mean panel cointegration statistics. Findings in the table show that the null hypothesis of No cointegration vector between FDI net inflow and real GDP per capita growth is rejected

by Panel Rho-Statistic, Panel PP-Statistic, and Panel ADF-Statistic, whereas Panel V-Statistic fails to reject the null hypothesis of no cointegration. According to (Osbat, F.C. and Schntz 2005), Panel Rho-Statistic and Panel PP-Statistic are more reliable tests of cointegration compared with other tests. Therefore, this study has enough statistical evidence to conclude that FDI net inflow and real GDP per capita growth are cointegrated, meaning that there is long run relationship among the two variables.

3. Panel Causality Test

Since FDI net inflow and real GDP per capita growth are cointegrated, the next step is to determine direction of relationship among the two variables by applying Granger Causality test. Pair of regression for Granger Causality test are exhibited as below:

$$GDP\_GR_{it} = b_1 FDI_{i(t-4)} + b_2 GDP\_GR_{i(t-4)} + c_i$$

$$FDI_{it} = a_1 FDI_{i(t-4)} + a_2 GDP\_GR_{i(t-4)} + f_i$$

GDP per capita growth (GDP_GR_{it}) and FDI net inflow (FDI_{it}) are observed for country $i = 1,\ldots, n$ and time $t = 1,\ldots, T$.

The terms c_i and f_i represent individual-specific unobserved heterogeneity in both *FDI* and *GDP_GR*. They are treated as "fixed effects", thereby allowing one to control for all unchanging characteristics of the individuals, which is a key factor in arguing for a causal interpretation of the coefficients.

If all the assumptions are met, b_1 can be interpreted as the causal effect of *FDI net inflow* on *GDP per capita growth*, and a_2 can be interpreted as the causal effect of *GDP per capita growth* on *FDI net inflow*. This model can be elaborated in various ways to include, for example, other predictor variables, different lags, and coefficients that change over time.

TABLE 24: PAIRWISE GRANGER CAUSALITY TEST RESULTS FOR FDI AND REAL GDP PER CAPITA GROWTH RATE

Pairwise Granger Causality Test				
Lags: 4				
Sample Period:	Null Hypothesis:	Obs.	F-Statistic	Prob.
1990-2015	FDI does not Granger Cause GDP_GR	110	0.83540	0.5058
	GDP_GR does not Granger Cause FDI		1.28378	0.2814
2000-2015	FDI does not Granger Cause GDP_GR	72	1.18247	0.3272
	GDP_GR does not Granger Cause FDI		0.36533	0.8324

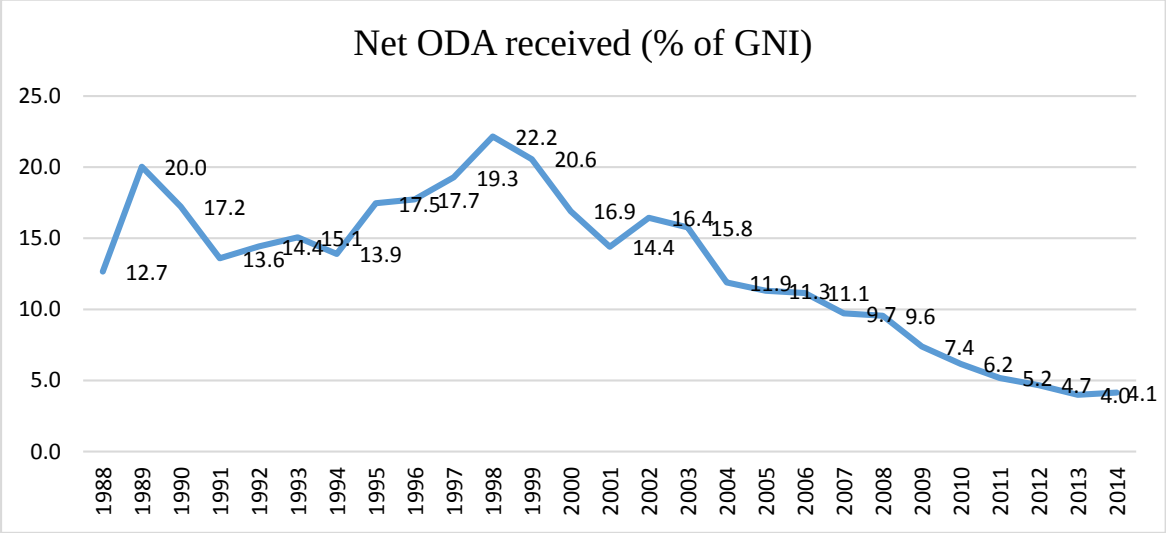
Based on the system equation model and the lag length selection criteria that lower the value of the criteria, better the model; and according to the LR, PFE, and AIC criterions, all show that the optimal lag length to be used are 4 lags.

The null hypothesis is rejected when the test value falls into the rejection region, that is, the p-value (Prob. Value in the table) is less than 0.05 or 5%. The Granger Causality Test results in the table fail to reject the null hypothesis of no causality running from FDI to real GDP per capita growth and that of no causality from real GDP per capita growth rate to FDI for both in the 1990-2015 period and 2000-2015 period. The null hypothesis that FDI does not Granger Cause GDP per capita growth (for the 2 periods) is not rejected that P-value is 0.5085 or 50.58% for 1990-2015 period and 0.3272 or 32.72% for 2000-2015 period, and the null hypothesis that GDP per capita growth does not granger cause FDI is not rejected due to P-value is 0.2814 or 28.14% for1990-2015 period and 0.8324 or 83.24% for 2000-2015 period.

Even though the two variables are correlated and cointegrated, it does not always imply the existence of causal links among the variables. The reason behind this is that it might be due to the nature of the data used that is net inflow of FDI (inflow minus outflow, thus net inflow amount is smaller than inflow amount used in many studies) which reflects the real amount of capital retaining in the country. Moreover, change in net FDI inflow is the matter of changes in the FDI inflows (FDI inflows are the value of Inward direct investment made by the non-residents investors in the reporting economy) and/or the change in FDI outflows (FDI outflows are the value of outward direct investment made by the residents of the reporting economy to external economies). If the increase in FDI inflow is greater than the increase in FDI outflow, does not significantly accelerate GDP growth, implying no causal link between FDI net inflow and growth rate of GDP as well as GDP per capita.

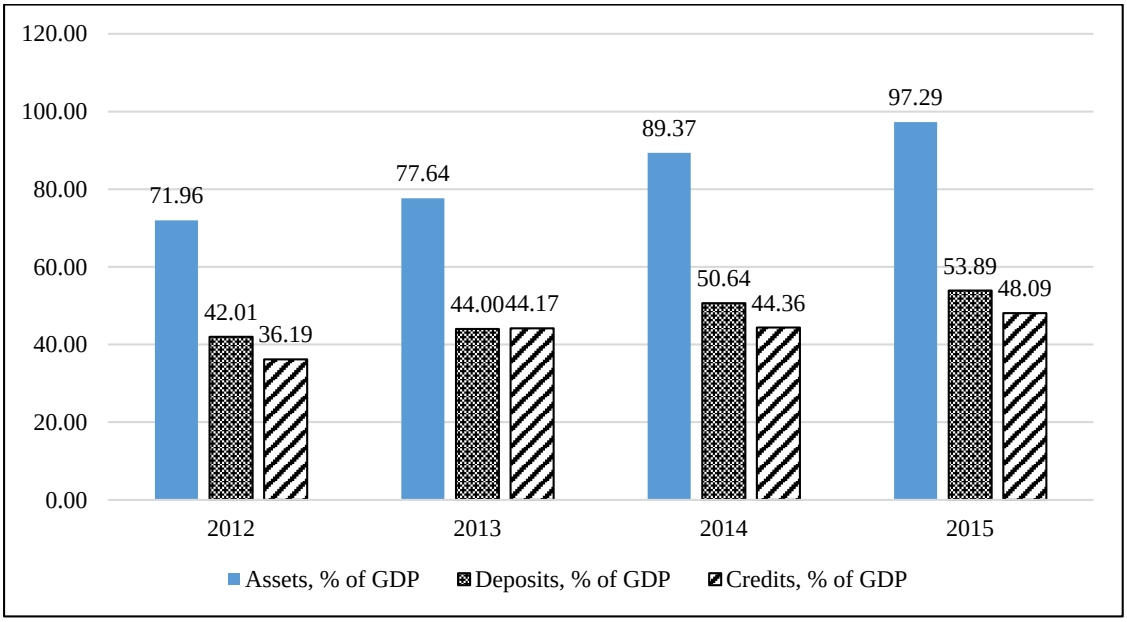
Appendix 2

FIGURE 16: NET ODA RECEIVED BY LAO PRD BETWEEN 1988AND 2014



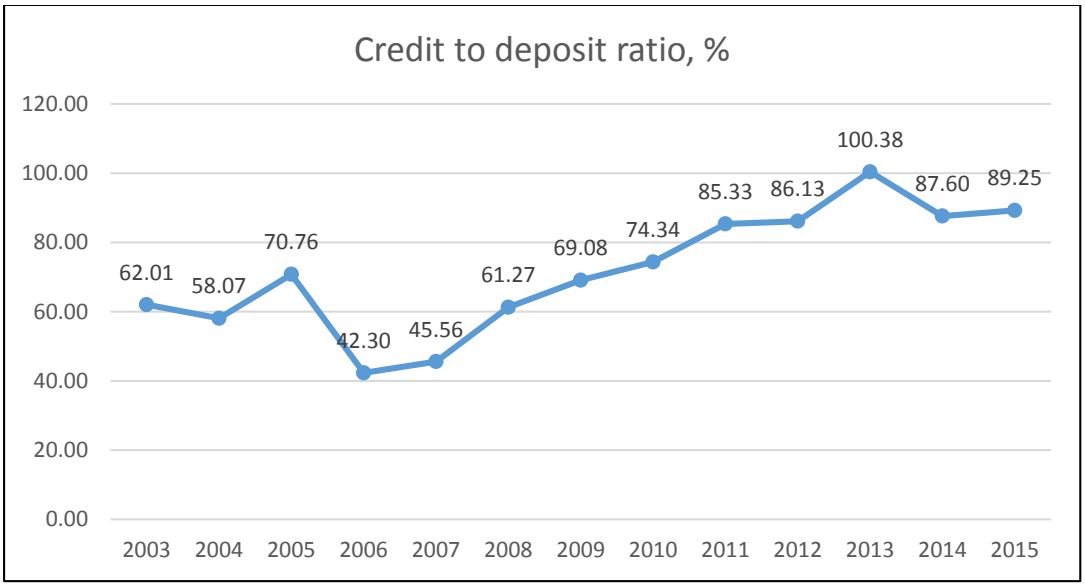
Source: The World Bank, WDI 2016

FIGURE 17: TOTAL ASSETS, DEPOSITS, AND CREDITS OF BANKING SECTOR (% OF GDP)



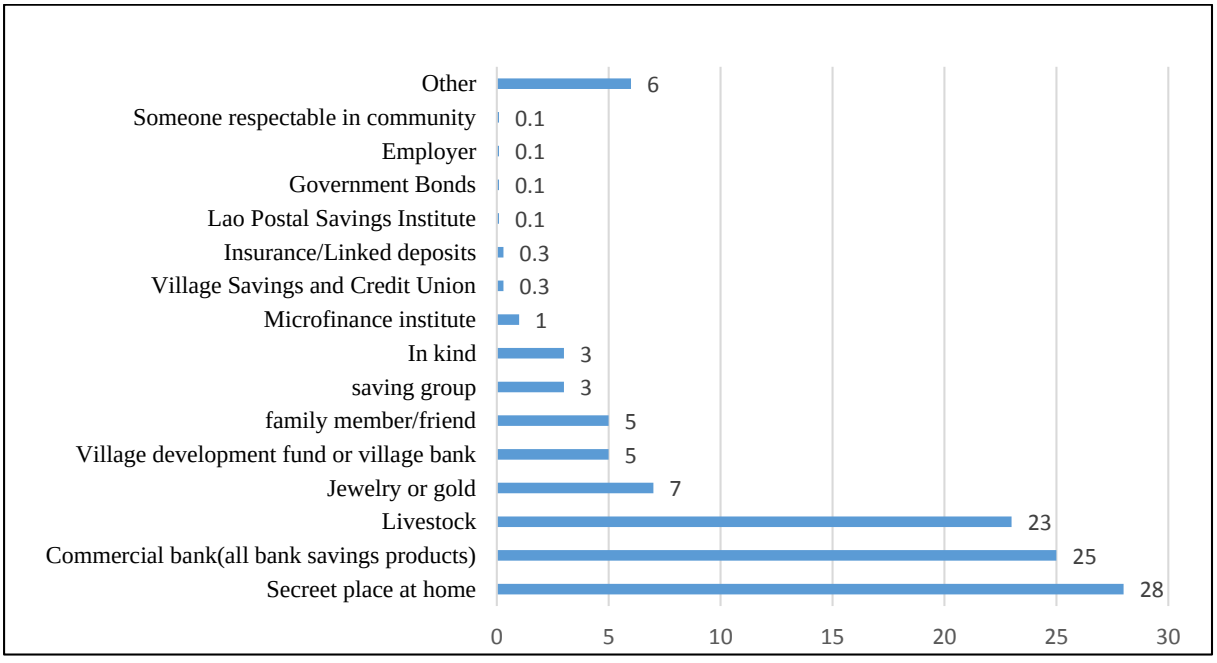
Source: Bank of the Lao PDR/Monetary Policy Department

FIGURE 18: BANKS' CREDIT TO DEPOSIT RATIO, %



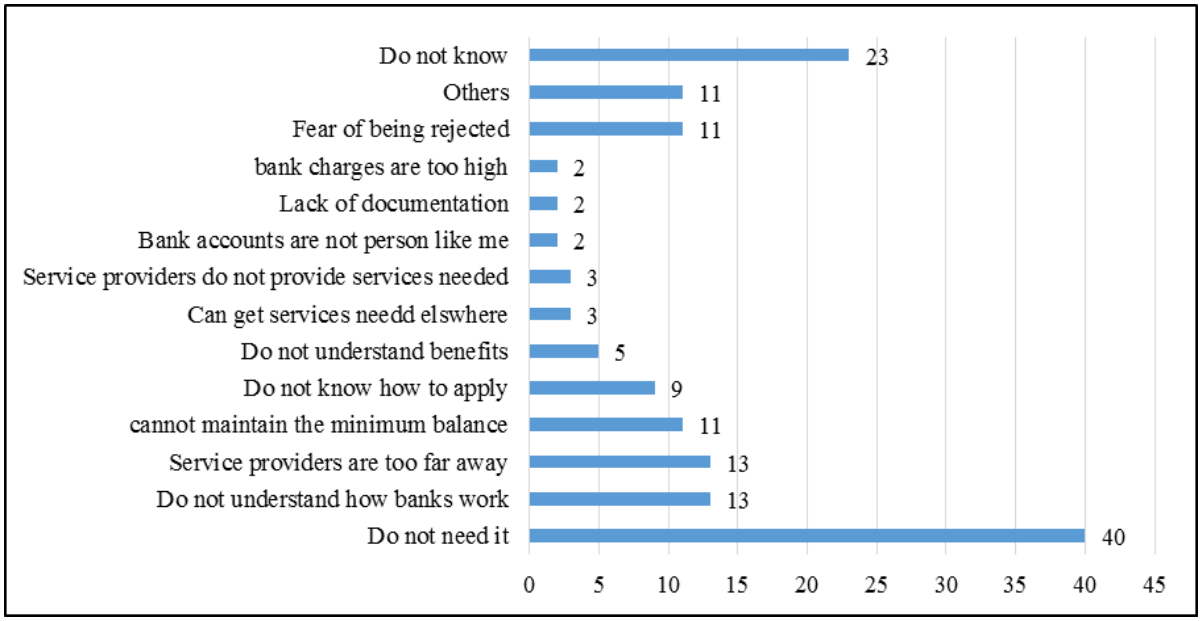
Source: Author's calculation based on data from Bank of The Lao PDR

FIGURE 19: SAVINGS MECHANISM OF LAO PEOPLE IN 2014, % OF THOSE WHO HAVE SAVINGS



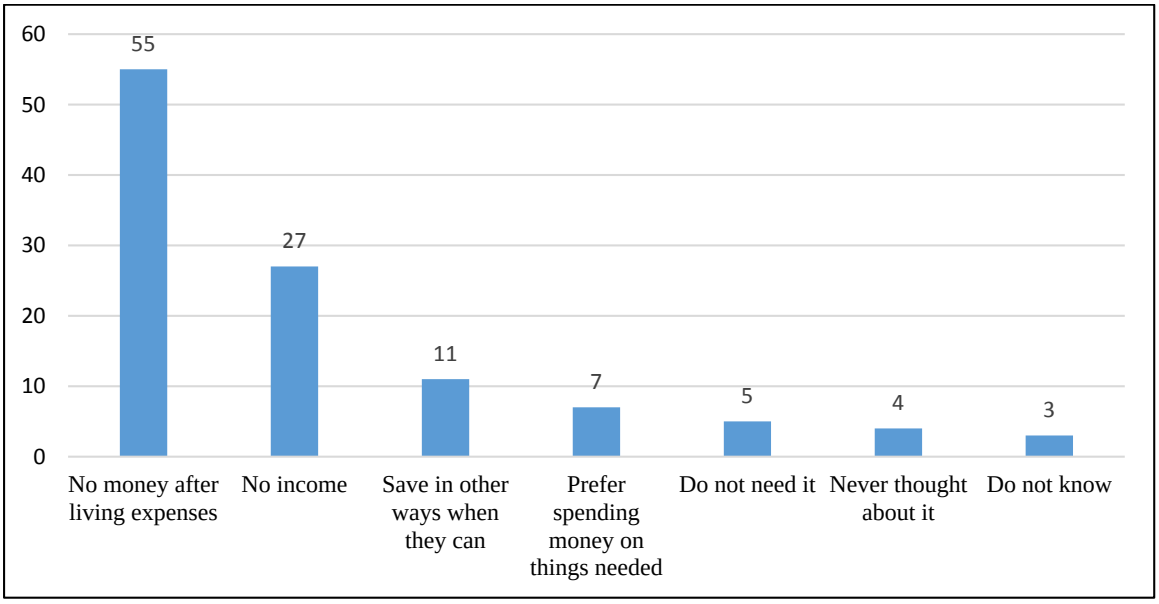
Source: FinScope Survey, Lao PDR 2014

FIGURE 20: REASONS FOR NOT HAVING A BANK ACCOUNT OR USING BANK SERVICES, % OF UNBANKED POPULATION



Source: FinScope Survey, Lao PDR 2014

FIGURE 21: REASONS FOR DIS-SAVINGS, % OF THOSE WHO DO NOT SAVE



Source: FinScope Survey, Lao PDR 2014

TABLE 25: GOVERNMENT REVENUE, 2000/01 TO 2015/16 FISCAL YEAR (MILLIONS OF KIP)

Government Revenue *Unit: millions Kip*	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Tax revenue	**1,642,139**	**1,878,681**	**1,927,538**	**2,328,873**	**2,803,111**	**3,641,119**	**4,720,662**	**5,627,098**	**6,207,581**	**7,502,550**	**9,108,642**	**10,939,852**	**12,657,767**	**14,665,703**	**15,818,886**	**16,248,121**
Profit tax	205,214	242,704	225,479	221,582	307,201	458,874	918,634	1,321,602	1,302,966	1,124,901	1,592,151	2,196,035	2,187,842	1,858,049	2,129,155	1,753,050
Income tax	152,793	125,500	139,833	179,369	214,891	234,242	251,838	333,066	424,682	462,393	543,456	744,195	855,713	977,970	1,099,810	1,592,690
Agriculture-land tax	16,751	19,341	23,157	25,151	27,624	30,129	46,566	77,951	63,908	77,569	98,154	55,151	188,845	109,598	130,777	104,750
Business licences	424	684	1,185	1,446	2,209	6,103	1,456	2,524	3,675	2,459	6	-	-	-	-	-
Minimum tax	318,029	9,915	9,232	9,931	12,789	22,174	19,267	21,502	29,243	33,278	41,612	49,561	38,938	12,270	3,082	(0)
Turnover tax	371,284	374,738	466,461	594,498	673,472	887,125	1,045,994	1,228,523	1,401,039	1,868,674	510,043	410,809	190,997	298,758	247,669	0
VAT	-	-	-	-	-	-	-	-	-	-	1,893,095	2,416,205	3,221,091	3,586,743	4,480,683	4,814,809
Excise taxes	178,932	285,870	293,488	483,481	522,825	800,332	998,697	1,190,012	1,432,487	1,686,697	1,947,595	2,344,314	2,733,712	3,356,608	3,363,018	3,734,380
Import duties	56,735	240,270	315,770	351,239	428,636	514,546	572,611	674,181	726,215	832,043	964,627	1,047,329	1,204,919	1,516,518	1,356,531	1,725,721
Export duties	15,002	50,570	46,484	28,137	43,449	53,132	25,864	22,266	48,839	58,812	115,078	105,074	91,835	308,029	229,843	68,696
Registration Fees	70,673	12,435	13,959	15,967	17,578	24,689	16,345	13,930	26,693	44,611	55,466	45,971	786,787	82,112	61,701	74,261
Other Fees	23,600	91,579	106,508	129,012	211,167	162,600	294,272	263,417	372,645	701,997	532,410	537,403	137,993	1,018,947	1,234,536	1,375,870
Natural Resources taxes	181,506	16,894	23,019	32,382	94,799	217,551	273,805	316,522	219,476	450,550	526,893	725,722	699,506	1,120,342	587,061	507,112
Timber royalties	51,196	361,849	217,964	225,035	189,367	172,460	212,275	105,198	78,051	49,293	92,737	78,597	107,541	152,688	540,069	135,492
Hydro-power royalties	-	46,334	44,998	31,643	57,105	57,161	43,039	56,404	77,663	109,273	195,319	183,486	212,048	267,070	354,951	361,290
Non-tax revenues	**358,300**	**448,551**	**417,216**	**493,587**	**584,337**	**624,865**	**620,308**	**811,495**	**822,848**	**1,035,825**	**1,072,635**	**1,512,900**	**3,271,294**	**3,203,246**	**2,715,501**	**2,751,484**
Leasing fees	38,901	21,954	35,629	27,791	44,233	36,111	29,920	27,220	41,084	38,028	29,818	80,782	37,539	50,436	113,863	39,751
Concessions	1,425	1,590	3,036	4,423	8,082	7,362	8,662	17,928	30,657	37,602	31,016	55,532	74,180	85,809	93,306	85,367
Fines	12,110	12,715	16,210	19,659	15,274	23,816	33,061	31,408	25,251	29,764	43,273	39,772	83,829	79,624	124,189	78,255
Administration fees	23,555	84,755	54,113	90,905	69,218	89,182	94,874	90,957	76,028	122,545	98,922	189,625	406,985	297,649	608,414	854,420
Depreciation and dividends	67,176	84,167	86,582	106,427	177,817	174,782	156,669	303,263	338,348	419,000	507,433	763,952	922,381	1,419,494	946,052	607,020
Interest	76,336	56,164	47,425	46,137	47,951	65,045	65,898	105,280	94,655	147,214	97,689	100,968	99,573	74,568	289,230	425,940
Overflight rights	114,419	187,207	174,221	198,245	221,762	228,568	231,225	235,438	203,422	222,410	244,806	257,485	329,120	658,041	525,795	608,990
Forest preservation fund	24,379	-	-	-	-	-	-	-	13,403	12,182	11,847	13,548	26,003	22,723	5,644	31,220
Others	-	-	-	-	-	-	-	-	-	7,080	7,831	11,236	1,291,684	514,902	9,007	20,522
Total Tax and Non-tax revenues	**2,000,439**	**2,327,233**	**2,344,754**	**2,822,460**	**3,387,448**	**4,265,984**	**5,340,970**	**6,438,592**	**7,030,430**	**8,538,375**	**10,181,277**	**12,452,752**	**15,929,061**	**17,868,949**	**18,534,386**	**18,999,605**
Sale of State Assets	6,763	4,130	4,996	13,039	12,066	15,413	6,909	34,260	48,571	277,188	268,908	91,256	397,342	205,385	623,309	294,491
Capital return	160,272	141,570	155,986	115,156	129,704	129,564	112,080	144,064	142,844	139,349	150,990	179,569	192,394	95,661	748,103	747,098
Pump amortization	-	167	236	271	194	322	161	11	176	129	-	-	-	-	-	-
Total Revenue with Asset sale+Cap.R	**2,167,474**	**2,473,100**	**2,505,972**	**2,950,926**	**3,529,411**	**4,411,284**	**5,460,120**	**6,616,928**	**7,222,021**	**8,955,041**	**10,601,175**	**12,723,577**	**16,518,798**	**18,169,995**	**19,905,799**	**20,041,193**

Source: Fiscal Policy Department, Ministry of Finance Lao PDR.

TABLE 26: FISCAL REVENUES AND EXPENDITURES, % OF GDP

Public revenue and expenditures, % to GDP	2000-01	20001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-13	2002-13	2013-14	2014-15	2015-16
Revenue and Grants	0.17	0.15	0.14	0.13	0.14	0.16	0.16	0.17	0.17	0.23	0.22	0.24	0.26	0.25	0.24	0.19
Tax revenue	0.11	0.11	0.09	0.10	0.10	0.11	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.16	0.16	0.15
Non-tax revenue	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.03	0.03
Grants	0.03	0.01	0.02	0.01	0.02	0.03	0.03	0.03	0.02	0.07	0.06	0.06	0.07	0.05	0.05	0.02
Total Expenditure	0.23	0.20	0.20	0.16	0.19	0.19	0.19	0.20	0.21	0.25	0.24	0.25	0.31	0.28	0.29	0.25
Current Expenditure	0.09	0.09	0.08	0.09	0.10	0.11	0.11	0.12	0.14	0.13	0.13	0.13	0.20	0.17	0.18	0.17
Capital Expenditure	0.14	0.11	0.12	0.07	0.09	0.09	0.09	0.08	0.07	0.12	0.12	0.12	0.11	0.10	0.11	0.09
Overall balance	-0.06	-0.05	-0.07	-0.03	-0.05	-0.04	-0.03	-0.03	-0.04	-0.02	-0.02	-0.01	-0.04	-0.03	-0.05	-0.06
Overall balance (Excluding grants)	-0.09	-0.06	-0.09	-0.04	-0.07	-0.07	-0.06	-0.06	-0.06	-0.09	-0.08	-0.08	-0.11	-0.08	-0.10	-0.08

Source: Fiscal Policy Department, Ministry of Finance Lao PDR

TABLE 27: EXTERNAL DEBTS OF LAO PDR

External debts, million US $	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total debt outstanding and disbursed	2535.0	2584.7	3167.5	2507.3	2946.5	3276.6	3806.6	5022.7	5670.3	6382.8	6486.8	7546.6	8168.7	9425.6	10724.3
Long-term debt	2474.1	2534.5	3103.5	2448.0	2893.7	3178.9	3662.0	4779.0	5468.8	6088.8	6381.0	7401.9	8042.4	8544.5	9779.9
Public and publicly guaranteed	2474.1	2534.5	2719.4	2061.3	2349.8	2353.8	2571.6	2931.6	3202.1	3464.2	3770.8	4276.9	4542.4	5146.4	5630.7
Private nonguaranteed	N/A	N/A	384.1	386.7	543.9	825.1	1090.4	1847.4	2266.8	2624.6	2610.2	3125.0	3500.0	3398.1	4149.2
Short-term debt	6.3	1.0	8.0	1.0	N/A	55.0	103.0	203.0	166.0	199.0	18.0	62.0	47.0	803.0	871.0
Use of IMF credit	54.7	49.2	56.0	58.3	52.8	42.7	41.6	40.6	35.4	95.1	87.8	82.7	79.3	78.0	73.4
External debt, % of GNI	152.7	152.1	187.0	131.3	129.8	122.7	116.7	123.2	109.3	112.6	96.6	98.1	93.3	89.3	95.9
Total long-term debt, % of total debt	97.6	98.1	98.0	97.6	98.2	97.0	96.2	95.1	96.4	95.4	98.4	98.1	98.5	90.7	91.2
Short-term debt, % of total debt	0.2	0.0	0.3	0.0	N/A	1.7	2.7	4.0	2.9	3.1	0.3	0.8	0.6	8.5	8.1
Debt service, % of exports of goods and services	8.0	9.0	19.6	22.1	22.9	17.6	16.4	15.8	14.1	15.3	13.0	12.8	9.1	10.6	N/A

Source: ADB/Key indicators for Asia and the Pacific 2016

TABLE 28: COMMERCIAL BANKS' CREDITS BY SECTOR, % OF TOTAL CREDITS

Commercial Banks' credit by sector	Dec-12	Dec-13	Dec-14	Dec-15
Industry and Handicraft	16.20	18.21	20.47	24.16
Construction	17.58	20.55	19.58	17.10
Materials and technical Supplies	3.83	4.58	3.09	2.59
Agriculture and Forestry	11.71	10.30	9.91	9.17
Commerce	22.34	20.68	20.13	17.77
Transportation	3.72	3.60	3.32	2.36
Services	15.31	11.71	11.08	10.25
Other sectors	9.30	10.37	12.42	16.60
Total	100.00	100.00	100.00	100.00

Source: Bank of the Lao PDR/Monetary Policy Department