

# CHAPTER 1

## Introduction

### 1.1 Principle and Rationale Backgrounds

For all nations, infrastructure development is an essential move to generate economic activities. For a nation's economic development, separately from the main resources such as physical resources and human resources, technological improvement, natural resources efficient institution, and infrastructure development are essential. Therefore, infrastructure provision may be regarded as “Hardware” of a nation's economic development. Infrastructure facilitates and integrates the economic activities. According to Asian Development Bank, infrastructure is divided into two parts as “soft” and “hard” infrastructure<sup>1</sup>. “Soft” infrastructure includes education and health. “Hard” infrastructure includes power, transport, telecommunication, sanitation, etc. Infrastructure is solitary of the mainstays of economic transformation. Maintainable economic growth often arises in an environment where there is an important infrastructure, and there is proof that it decreases inequality in a society (Cotonou & Benin, 2013).

A main foundation of economic growth is the capital accumulation. Infrastructure is the one form of capital. Infrastructure plays a vital role in attaining the main development targets of developing countries, such as industrialization, urbanization, export promotion, equitable income distribution, and sustainable economic development. Furthermore, the availability of an efficient infrastructure network can stimulate new investment in other sectors. On the other hand, either a shortage or an over-expansion of infrastructure in certain areas can raise costs and create incentives to refrain from

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<sup>1</sup> Asian Development Bank, Economic and Research Department, 2014 Myanmar Unlocking The Potential

investing. However, good infrastructure can reduce the production costs and can raise productivity but it has to expand fast enough to accommodate growth.

Infrastructure means the vital facilities and systems portion a country, city, or area, including the services and facilities obligatory for its economy to function. Infrastructure has different definitions in different dictionaries and usages. There are many types of infrastructure. The fundamental services and facilities are crucial for a country or institution. The foundation of development is the form of physical structures. For the function of organization or society, fundamental systems and services are needed. For the supporting of day- to- day economic actions, need the facilities and in a services. Economic development is based on the basic foundations. The basic public workings in a country include transportation, sanitation, schools, roads, hospitals, stations, and communication systems in a community but infrastructure is classified to the usefulness of the accordance with them. Stations, roads, dams, transportation, bridges, canals, and irrigations, etc., are called physical infrastructure. On the other hand, universities, libraries, schools, hospitals and recreation centres are called infrastructure of human capital, and infrastructure of public utilities includes power, sanitation, communication, water distribution, and solid waste collection.

According to the World Development Report (1994), similar to the ADB, infrastructure is divided into two parts<sup>2</sup>. They are called economic infrastructure and social infrastructure. Social infrastructure includes hospitals, libraries, recreation centres, universities, and parks. Economic infrastructure also includes public works such as roads, dams and canal work for irrigation and drainage, and public utilities such as sanitation, power, telecommunication, ports, airports, water supply, etc. This investigation is shown with the framework of this definition. The word economic development used in this study refers to an increase in GDP, more employment opportunities saved and protected environment, admission to better health and education, and reduction in inequality. Economic growth is the necessary condition for effective poverty alleviation as it can advance the standard of living of the population and promote infrastructure development. Firstly, economic growth increases the average income of households. The improvement of social and physical infrastructure through increase in state investment for education,

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<sup>2</sup> World Bank, World Development Report,1994: Infrastructure for Development

health care and infrastructure development can lead to an indirect effect (not connected to income) on poverty reduction.

There are two positive outcomes of infrastructure on economic growth. First of all, the productivity of physical and human capital should be increased by the availability of infrastructure. For example, improving health and education sectors make easy access to both better and information and can get more capable factor combination for production. Secondly, infrastructure also serves as a direct factor input, e.g., roads are used as a necessary input in commodity market for trading from one place to another. Nevertheless, in the short run, an increase in the public capital stock in infrastructure may have an adverse effect on economic activity to the extent that it displaces (or crowds out) private investment. Furthermore, high quality infrastructure leads to incentives for new investment by decreasing costs of production. The adequate infrastructure supports determine one country's success and the other country is failure in diversifying production growth, poverty elimination, or improving environmental conditions. Good infrastructure can raise productivity and can lower production costs but it has to expand fast enough to accommodate growth. The precise linkages between infrastructure and development are still open to debate. Nonetheless, infrastructure capacity grows step by step with economic output. That is a 1 % increase in the stock of infrastructure is associated with a 1 % increase in gross domestic product (GDP) across all countries. And as countries develop, infrastructure must adapt to support changing patterns of demand as the shares of power, roads, and telecommunications in the total stock of infrastructure increase relative to those of such basic services as water and irrigation.

In Myanmar, small infrastructure investment prolonged over some decades has led to a weakening of capital stock and basic infrastructure. Public infrastructure of Myanmar investments are needed in human asset and social development particularly in health and education infrastructure and transport and communication infrastructure. Human capital development should be considered part of the basis for the country's long-term growth. Infrastructure investment is an essential mechanism employed by the governments of developing countries over the past forty years to affect economic development (Krueger 1992). The government in most developing countries does not have the necessary organizations to instrument many fiscal policies to enable economic growth and affect

income distribution; infrastructure policy is often seen as an effective method to achieve those ends (van de Walle and Nead, 1995; Israel, 1992; Broadway and Marchand, 1995). This one is widely recognized that an adequate source of infrastructure facilities is an essential component for production and growth. Infrastructure is a modest vital service that has to be put in place to support development. Socio-economic development can be facilitated and enhanced by social and economic infrastructures. If these services and facilities are not in habitation, development willpower be very difficult and actually can be likened to a very rare commodity that can only be safe at a very great price and cost. In addition, the availability of an effective infrastructure system can encourage new investment in more sectors.

On the other hand, the absence of infrastructure or over-expansion in certain areas can increase costs and make disincentives to invest. The key message of the WB Report (1994) stayed that infrastructure can provide the main benefit in economic growth, poverty alleviation, and environmental sustainability-but only when it affords services that respond to active demand and does so efficiently.

Before 1988, Myanmar's economy needed infrastructure, and infrastructure development plans were far behind schedule owing to insurgency and uncertain conditions. Meanwhile in 1989, Myanmar government invested in various sectors in order to establish Myanmar as a peaceful, modern, and developed nation. The administration of Myanmar trusts that the geographical and communication aspects show an important role in the development of physical and economic relationships between regions. So, the government has distributed furthestmost of its budget for infrastructure progress.

Myanmar has recognized the prominence of infrastructure and has made substantial progress in developing transportation, communication, and energy infrastructure even though the heavy capital investments are needed to develop since the economy of the opened up in 1989. The development of infrastructure was carried out by the national economic growth to achieve a balanced and equal growth between regions and to achieve the solidarity of the national races. Highways known as Union Highways and National Highways have been the rivers; Ayeyarwaddy, Chindwin, and Thanlwin are implementation tasks. They are also careful as part of the boundary area development to

the gap between the regions to build more confidence and accepting among the nationalities (Kyu, 2008).

According to the WBR (2013), the growth of real GDP in Myanmar is estimated at 6.5 % in 2012-2013 from 5.9 % in 2011-2012. But this event was caused by the gas production, construction, services, as well as foreign direct investment and export of commodities. According to an ADB report (2014), transport infrastructure of Myanmar gaps behind most of its peers in the state. Similarly, the power sector has the lowest rate in Myanmar compared with Southeast Asian. Needs for infrastructure investment of Myanmar is estimated to be around US \$ 22 billion for the 2010-2020 period or roughly US \$ 1.9 billion per year. Investment is a major driver of economic growth. However, Myanmar's education and health structure has suffered from long underinvestment. The investment of public was less than 1% of GDP before 2011. This situation is very low compared with ASEAN countries. However, education and health reform was started in early 2012. Therefore, the government of Myanmar started to upgrade the health and education sectors. Health outlay upturned to 1.5% of GDP in 2012 from 0.2% in 2011, while the spending of education raised to 1.6% of GDP in 2012 from compared with 0.8% in 2011.

As the government of Myanmar has built the amount of infrastructures which form the necessary foundation for the economic development of nation, there is a need for analysing the special effects of bulk investment in infrastructure provision, examining the strengths and weaknesses of these investments, and expressing appropriate policies and reforms to achieve of international standards. The objective of the study is to determine the relative importance of infrastructure in enabling Myanmar to reach its potential output level. Additionally, this study examines whether the infrastructure can be substituted for capital and labour in the production process.

**Table 1.1** Infrastructure Investment in Myanmar (1988-1989 to 2012-2013)

(in current prices) (Kyats in Millions)

Year	Total Investment	Total Infrastructure Investment
1988-1989	92528	17634
1989-1990	118280	25820
1990-1991	223180	51444
1991-1992	270350	61347
1992-1993	311840	61894
1993-1994	374660	61490
1994-1995	545960	107467
1995-1996	825820	148966
1996-1997	1183130	247610
1997-1998	1502400	381739
1998-1999	2069120	326917
1999-2000	2554080	393755
2000-2001	3009810	387466
2001-2002	4131820	692157
2002-2003	5517500	1130389
2003-2004	8034540	2010001
2004-2005	10690210	1110581
2005-2006	15637540	1519757

**Table1.1**Infrastructure Investment in Myanmar (1988-1989 to 2012-2013)

(in current prices) (Kyats in Millions) (Continued)

Year	Total Investment	Total Infrastructure Investment
2006-2007	22824210	1943751
2007-2008	33707240	2794821
2008-2009	45998450	3410784
2009-2010	64368290	3945850
2010-2011	91150740	5066279
2011-2012	135161600	6077580
2012-2013	153163710	16916314

Source: Ministry of National Planning and Economic Development, Myanmar

Note- Infrastructure = power+ transportation +communication +construction +health+ education

Table1.1 shows total investment and total infrastructure investment from 1988-1989 to 2012-2013. In this research, the core social infrastructure means education and health, and then another core economic infrastructure is power, construction, and transportation and communication. Meanwhile in 1989, Myanmar government was trying to realize all around development of the nation under a market oriented economic system in order to establish a new modern and developed nation. Vast investment in infrastructure is one of the measures that were used by Myanmar government to achieve economic development of Myanmar.

However, the study targeted to assess the effect of public infrastructure investment on the productivity of Myanmar's economy differentiating between two key consecutive periods. Table 1.2 shows the infrastructure investment, capital stocks, employment, real GDP, and GDP of Myanmar during the period of 1988-1989 to 2012-2013. According to the table 1.2, it could be seen that in the fiscal year<sup>3</sup> (FY) 1997-98, employment has raised

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<sup>3</sup> Myanmar's fiscal year ( FY ) start from 1<sup>st</sup> April to end 31 March.

to 18359 persons compared to 16036 persons in 1988-1989 fiscal year. During this period, RGDP had steadily grown from 47141 Million (Kyats) in 1988-1989 to 75123 Million (Kyats) in 1997-1998. Then, infrastructure investment rose from 132801.3 Million (Kyats) in 1988-1989 to 182456.1 Million (Kyats) in 1997-1998. When, employment rose to 28571 persons in 2012-2013 from 19069 persons in 1998-1999, at the same time, infrastructure investment rose to 280972.2 Million (Kyats) from 194539.9 Million (Kyats). Meanwhile, RGDP increased 464915.51 Million (Kyats) 2012-2013 from 79460 Million (Kyats) in 1998-1999.

**Table 1.2** Real GDP, Employment, Infrastructure Stock and Capital Stock during the period 1988-1989 to 2012-2013 (Millions)

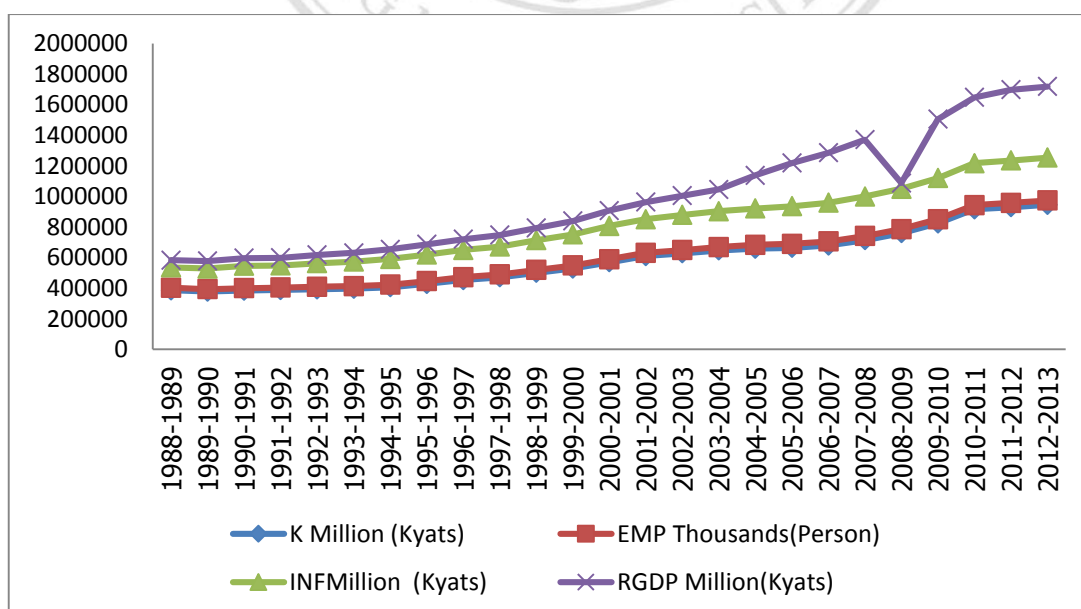
Year	Real GDP (Kyats)	INF stock (Kyats)	EMP (person)	K stock (Kyats)
1988-1989	47141	132801.3	16036	386354.6
1989-1990	48883.1	135975.6	15221	377565.3
1990-1991	50259	147011.63	15737	383601.8
1991-1992	49933.3	144928.13	16007	387576.1
1992-1993	54756.6	154101	16469	392437.3
1993-1994	58063.9	159971.6	16820	396371.3
1994-1995	62406.1	168527.9	17230	405659.9
1995-1996	66741.6	174260.6	17587	428148.8
1996-1997	71042	178101.6	17964	453365.8
1997-1998	75123	182456.1	18359	471219.8
1998-1999	79460	194539.9	19069	499998
1999-2000	88157	203361.1	19425	528325.5
2000-2001	100274.8	217935	19781	569116
2001-2002	111650	220439.5	20137	610372.4
2002-2003	125076.5	231085.4	20493	628162.6



**Table 1.2** Real GDP, Employment, Infrastructure Stock and Capital Stock during the period 1988-1989 to 2012-2013 (Millions) (Continued)

Year	Real GDP (Kyats)	INF stock (Kyats)	EMP (person)	K stock (Kyats)
2003-2004	142387.7	234661.1	21522	646844.9
2004-2005	216758.47	237342.8	25829	657932
2005-2006	283150.86	246474.4	26132	663063.4
2006-2007	325915.37	253597	26435	679281.9
2007-2008	371973.94	259152.6	26720	713812.8
2008-2009	37694.11	263486	27054	759416.7
2009-2010	384784.44	269500.9	27373	823498.4
2010-2011	430391.31	274252.7	27740	915780.5
2011-2012	463078.88	278006.6	28163	929256.1
2012-2013	464915.51	280972.2	28571	944787.7

Source: Ministry of National Planning and Economic Development issued of the review of the Financial, Economic and Social Conditions



Source: Ministry of National Planning and Economic Development

**Figure 1.1** RGDP, infrastructure Stock, employment and capital stock during 1988-1989 to 2012-2013

Figure 1.1 shows some propositions for the relationship between GDP and infrastructure stock, employment, and Myanmar's capital stock. Now, it can be seen that both GDP and infrastructure investment has nearly the same trend. In fact, still from 2007-2008, both GDP and infrastructure investment showed a slow growth trend. Nevertheless, FY 2008-2009 GDP fell and infrastructure investment showed a moderate growth trend.

Cyclone Nargis is believed to be the worst recorded natural disaster in Myanmar's history. Cyclone Nargis blew heavily in 2008-2009, and because of Cyclone Nargis there were lots of damages such as building, housing, and business. As a result, real GDP fell. In this figure, it can be discussed that to some extent, there is a connection between infrastructure investment and the economic growth of Myanmar.

This study examines the relationship between infrastructure investment and economic growth of Myanmar. Consequently, in order to investigate the dynamic relationship between infrastructure investment and economic growth of Myanmar during the period 1988-1989 to 2012-2013, the study of method used for estimation is based on Autoregressive Distributed Lag (ARDL) Model. The entire methodology portion consists of ADF unit root tests, ECM estimation, and bound test in association with ARDL model. The case of Myanmar, most of the studies have been prepared only in descriptive statistics and qualitative analysis. This paper can be said to be the first to study the relationship between infrastructure investment and economic growth with numerical analysis. Descriptive analysis of the infrastructure investment of Myanmar is also done as part of the empirical investigation.

## **1.2 Investment Policy in Infrastructure Sector**

In Myanmar, the government is now planning to establish medium and long term plans for basic infrastructure sectors and suitable regulatory framework for growing investment. Economic growth and development can be raised if the improvement of infrastructure investment. However, the total amount of infrastructure investment needs to be raised substantially. In the *Framework for Economic and Social Reforms 2012*, numerous laws cover enterprises and investment in Myanmar, many of them seeing back to colonial times. Myanmar is also the only country in the ASEAN region that still has isolated law's governing foreign investment. All other ASEAN countries have adopted

whole investment legislation regulating both domestic and foreign investment under the same general rules. Lack of modern infrastructure is a major challenge to economic development and impediment to the country's competitiveness. Government investment levels in social infrastructure and services are low compared to other ASEAN countries. The *Myanmar Citizens Investment Law* was enacted in 1994 to allow local Myanmar investors to benefit from similar incentives to those offered to foreign investors under the 1988 *Foreign Investment Law* (FIL). The new *Foreign Investment Law* (FIL) No. 21/2012, which repealed the 1988 *Foreign Investment Law*, was agreed by President U Thein Sein in November 2012 after months of debate between the government and parliament. For national development, education and health are needed as the main priorities of the ratio of expenditure to GDP which is low in comparison with other ASEAN countries. Myanmar is increasingly succeeding toward a modern, democratic, and developed nation that meets the aspirations of its entire people for a better life. The *Myanmar Citizens Investment Law* was enacted in 1994 to allow local Myanmar investors to benefit from similar incentives to those offered to foreign investors under the 1988 FIL. The government of Myanmar has reportedly declared its intention to unify the *Foreign Investment Law* and the *Myanmar Citizens Investment Law* before the arrival of the ASEAN Economic Community by 2015 (WEF 2013). They are as the following: Contract Act (1872), Specific Relief Act (1877), Transfer of Property Act (1882), Myanmar Companies Act (1914), Sale of Goods Act (1930), Special Company Act (1950), State-owned Economic Enterprises Law (1989), Myanmar Citizens Investment Law (1994), Special Economic Zones Law (2011); Dawei Economic Zone Law (2011), and Foreign Investment Law (2012). The FIL and its notifications also set out the various responsibilities of the Myanmar Investment Commission (MIC), which is in charge of assessing business proposals, setting requirements and conditions for investment and interpreting and overseeing the implementation of the FIL and its rules. For investments in restricted sectors, the MIC must obtain the opinion of the relevant local population or civil society, regional or state government, and Nay Pyi Taw Council, depending on the location of the investment. Investment promotion and acceleration depends by and large on the quality of the investment-related policies and the overall investment climate. Any investment promotion effort will only be effective with the appropriate policies to

improve the overall investment climate. Promotion in isolation will not achieve any sustainable results for the economy.

### **1.3 Purpose of the Study**

The general objective of the study was to investigate the analysis of the LR and SR relationship among Myanmar economy and infrastructural-social investment. The objectives of this research are as follows:

(1) To find out the relationship between economic growth and increase infrastructure investment with addition of some other macroeconomic variables such as employment and capital stock.

(2) To calculate empirically LR and SR effect of infrastructure investment on Myanmar economy.

### **1.4 Advantage of Study**

One of the main advantages of this study was the use of econometric model for the case of Myanmar. As mentioned above, most of the studies for Myanmar infrastructure investment have been done only with the qualitative approach. Thus, the use of econometric model in this study can be regarded as the methodological advantage of this study: the usage of unit root test, ARDL approach to co-integration test, and then ECM estimation of ARDL model. Among then, some diagnostic tests for all models were carried out for Normality and Heteroskedasticity.

The study of co-integration and infrastructure investment for Myanmar will be helpful for managing the country's decision making process. Descriptive analysis will also help to understand the general pattern and trend of Myanmar infrastructure investment.

### **1.5 Scope of the Study**

This research studies the period of 1988-1989 to 2012-2013 of Myanmar and examines the SR and LR connection of infrastructure investment and Myanmar economy. In this research, most of the data used are secondary data. The variables used in this research are GDP, employment, capital stock and infrastructure investment. Based on the convenience of data and regarding the methodology section, yearly data was collected

from 1988-1989 to 2012-2013. The data was collected from Central Statistical Organization (CSO), Asian Development Bank, World Bank and the Financial, Economic and Social Conditions published by Ministry of National Planning and Economic Development for various issued.

### **1.6 Organization of the Study**

This research paper is structured into five chapters. The Introduction is in Chapter 1, which includes principle and rationale background; investment policy in infrastructure sector, the study of purpose; the advantage of study; scope of study; and organization of the study. Chapter 2 presents Theory and Literature Reviews. Chapter 3 discusses about the Methodology of the whole study. Chapter 4 deals with the Empirical results of the methodology. And finally, Chapter 5 is the Conclusion.



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