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Thesis for the Master Degree of Economics

THE IMPACT OF FOREIGN DIRECT INVESTMENT ON
MYANMAR ECONOMY

외국인 직접투자가 미얀마 경제에 미치는 영향

by

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February 2017

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THE ANALYSIS OF FOREIGN DIRECT INVESTMENT UPON MYANMAR ECONOMY

미얀마에 대한 외국인 직접투자 분석

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Abstract

This thesis is to study the contribution of foreign direct investment on Myanmar economy. This paper highlights the implementation of the foreign direct investment in Myanmar economy during the period to 2015.

The result shows that the level of FDI is still low in order to promote economic growth for Myanmar. Some other factors as the resources and employment which can promote to FDI. Therefore, the Myanmar government has to play the key role of employment promotion to attract investments from abroad. Regional integration has become prominent aiming to be the development region. This is because in recent literatures have been drawn to the impact of FDI for the host economies by increasing the volume of investments and / or its efficiency.

This thesis shows that FDI in Myanmar has less discouraged the economic growth of Myanmar over the study period. The possible reason could be its own nature of FDI, the situation of host country economy and the external factors.

List of Abbreviations

ASEAN	The association of south east asian nations
BOP	Balance of payment
CMP	Cutting, milling and packing
DLGDP	The first difference of GDP
EDCF	Economic development cooperation fund
FDI	Foreign direct investment
FLC	Foreign investment commission
FPE	Final prediction error
GATT	General agreement on tariff and trade
GDP	Gross domestic products
GSP	Generalized system of preference
IIA	International investment agreement
IIP	International investment position
ILO	International labour organization
JV	Joint venture
LDC	Least developing country
LGDP	Log data of GDP
MIC	Myanmar investment commission
MICL	Myanmar citizen investment law
MICA	Myanmar investment and company administration
MNCs	Multinational corporations
MNPED	Ministry of national planning and economic development
NAM	Non-alliance movement
NEM	Non equity modes
ODA	Official development assistance
OECD	Organization for economic cooperation and development
PSC	Production sharing contract
SLORC	State law and order restoration council
SEZ	Special economic zone
UNCTAD	United nations conference on trade and development
WIR	World investment report

CHAPTER I Introduction

1.1 Research Objectives

Foreign direct investment in Myanmar is rapidly increasing in the recent years and Myanmar. Myanmar got the attention by foreign firms to do business because of incentives which is given to the foreign firms by Myanmar government. This study will find the economic growth of Myanmar because of foreign direct investment. The effects of international or regional investment agreements on an economy are depending on the host and home country. Foreign direct investment provides the development of a nation, standard of living. All of these facts are the important role of economy's development. One of the potential important sources also need the capital and foreign direct investment. So, this thesis studies on foreign direct investment in Myanmar's economy concerning with the current policy and status of foreign direct investment in Myanmar.

The scope of the study will be based on some economic indicators of Myanmar over period of 2001 to 2015. This thesis tries to examine the policies and strategies for attracting FDI comparing with the other countries experience. This thesis is organized into five chapters. The introduction is expressed in chapter I and about the foreign direct investment in the world economy is explained in chapter II. Foreign direct investment environment in Myanmar is in chapter III and about the analysis on foreign direct investment in Myanmar is expressed in Chapter IV. Finally, findings and suggestions are presented in Chapter V. All developing countries which are abundant in natural resources can be less benefited from their resources than the developed investing countries. My thesis also examined the trends in the relationship between foreign direct

investment and economic development of the countries for the developing country. The data and sources of my thesis are written from the ministry of planning and investment of Myanmar, foreign direct investment agency of Myanmar, central statistics office and relevant web sites.

1.2 Background

Myanmar is located as the second largest country in mainland of southeast asia in geographic area after Indonesia. In the west of Myanmar, it is bordered by Bangladesh, India and Lao and thailand is in the east and southeast. China is in the north and northwest of Myanmar. The population was 51,486,253 million in May 2015 and the total area is about 677,000 square kilometer. Being Myanmar is formed at the tropical country zone, the climate condition is favourable to the agriculture and farming. Most of the country regions are the agriculture lands. The main river is called Ayeyawaddy is running with the facilities trade and transport for the country.

Myanmar has rich natural resources and potential human resources. The government diversified spheres for equitable development of all parts of the nation such as building infrastructures and reducing the development gap between the regions. The government intends to improve the living standards of Myanmar citizens with the varieties of the development projects such as the border area and national races development project. These projects aim to the political, economic, education, health, and social sectors.

Myanmar has transformed to the market oriented economy as the central economy plan. It could effort to change the form of agricultural economy predominantly to the sector of industrial economy around the country since 1989. The economy of Myanmar was managed by the plans

of formulating and implementing with the social objectives and political economic. Myanmar economy consists of fourteen sub-sectors under three main economic activities such as agricultural activities, industrial activities and several kinds of services activities. Agricultural sector includes agricultural, livestock, fishery and forestry. Industrial sector consist of energy, mining, manufacturing, electric power and construction. The services sector including transport, communication, financial institutions, social and administrative service, rental and other services supports to the facility and utilities of public and private sector. Trade sector is also included one of the 12 sectors of Myanmar economy. Myanmar economy has changed slightly. So, it is necessary to study how Myanmar can achieve the economic growth and how to make the structural changes in the future. The regional integration has been promoted to get the higher development of the region as the national investment. Theoretically, the neoclassical growth model explains that FDI can support the facilitates and efficiency on the economic growth by generating technological diffusion. According to Todaro (2009),¹⁾ there is credibility in the developing countries that it takes the saving and investment gap, the foreign exchange opportunities, the several investment knowledges, managerial skills for investment, technological diffusions and offering the worldwide contacts.

The Republic of the Union of Myanmar follows some attractions of other developing countries to be more developed for foreign direct investment. That can provide the knowledges, skills, organizational and managerial practices for the growth of local and foreign market. These are leading to an increasing inflow of foreign direct investment for Myanmar economy.

1) Todaro, Michael P and Stephen C Smith (2009), "Economic development" (Ten edition), pearson education limited, USA.

CHAPTER II Concepts and Function of FDI

2.1 Concept of Foreign Direct Investment

Foreign direct investment means that the nations from one country establish the economic enterprises within the jurisdiction of other countries and an expansion of the existing business of another nation's jurisdiction.²⁾ Since 19th century, foreign direct investment had be a major factor for the world economy. As a result of world war, an explosion of foreign direct investment produced the liberalization, market orientation and technology innovation within the of 20th century. Foreign direct investment include in the multinational network of the investing company.³⁾ It can stand as a component of a countries' financial account into domestic economy and it is a way of the filling gaps as the domestic which are the saving foreign exchange, human capital skills and the desired level of the resources to achieve for the country development targets.

Foreign direct investment is generally useful for the host countries.⁴⁾ Both countries of host and investing countries attain the political, social and economic advantages from foreign direct investment. Most of the developed countries care and notice the flow of foreign direct investment, because it can reflect upon the country's economy. Therefore, a lot of developed countries want to control the economy of their countries.

Today, foreign direct investment was as a driving force of economy and it led to the economy growth and development. The determinants of

2) Gilpin R. (1987) "The political economy of international relation, Princeton University

3) Todaro, Michael P and Stephen C Smith (2009), "Economic development" (Ten edition), pearson education limited, USA.

4) Maitena D. (2003) "The Definition of FDI:a methodological note", Spain

foreign direct investment which induce the economic growth have also changed over time. The policies barriers can also help to get the good economic fundamentals as the market growth rate, quality, appropriate skills, infrastructure and local technological capabilities that are to trade and investment. That may affect the flows of foreign direct investment into other countries for a longtime. So, the global productivity process, economic skills, the good infrastructure and the local technological capabilities are the attractions of foreign direct investment. Most of the governments in the world have liberalized their foreign direct investment regimes. Over the past years ago, Myanmar government has noticed that foreign direct investment contributes the economic development with the productivity, providing technologies and capital. Therefore, Myanmar government tries to increase the foreign direct investment and the government established the investment policy reforms.⁵⁾

The types of foreign direct investment the three categories such as market seeking foreign direct investment efficiency, the seeking of foreign direct investment and the asset-seeking of foreign direct investment. And the type of foreign direct investment and general specific policies are covering on the investment, trade, innovation and human resources of the country. These are required and crucial in affecting upon the link between foreign direct investment and local economy development. Although the local economy got the technology and capital from foreign direct investment, it cannot be developed automatically. The main purpose of foreign direct investment is to have the ownership of the enterprises and controlling the operations of the business in the investing country, because foreign direct investment can be categorized by the functions of investment. These investment functions are the export investment, the market development investment and the government initiated investment.⁶⁾

5) Gilpin R. (1987) "The political economy of international relation, Princeton University

6) Joseph I. H Tan (1995), "the role of FDI in the development of Asian Transitional Economies", Malaysia.

Governments of developed countries encourage to invest in abroad in order to remain competitive globally and it is resulting from globalization. Many developing countries try to enhance the capacity and attractiveness of foreign direct investment to make home economy strong as well as to achieve ability through economic liberalization. On the other side, foreign direct investment in developed countries has high economic growth, high saving and cost of production. These are because of high tax wages and land cost.⁷⁾ Due to the cheap labor and raw materials, the production in the host countries can yield greater than the benefit. The destination sectors of foreign direct investment are varied and it has evolved from the primary and manufacturing to cover the banking and other services sectors. The world of foreign direct investment flows are (a) Primary Sector (b) Manufacturing Sector and (c) Services Sectors. Among these sectors, the share of FDI is directed to the services sector because it continued to increase both developed and developing countries. However, foreign direct investment is increasingly market seeking rather than efficiency seeking.⁸⁾

Many developing countries are depending on the foreign investment. All country deal with other nations politically, economically and socially in the age of glottalization. A number of economic bloc are being formulated for aiming the development or achieving the development goal.⁹⁾ The accumulations stock of foreign investment also can help as an engine of income growth economy and job opportunities. Foreign direct investment has positive effects upon educational attainment. For the young people, the expanding jobs and opportunities are the essential things to get an improving societies and living standard of the country.

7) Todaro, Michael P and Stephen C Smith (2009), "Economic development" (Ten edition), pearson education limited, USA.

8) Joseph I. H Tan (1995), "the role of FDI in the development of Asian Transitional Economies", Malaysia.

9) UNCTAD (1997), UN publication , "Survey of best practices to investment promotion."

In the era of globalization and rationalization, foreign investment was driven the development strategy which is necessary for developing countries to utilize resources (both natural resources and human) effectively and efficiently. The foreign capital promote the capital and technology intensives and it expands the export from the primary commodities. The most common reasons concern with the foreign ownership which were related to the national security. As an example, the United States and the Russian Federation adopted the stricter regulation concerning with the foreign direct investment projects for their national security.¹⁰⁾

Foreign direct investment flows by region and flows of ASEAN countries in 2011 to 2015 is shown in table (2.1) and table (2.2). According to the table (2.1), world's outflows of foreign direct investment were more than inflows of world's foreign direct investment.

Table 2.1: FDI flows by region and economy (2011-2015)

Region and Economy	FDI Inflows					FDI Outflows				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
World	1567	1511	1427	1277	1762	1558	1309	1311	1419	1474
Developed Economies	817	787	680	522	963	1128	918	826	801	1065
Developing Economies	670	659	662	699	765	374	358	409	446	378
ASEAN Economies	960	116	129	125	126	62	55	79	75	67

Source : World Investment report 2016, (US\$ billion)

ASEAN regional foreign direct investment inflows were US\$ 125,731 million in 2015 but it was larger than 2011 ASEAN inflows.

10) Joseph I. H Tan, (1995) "The role of FDI in the development of Asia Transitional Economies", Malaysia.

Developed regional foreign direct investment outflows were US\$ 377,938 million and more than 70% of the world's foreign direct investment outflows, over 25% of the world's foreign direct investment outflows in developing economies and 4% in ASEAN economies because developed country has the good economic scale and transparent investment climate.

According to the table (2.2), in ASEAN regional foreign direct investment inflows were US\$ 95939 million in 2011 then increased to US\$ 125731 million in 2015. Foreign direct investment inflow is highest in Singapore in ASEAN because it has the good infrastructure and investment climate.

Table 2.2: FDI flows of ASEAN economies (2011–2015)

Region and Economy	FDI Inflows					FDI Outflows				
	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Burundi	691	865	776	568	173	71	283	859	382	508
Cambodia	1,372	1,835	1,872	1,720	1,701	29	36	46	43	47
Indonesia	19,241	19,138	18,817	21,866	15,508	7,713	5,422	6,647	7,077	6,250
Malaysia	12,198	9,239	12,115	10,877	11,121	15,249	17,143	14,107	16,369	9,899
Myanmar	1,118	497	584	946	2,824	-	-	-	-	-
Philippines	1,852	2,449	2,430	6,813	5,234	339	1,692	3,647	6,754	5,602
Singapore	48,329	57,150	66,067	68,496	65,262	31,459	18,341	39,592	39,131	35,485
Thailand	3,271	16,517	16,652	3,537	10,845	6,258	10,597	11,934	4,409	7,776
Timor-Leste	47	39	50	49	43	-33	13	13	13	13
Vietnam	7,519	8,368	8,900	9,200	11,800	950	1,200	1,956	1,150	1,100
ASEAN	95,939	116,391	128,690	124,793	125,731	62,035	54,727	78,802	75,330	66,681

Source : World Investment Report 2016, (US\$ million)

ASEAN regional foreign direct investment outflows were US\$ 62035 million in 2011 and US\$ 66681 million in 2015, therefore, US\$ 4646 million is increased between of 2011 and 2015. According to this table, the year 2013 is the best period of ASEAN investment climate between 2011 to 2015.¹¹⁾

Table 2.3 Yearly distribution of FDI inflows in Myanmar (1997-2015)

Fiscal Year	Enterprises / Projects	Proved Amount (US\$ million)
1997-1998	56	1,012.92
1998-1999	10	54.4
1999-2000	14	58.15
2000-2001	28	217.69
2001-2002	7	19.00
2002-2003	9	86.95
2003-2004	8	91.17
2004-2005	15	158.28
2005-2006	5	6,065.68
2006-2007	12	752.7
2007-2008	7	172.72
2008-2009	5	985.00
2009-2010	7	314.85
2010-2011	12	15,903.31
2011-2012	13	4,644.46
2012-2013	94	1,419.47
2013-2014	123	4,107.05
2014-2015	211	8,010.53

11) Gilpin R, (1987), The political economy of international relation, Princeton University

Source: Directorate of investment and company administration

According to the historical statistics of foreign direct investment, there was discrepancies in inflows of foreign direct investment and stocks of capital between emerging (developing countries) and industrial (developed countries). Emerging countries have much larger discrepancies for stocks of capital particularly than industrial one.

2.2 Myanmar foreign direct investment law and rules

After 26 years of the socialist government, the foreign investment policy is a key of component and innovating to make the new form economy for the national development. Until the Asian economic crisis, Myanmar has attracted upon FDI successfully which is moving an stagnated economy to increase and to flow economy moderately.¹²⁾ Foreign Investment Law was drawn in 1988 in Myanmar and it gave a lots of permissions for the foreign investments and the favorable occasion to foreign companies to take pleasure as the hundred percent ownership. The Myanmar Citizen Investment Law (MCIL) was enacted in 1994 to be an animate investment from the comfortable private area. Therefore, until the middle of 1996, the influx of foreign direct investment surged. Behind 1997 of the crisis of Asian economic, western countries imposed the economical contract to Myanmar.

Myanmar welcomes foreign companies and opens the door of foreign investment. Directorate of investment and company administration in Myanmar were formed under the ministry of national planning and economical development in 1993. The major purpose of directorate Investment and company Administration is relating to the investment

12) UNCTAD (2008), World investment report

substance. Ministry of national planning and economic development in Myanmar gave the permission for business, registering and regulation of finite corporations, hinge risks, working in partnerships and joined and participated in regional of cooperation company, and so on. There're three main policy components. They are;¹³⁾

- (1) The gaping economy for foreign commerce and investment.
- (2) Adoption of market orientation system toward the allocation of resources.
- (3) Enterprising activity and encouragement of secluded investment.

There will have 7 objectives law for The union of Myanmar Foreign Investment. These are;¹⁴⁾

- (1) Regional growth
- (2) An advancement in rank and process of expanding exports,
- (3) Accession of high technology,
- (4) The act of achievement of natural resources,
- (5) Accessible of more favorable employment opportunities
- (6) The act of producing, supporting and services including large capital
- (7) Works' development which saves energy the amount of consumed.

2.3 Foreign Investment by Economic Sectors

Myanmar citizen law was allowed the types of economic activities as the 10 Sectors. These sectors are:¹⁵⁾ power, construction, livestock & fisheries, manufacturing, agriculture, transport, hotel and tourism, mining and the industrial estate. The main sectors of the Myanmar are tourism, agriculture, industries and energy. Most of the FDI which is in Myanmar

13) Directorate of investment and company administration in Myanmar (1993)

14) Directorate of investment and company administration in Myanmar (1993)

15) Directorate of investment and company administration

has been based in a sector of Oil and gas and it is over 14% in hydropower and 7% in mining sector. There is significantly less in tourism or less than 1% in agriculture of FDI. Industrial manufacturing is not still progressed and the government take a run at denationalize with a few industries. The government possessed to rise enough international interest by Foreign investments.

The Mineral industry is opened as a Myanmar's major industrial sector to the foreign contracted investment in 1988 and it was US\$1.4 billion till the end of 2009. In this mineral sectors, the agricultural processing, the fertilizer, the garments, the wood products, pharmaceuticals, oil and natural gas, jade and gems, the cement and materials for the construction are included.¹⁶⁾

In Myanmar's tourism sector, hotels and travel initiatives for the foreigners invested over \$700 million. Foreign firms invested about \$690.88 million in 22 hotel projects and \$39.2 million in joint-venture developments of four hotels in Myanmar according to the account of the government statistics from July .For this year, the Myanmar tourism sector is hoped to earn more than \$1 billion.¹⁷⁾

16) Foreign Direct Investment (FDI): Case research in Myanmar "The free investopedia"

17) http://www.economywatch.com/world_economy/myanmar/industry-sector-industries.html

CHAPTER III ANALYSIS ON FOREIGN DIRECT INVESTMENT IN MYANMAR

3.1 Foreign Direct Investment Flow by Countries

Seven ASEAN countries were investing in Myanmar up to 2010-2011. Among these countries, Singapore, China, Thailand and Malaysia are leading as the important investors in Myanmar. Myanmar offers significant indigenous resources and land area, labour costs access to numerous regional markets and a range of investment incentives. The lush green forests, unspoiled beaches and the natural environments of Myanmar are the wide variety of attraction for tourists. So, most of the foreign investors entered in the part of production of oil and gas, manufacturing, mining and hotel and tourism fields.¹⁸⁾

Under the Foreign Investment Law, 31 countries have already permitted to invest in Myanmar with a total amount of US\$ 36,054.588 million up to 2011 (See, Table 3.1). China is dominated by 32 projects with 9603.1 million dollars, accounting for 26.6 percent of the total, Thailand is second place with 61 projects, 9568.1 million dollars, totally for 26.5 percent of the total investment. Table 3.1. shows, in the top five foreign investors, Hong Kong stands third largest investor with 6308.495 million dollars in 38 projects, followed by Republic of Korea and United Kingdom with 2915.717 million dollars in 47 projects and 2659.954 million dollars in 51 projects. So, over half of Myanmar's foreign investment from Asian Countries is 32007.335 Million dollars.

18) Directorate of investment and company administration, MNPED

Table 3.1: Foreign direct investment flows by countries in 2011
(US \$ in million)

Country	Total Permitted Enterprises		Existing Enterprises		Terminated Enterprises	
	No.	Approved Amount	No.	Approved Amount	No.	Approved Amount
China	32	9,603.168	17	9,540.008	15	56.617
Thailand	61	9,568.093	41	9,186.947	20	23.484
Hong Kong	38	6,308.495	24	6,260.078	14	8.461
Republic of Korea	47	2,915.717	39	2,855.197	8	75.284
UK*	51	2,659.954	36	2,584.004	15	53.817
Singapore	74	1,818.613	51	1,660.094	23	66.711
Malaysia	38	975.097	19	671.402	19	103.665
France	2	469.000	1	499.926	1	18.119
U.S.A	15	243.565			15	318.418
Indonesia	12	241.497	4	23.577	8	19.327
The Netherlands	5	238.835	2	4.335	3	99.200
Japan	22	211.902	14	124.811	8	104.882
India	5	189.000	4	184.500	1	
Philippine	2	146.667	2	146.667		
Russia Federation	2	94.000	2	94.000		
Australia	14	82.080	4	11.874	10	32.610
Austria	2	72.500	1	1.000	1	
Unit. Arab Emirates	1	41.000			1	
Canada	14	39.781	1	0.300	13	39.264
Mauritius	2	30.575	2	30.575		
Panama	1	29.101	1	29.101		
Vietnam	2	23.649	2	23.649		
Germany	2	17.500	1	2.500	1	12.015
Denmark	1	13.370			1	
Cyprus	1	5.250	1	5.250		
Macau	2	4.400			2	3.534
Switzerland	1	3.382			1	6.820
Bangladesh	2	2.957			2	2.957
Israel	1	2.400			1	
Brunei Darussalam	1	2.040	1	2.040		
Sri Lanka	1	1.000			1	1.000
Total	454	36,055	270	30,427	184	1,047

Source : Directorate of Investment and Company Administration

Table 3.2: FDI flows by countries (2000-2015)

	2000	2005	2010	2011	2012	2013	2014	2015
Australia		-	-	-	-	17.7	-	99.8
Austria	-	-	-	-	-	-	-	72.5
Brunei Darussalam	-	-	-	-	1.0	2.3	43.9	49.2
Canada	22.0	0.7	-	-	2.1	-	153.9	195.8
China	29.0	-	8,269.2	4,345.7	231.8	56.9	516.9	14,754.5
France	-	-	-	-	-	5.4	67.3	541.6
Hong Kong	13.2	-	5,798.3	-	84.8	107.1	625.6	7,125.1
India	-	30.6	-	73.0	11.5	26.0	208.9	508.4
Indonesia	-	-	-	-	-	-	-	241.5
Japan	-	-	7.1	4.3	54.1	55.7	85.7	411.7
R.O. Korea	47.2	-	2,676.4	25.6	37.9	81.2	299.6	3,360.0
Luxembourg	-	-	-	-	-	5.2	40.2	45.4
Malaysia	9.8	-	76.8	51.9	4.3	616.1	6.7	1,654.1
Philippines	-	-	-	-	-	-	0.5	147.2
Russia	-	-	-	-	-	-	-	94.0
R.O. Liberia	-	-	-	14.6	-	-	64.6	79.2
Singapore	36.9	-	226.2		418.2	2,340.1	4,297.2	8,819.6
Sweden	-	-	-	-	-	-	14.3	14.3
Switzerland	-	-	-	-	-	-	27.0	30.4
Thailand	25.8	6,034.4	2,146.0	-	1.3	489.1	165.7	10,264.1
UK	30.6	-	799.0	99.8	232.7	156.9	850.8	4,000.1
U.S.A	-	-	-	-	-	-	2.0	245.6
U.A.E	-	-	-	-	-	4.5	1.7	47.2
Viet Nam	-	-	-	18.2	329.4	142.0	175.4	688.6
Total	215	6,065.7	19,999.0	4,634	1,419.5	4,107	7,648	53,490

Source: Planning Department. MNPED (US\$ million)

Table (3.2) shows that China is the largest investor of Myanmar in manufacturing such the oil and gas, textile, foods and other commodity in value amount of 14754.5 US\$ Million. Singapore, Thailand, Japan are also the main investors of Myanmar in the banking sector, construction and other. The Republic of Korea also invested with a large amount in Myanmar's infrastructure, banking construction and textile industries. The UK invested in Myanmar year by year. The US made economic sanction to myanmar and it was opened in 2014 with 2 millions of investment.

The foreign direct investment play an important source of finance in development of Myanmar's economy such as the industrial, infrastructure and technology. These are the investment opportunities in many unexpected sectors of the country. Foreign direct investment were not widely accepted in Myanmar Economy for the whole socialist era due to the self-reliance and it controlled the command economic policies. The government of the Union of Myanmar changed the economic system from the central economic system to a market-oriented one in late 1988. That new system were amended to be compatible with the changing of the Myanmar economic environment.

Table 3.3: Annual growth rate of per capita GDP, consumption & investment

Year	A.g.r. of per-capita GDP	A.g.r. of per-capita consumption	A.g.r. of per-capita investment
2000-2001	11.5	5.5	8.8
2005-2006	11.3	12.3	27.1
2010-2011	8.4	1.5	30.9
2011-2012	4.5	5.0	33.0
2012-2013	6.2	7.0	8.8
2013-2014	7.3	10.9	12.8
2014-2015	7.1	5.1	20.5

Source: Department of Planning (value in percent)

The new system has significantly increased the growth rate of GDP through more consumption and widen investment. Table (3.3) shows the annual growth rate of Per-capita GDP, Per-capita consumption, per-capita investment in Myanmar. According to the table, Myanmar economy was more developed in the era of New Democratic Government.

3.2 Sectoral Distribution of Foreign Direct Investment

The country economic structure has not yet improved significantly comparing with neighboring countries. But the economy was still plagued with unstable investment, trade and banking policies. The comparison of sectoral changes in economy of 1995-1996 to 2010-2011 is shown in table (3.4).

Table 3.4: Sectorial share of GDP in Myanmar

Year	Agriculture		Industry		Services	
	Value	%	Value	%	Value	%
1995-1996	30.0	45.0	10.4	15.6	26.3	39.4
2000-2001	42.9	42.8	17.8	17.7	39.6	39.5
2005-2006	2,340.0	50.0	715.3	15.3	1,619.9	34.7
2006-2007	6,290.3	45.3	2,581.1	18.6	5,022.0	36.1
2007-2008	6,789.9	43.7	3,086.1	19.8	5,683.4	36.5
2008-2009	7,170.2	41.8	3,642.1	21.2	6,342.8	38.0
2009-2010	7,569.8	39.9	4,285.8	22.6	7,114.7	37.5
2010-2011	7,926.6	37.8	5,083.3	24.3	7,936.4	37.9
2011-2012	15,048.3	32.5	14,490.5	31.3	16,769.1	36.2
2012-2013	15,680.3	30.6	16,594.2	32.4	18,984.8	37.0
2013-2014	17,132.9	29.5	18,773.9	32.4	22,105.9	38.1
2014-2015	18,249.9	27.9	22,540.9	34.4	24,646.2	37.7

Source: Planning Department, MNPED, (Kyat in billion)

Industry sector composition has change to 24.3% in 2010-2011 from 15.6% in 1995-1996 and has affected by the economic sanction in 2003 and decreased to 15.3% in 2005-2006. According to the table (3.4), although Myanmar GDP changes from agriculture sector to services sector with small percent, it was still depending on the agriculture sector. Most of the countries achieve their rapid growth and the economic structure through industrialization by using the consistent and reinforced economic policy.

Table 3.5: Gross domestic product (GDP) at current producers' price
by sector of activity (absolute value in 10 million of kyat)

Sector	2000-2001	2005-2006	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Agriculture	124,544	471,847	1,110,840	1,111,304	1,134,962	1,231,608	1,287,282
Livestock & Fishery	20,138	94,106	339,210	375,864	414,122	463,195	523,875
Forestry	1,433	7,682	15,845	17,662	18,947	18,493	13,838
Energy	484	2,008	6,699	224,142	274,583	291,998	401,143
Mining	1,019	6,939	29,943	46,927	41,832	54,765	78,380
Processing & Manufacturing	18,290	157,291	790,049	913,252	1,029,919	1,155,355	1,304,371
Electric Power	344	2,765	42,188	48,145	61,493	69,585	92,496
Construction	4,604	46,166	183,933	216,584	251,590	305,683	377,709
Transportation	143,631	128,305	459,436	551,133	611,272	692,688	750,854
Communication	707	12,912	33,223	40,198	60,580	91,383	122,096
Financial Institutions	264	1,024	3,772	6,532	8,535	11,439	13,579
Social & Admin. Services	3,935	11,260	91,572	98,901	132,608	168,330	202,553
Rental and	3,511	19,653	73,848	88,329	109,565	132,390	153,731

Other Services							
Trade	61,369	266,720	797,116	891,816	975,919	1,114,365	1,221,802
GDP	255,273	1,228,677	3,977,676	4,630,789	5,125,926	5,801,275	6,543,710

Source: Department of Planning

The industrialization can only enhance upon the economic development and employment of a country. Table (3.5) shows that the gross domestic product (GDP) at current Producers' Price by Sector of Activity and Table (3.6) shows the share of gross domestic product (GDP) at current Producers' Price by Sector of Activity.

Table 3.6: Share of gross domestic product (GDP) at current activity

Sector	2000-2001	2005-2006	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Agriculture	48.8	38.4	27.9	24.0	22.1	21.2	19.7
Livestock & Fishery	7.9	7.7	8.5	8.1	8.1	8.0	8.0
Forestry	0.6	0.6	0.4	0.4	0.4	0.3	0.3
Energy	0.2	0.2	0.2	4.8	5.4	5.0	6.1
Mining	0.4	0.6	0.7	1.0	0.8	1.0	1.2
Processing & Manufacturing	7.2	12.8	19.9	19.7	20.1	19.9	19.9
Electric Power	0.1	0.2	1.1	1.1	1.2	1.2	1.2
Construction	1.8	3.7	4.6	4.7	4.9	5.3	5.8
Transportation	5.7	10.4	11.5	11.9	11.9	11.9	11.5
Communication	0.3	1.1	0.8	0.9	1.2	1.6	1.9
Financial Institution	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Social & Admin. Service	1.5	0.9	2.3	2.1	2.6	2.9	3.1
Rental & Other Service	1.4	1.6	1.9	1.9	2.1	2.3	2.3
Trade	24.0	21.7	20.1	19.3	19.0	19.2	18.7

Source: Department of Planning

According to the table (3.5) and (3.6), GDP of Myanmar in 2000-2009 was depending on the sector of agriculture. In 2014-2015, GDP of Myanmar was depending on the manufacturing and trade sector. This data shows the contribution of financial institution with the quite small percent (0.2%) to Myanmar GDP because of the poor financial market and banking system.

Even the neighboring ASEAN countries have changed their economic structure by emphasizing on the industry sector and have achieved their economic growth through high saving and investment rates and also large inflow of FDI. It is shown in table (3.7).

Table 3.7: Comparison of neighboring countries for GDP structure

Countries	Agriculture			Industry			Services		
	2000	2009	2014	2000	2009	2014	2000	2009	2014
Myanmar	42.8	39.9	29.5	17.7	22.6	32.4	39.2	37.5	38.1
Cambodia	38.1	28.4	30	21.7	22.5	27	40.2	42.1	43
Lao	51.7	34.5	28	22.7	23.3	31	25.6	42.2	41
Vietnam	23.4	17.6	18	35.7	41.6	34	41.0	40.8	43
Thailand	9.9	8.8	10	44.5	48	37	45.7	43.2	53

Source: Asian development outlook 2011. (Value in Percent)

According to the table (3.7), Cambodia, Lao, Vietnam and Thailand had been changed their GDP from depending on the agriculture to services sector but Myanmar still had in agriculture sector. During the period of 2009, foreign direct investment flow was still sluggish because of the

external factors of economic and internal factors of investment with unfriendly policy. The government didn't set up the one-stop system for foreign direct investment.¹⁹⁾

Table 3.8: Foreign investment in Myanmar by sectors

Sector	2000	2005	2010	2011	2012	2013	2014	2015
Agriculture	-	20	-	139	-	10	20	243
Livestock & Fishery	13	-	-	-	-	6	96	453
Mining	156	1	1	1,396	20	15	33	2,869
Oil & gas	15	48	35	10,179	248	309	-	17,593
Manufacturing	21	77	-	66	32	401	1,827	5,490
Power	-	-	-	8,219	4,344	364	47	19,325
Transport & communication	119	8	-	-	1	-	1,190	3,183
Hotel & tourism	79	5	-	-	-	300	-	2,158
Real estate	251	28	-	-	-	-	435	2,278
Industrial estate	12	-	-	-	-	-	441	781
Construction	-	21	-	-	-	-	-	-
Others	2	10	-	-	-	15	18	-
Total	668	218	36	199,99	4,645	1,404	4107	58,480

Source: Planning Department, MNPED, Foreign (US\$ million)

Table (3.8) shows that the foreign direct investment in Myanmar by sector yearly. According to this data, foreign direct investment flows mainly into mining, oil& gas power. The foreign direct investment flows into the power sector that is largest in economy about 8219 US \$ US million in 2011 and 19325 US\$ million in 2015 to distribute power. Foreign direct investment flows into mining sector was increased 15 US \$ millions to 10179 US \$

19) Myanmar planning department, MNPED

millions in 2011. And then, the foreign direct investment flows in oil and gas which is reached into 17593 US \$ millions. Although the foreign direct investment in mining sector was increased it was not fully benefitted for Myanmar citizen and the residence in this mining.

According to the Table (3.9), FDI flow in various sector of Myanmar has been permitted with Kyat 36054.6 million up to 2010-2011. Foreign Direct investment in Myanmar has been increasing through this period because power, oil and gas invested by the greatest amount of FDI in some year.

Table 3.9: Foreign investment of permitted enterprise
by sector in 2011 (US\$ in million)

Particulars	Total Permitted Enterprise		Existing Enterprise		Terminated Enterprise	
	No.	Approved Amount	No.	Approved Amount	No.	Incurred Amount
Agriculture	7	173.101	7	173.101		
Livestock & Fisheries	25	324.358	11	76.911	14	9.262
Mining	64	2,794.463	15	2,415.704	49	62.494
Manufacturing	159	1,728.447	99	1,281.049	60	79.561
Power	4	14,529.742	4	14,529.742		
Oil and Gas	104	13,815.375	60	13,192.231	44	817.775
Construction	2	37.767	2	37.767		
Transport & Communication	16	313.272	9	210.042	7	40.230
Hotel and Tourism	45	1,064.811	40	981.349	5	2.400
Real Estate	19	1,056.453	14	827.140	5	34.463
Industrial Estate	3	193.11	3	193.113		
Other Services	6	23.686	6	23.686		
Total	454	36,054.588	270	33,941,835	184	1,046,185

Source: Planning Department, MNPED

The largest investments were in the natural such as oil and gas, mining, fisheries and manufacturing sectors. In Myanmar, most of

investors can get various raw material and cheap labours. Therefore 99 existing enterprises have been reached and invested in manufacturing sector, up to 2011.

Especially agriculture, industry and property development sectors are frozen to accept more Foreign Direct Investment. Property development sectors have been limited to foreign direct investment, allowed investment for services apartment projects operated for foreigners and industrial estate development for foreign investors. In China, the real estate industry has promoted the sound development of the real estate market and accelerated the process of house industrialization. Foreign direct investment in this sector can bring not only abundant funds but it also advanced technology and equipment with forward looking development concept.

Table (3.10) shows the type of enterprises and the flows of the foreign direct investment by these enterprises. Most of foreign firm are invest in the form of company limited, partnership firm, joint venture and company limited. Foreign investor became more interested in Myanmar tourism sector and they made FDI in the form of tourist transportation business, hotel business and tour guide business. According to the Directorate of hotel and tour, investment and company administration and trade, the foreign direct investment inflows as company limited with 43421 US\$ millions, the foreign company and branches are invested 4084 us \$ millions in Myanmar. The foreign direct investment in tour guide business are 5022 US \$ million in 2000. And then, it decreased into 3783 in 2015. However, the joint venture type of business are more appropriate with the foreign investment law in 2012.

Table 3.10: Foreign investment of permitted enterprises by organization

Sector	2000	2005	2010	2011	2012	2013	2014
Exports	1,350	1,591	1,221	2,298	2,470	2,887	2,934
Bus. repres.	74	19	4	86	113	93	58
Company limited	5,194	11,269	20,838	25,430	30,696	37,100	43,421
Partnership firm	1,264	1,270	1,071	1,072	1,072	1,072	1,072
Foreign company and branches	1,159	1,239	1,283	1,309	1,816	2,830	4,084
Joint venture and company limited	56	59	65	66	66	72	76
Joint venture companies limited	77	81	92	102	24	46	83
Other organization	39	41	42	45	57	85	97
Tourist enterprise	601	678	687	801	1,040	1,439	1,670
tourist transport business	423	442	209	174	190	205	363
Hotel business	336	438	555	575	632	741	877
Lodg.-business	178	168	150	165	192	230	271
Tour guide business	5,022	4,157	4,189	3,161	3,520	3,680	3,783

Source: Directorate of hotel and tour., inves. and com. administration, trade (US\$ million)

Table 3.11: Foreign investment enterprises under the foreign investment law in 2011 by sector

Particulars	Total Permitted Enterprise		Existing Enterprise		Terminated Enterprise	
	No.	Approved Amount	No.	Approved Amount	No.	Incurred Amount
Enterprise as (28-2-2011)	453	35,609.001	269	33,496.248	184	1,046.185
Permitted Enterprise						
Mining Sector Myanmar	1	396.377	1	396.377		
Yang Tae Copper						
Limited (Hong Kong)						
Increased Investment		40.070		40.070		
Manufacturing Sector						
1-Myanmar Brewery Ltd;		0.500		0.500		
(Singapore)						
2-Sunny Shoe Company		1.500		1.500		
Ltd; (Republic of Korea)						
3-Myanmar Tah Hsin		7.140		7.140		
Industrial Co., Ltd. (Hong Kong)						
Total	454	36,054.588	270	33,941,835	184	1,046,185

Source: Directorate of Investment and Company Administration, MNPED (US \$ in million)

Table (3.11) shows foreign investment enterprises under the foreign investment law in 2011 which is passed by directorate of investment and company administration and MNPED. According to Table (3.11), the total permitted enterprise were 454 enterprise which including 270 existing enterprise and 184 terminated enterprise in as of (28.2.2011). The approved amount of the foreign direct investment for total permitted enterprise was 36054.58US \$ million for the existing enterprise was 33941.835US \$ million and 1046.185 US\$ million. It had an increase of mining sector's enterprises

from Myanmar Yang Tae Copper and the investment value was 396.377 US\$ million. It has an increased investment in manufacturing sector from company limited from Hong Kong and investment amount was 40.070 US \$million dollar. Myanmar Brewery Ltd; from Singapore is one of permitted enterprise in manufacturing sector and investment amount is 0.500 US \$ millions. Sunny Shoe company Ltd; from Republic of Korea and Myanmar Tah Hsin Industrial company. from Hong Kong are the permitted enterprise in manufacturing sector and investment amount of 1.5 US \$ million and 7.140US \$ million respectively.

3.3 Revision to the foreign investment law

The main function of MIC is to evaluate and screen proposed the investment plans by examining to their technical viability and financial soundness and grant permit for operation after getting the approval from the trade council.

According to the Table (3.12), the permitted amount of Myanmar Citizens' Investment since 2000-2001 is shown by sectors. There are 66 permitted enterprises of Myanmar's citizens investment with the amount of investment 459.99 US \$ million in 2015. It has largest investment in manufacturing sector with 25 enterprises (50.8 US \$ in million) from 1994 to 2015. It has the less ratio in livestock & fisheries (0.06%) in total amount of Myanmar citizen's investment in 2015.

Furthermore, Myanmar had ever been foremost and attractive member or Non-Alliance Movement (NAM), United Nations (UN), GATT (TTO), ILO, ADB, and IMF and so on. Also Myanmar has been a member of ASEAN since 1997 and the country has been implementing cooperation free trade agreement together with ASEAN and its economic acceleration became more active to international environment.

Table 3.12: Myanmar citizen investment of permitted enterprises

Particulars	No. of Permitted Enterprises	Total Investment	%
Agriculture	1	49.38	10.85
Livestock & Fisheries	2	0.26	0.06
Mining	1	0.75	0.16
Manufacturing	25	50.8	11.17
Power	-	-	-
Transport	3	160.08	35.18
Hotel and Tourism	20	60.31	13.26
Real Estate	3	67.47	14.83
Industrial Estate	1	1.26	0.28
Construction	4	45.39	9.98
Other Services	6	19.29	4.24
Total	66	454.99	100

Source : Planning Department, MNPED, DICA, (US \$ Million, %)

Myanmar has fully participated in regional economic cooperation and integration. The government had made every effort for the all round the country development especially to narrow the gap of the state and division to develop the bordered areas with the national implementing plan and special programs for enhancing the all round development of the areas.

In the respect of the economic objectives, to develop the economy invitation participation plan in terms of technology and investments from the inside sources and outside source of Myanmar.²⁰⁾ Foreign companies are warmly welcomed and door is opened to them by Myanmar. Foreign

20) Myat Thein (2008), economic development of Myanmar, F-123, Planning Department, MNPED

investment law is drafted by legal professionals and economists, tabled in the parliament.

The current foreign investment law provides with the three step process upon the foreign investment projects. There are obtaining a permit, obtaining a trading permit and the completing formalities. These three steps are essential requirements. There are three areas which attract foreign investors to take interests.

Firstly, extending and the exemption from income tax available for a foreign company with the MIC permit during three to five years. Secondly, the foreign investment law includes land rights for all foreigner investors and foreign investment companies and allows them to get the leasehold of real property during thirty years. Thirdly, foreign companies are obliged to increase on their local work force and to increase of percentages for extra working hour or over time. When the legislation is approved, international businessmen gather together into the country in order to gain a foothold in the giant market with 60 million people.

CHAPTER IV Analysis of FDI Effects on GDP in Myanmar

4.1. Sectoral-study of FDI Effects on GDP

Foreign direct investment in Myanmar was conducted briskly in 2010. As a result of the transition from the military government to the civilian government in April 2011, the United States and European countries dismantled many of the economic sanctions imposed in the past. And the Myanmar civilian government was also made through ODA and EDCF projects such as road infrastructure, electricity and telecommunication for growth along with opening policy. This relationship led to a rapid increase in foreign direct investment. Below we compare the changes in FDI and industrial GDP by industry.²¹⁾

Foreign direct investment in agriculture, livestock & fishery

As shown in Table (4.1), the share of agriculture(GDP) in Myanmar GDP was falling from 28.1% in 2011-2012 to 19.6% in 2014-2015, but it accounted for 20.3% on average.²²⁾ FDI was gradually decreasing from 0.7% to 0.1% in 2014-2015. Compared 2014-2015 to agriculture, agriculture (FDI) had risen sharply, but agriculture (GDP) had not increased. A similar phenomenon also appeared in livestock and fishery industry. That is, it could not be judged that FDI had affected agriculture (GDP), livestock and fishery (GDP).

21) A similar analysis, Yoon, H. M. (2016), "Effects of FDI on Myanmar GDP", unpublished discussion paper, Department of Applied Economics, Pukyong National University, 2016, 08.

22) www.epa.gov

Table 4.1: Foreign direct investment in agriculture, livestock & fishery

	2011-2012	2012-2013	2013-2014	2014-2015
Agriculture(GDP)	11,113,043	11,349,615	12,316,082	12,872,824
Agriculture(FDI)	8,251	20,026	40,935	9,363
Livestock & Fishery(GDP)	3,392,103	3,758,635	4,141,221	4,631,946
Livestock & Fishery(FDI)	4,788	94,864	27,721	10,758

Resource: MNPED. (Kyat in billion)

FDI in oil & gas and mining

Oil & gas (GDP) accounted for 0.2% of Myanmar GDP in 2011-2012, but it is gradually increasing in 6.1% in 2014-2015. Natural gas also accounted for about \$3.525 billion in 2014 and it was the high export thing in Myanmar. In addition, oil & gas industry continues to grow because of not only investment but also FDI in Myanmar. FDI in 2014-2015 is almost 25 times higher than that in 2011-2012.

Table 4.2: FDI in oil & gas and mining

	2011-2012	2012-2013	2013-2014	2014-2015
Oil & gas(GDP)	2,241,424	2,745,828	2,919,975	4,011,431
Oil & gas(FDI)	264,366	0	33,234	6,282,398
Mining(GDP)	469,269	418,324	547,645	783,798
Mining(FDI)	13,111	32,337	6,459	37,716

Source: MNPED. (Kyat in billion)

Oil & gas (GDP) has also increased steadily in 2014-2015, but much

lower than the increase in oil & gas (FDI). This suggests that foreign direct investment is replacing national investment in oil & gas.

Mining industry is one of the industries with steadily increasing foreign direct investment. Although the proportion of total foreign investment is low, it has increased to 13,111 billion Kyat since 2011. According to Table (4.2), in 2012-2013, the mining (FDI) has increased but the mining (GDP) has decreased. But Mining (GDP) has increased between 2013 and 2015. This means that a significant portion of, foreign direct investment like oil & gas, is replacing domestic investment.

Foreign direct investment in processing & manufacturing

Processing & manufacturing in Myanmar had not grown rapidly because a lack of SOCs, and the share of Myanmar GDP remained at about 20% in 2011-2012. There is no semi-conductor manufacturing, automobile, ship building industry. Processing & manufacturing (FDI) does not exist before 2011-2012, but as shown in Table (4.3), it starts in 2011-2012 and sharply increases in 2012-2013 and then has decreased since 2013.

Table 4.3: FDI in processing & manufacturing

	2011-2012	2012-2013	2013-2014	2014-2015
Processing & Manufacturing (GDP)	9,132,523	10,299,192	11,553,545	13,043,708
Processing & Manufacturing(FDI)	342,612	1,805,056	1,550,077	1,388,757

Source: MNPED. (Kyat in billion)

Processing & manufacturing (GDP) was not much higher than processing & manufacturing (FDI). Processing & manufacturing (GDP) was similar to 2011-2012, and foreign direct investment is 1,805,056 billions kyart

in 2012-2013. This phenomenon is similar to 2013-2014. It can be said that FDI has substituted national investment. Processing & manufacturing (FDI) has risen sharply since 2012-2013, but processing & manufacturing (GDP) is slowly increasing. In this respect, the effects of FDI are not large.

FDI in power industry

Power industry accounts for 1% of Myanmar's GDP, which is low but generally has a large inducement effect. The power industry (FDI) was concentrated in 2011-2012 and 2014-2015. Myanmar government has actively attracted FDI in order to expand power, which is the fundamental element of production. It is difficult to estimate the effect of the FDI in power industry, because it has an effect with long-term. The increasing in industrial GDP in 2014-2015 can be attributed by domestic investment rather than by FDI.

Table 4.4: FDI in power industry

	2011-2012	2012-2013	2013-2014	2014-2015
Power Industry(GDP)	481,449	614,930	695,855	924,959
Power Industry(FDI)	311,392	45,953	41,394	469,570

Source : MNPED. (Kyat in billion)

FDI in transport & communication industry

In 2011-2012, it rose to 0.17 due to foreign investment. A similar phenomenon occurred in 2013-2014. After 2014-2015, despite the high level of transportation & communication, the industrial growth rate remains at 0.09. This means that the effects of foreign direct investment in Myanmar are reduced and are being converted into substitute effects. In addition, foreign direct investment in

construction industry has not been done yet, and foreign direct investment in hotel and tourism has been activated since 2012. The analysis by industry is summarized as follows.

Table 4.5: FDI in transport & communication industry

	2012-2013	2013-2014	2014-2015	2015-2016
Transportation & Communication (GDP)	5,913,316	6,718,521	7,840,712	8,729,499
Transportation & Communication (FDI)	0	1,175,949	1,733,042	2,518,019

Source: MNPED. (Kyat in billion)

Foreign direct investment in Myanmar is the highest in oil & gas sector with 50.35%. The domestic tribal capital is mores significant than inducement effects for export. Next, the power industry is 38.28%. Although it is a substitute effect of national investment and has the advantage of SOC expansion, there is disadvantage that the basis of the national industry is dominated by foreign capital. The third is the manufacturing industry, which has a fairly low FDI share of 0.38%. There was no correlation between foreign direct investment and GDP in the manufacturing industry. And the investment in power and oil & gas industry affect upon the national product over along period of time.²³⁾

23) A similar analysis, see, Yoon, H. M. (2016), "Effects of FDI on Myanmar GDP", unpublished discussion paper, Department of Applied Economics, Pukyong National University, 2016, 08.

4.2 Time series analysis

4.2.1 Methodology of statistical analysis

In the macroeconomics, it is the common practice real variables to decompose into a secular and a cyclical component or the growth component.. In the domain of growth theory with real factors, the secular component is such as the capital, GDP, population, the cyclical component with numismatic factors and export. The cyclical conversion are expressed to dissipate over time or permanent .

By Nelson and Plosser(1982), the well-known unit root test was proposed firstly and it was used in the empirical studies. According to Nelson and Plosser(1982), the fourteen annual macroeconomic time series were established whether they could characterize as difference-stationary or trend-stationary. In these cases, the bond yield and the unemployment rate were strong on the evidence of unit roots. However, following a random walk process, this method can not account to increase in the probability distribution of time-series data.

By the traditional regression, the converting time series data into its first difference can provide a stationary time series. The existence of unit roots become critical in time-series analysis. Dickey and Fuller(1979) and Nelson and Plosser(1982) tested to improve average in time series.

There are Dickey-Fuller Test, Kwiatkowski-Phillips test, and Augmented Dickey-Fuller test which are to verify the unit root problem. This work takes the Augmented Dickey-Fuller test, that is generally used. It is proposed by Dickey(1984) for the autoregressive in time series variables but detection unit roots in autoregressive (AR), developed from Dickey-Fuller Test.²⁴⁾

Dickey-Fuller Test forms the time series with AR(1) process, that

24) Dickey, D and W. Fuller (1979), "Distribution of the estimators for autoregressive time series with a unit root,"Journal of the American Statistical Association, 74, 427-431.

is, $H_t = H_{t-1} + \epsilon_t$, where H_t is the time series, that is to be test, and ϵ_t the residual term. With addition of constant(c), the equation changes to $H_t = c + \lambda H_{t-1} + \epsilon_t$ and with trend the equation to $H_t = c + \lambda H_{t-1} + \mu T + \epsilon_t$. These tree equations can be expressed with the first difference as follows:

$$\begin{aligned}\Delta H_t &= (\lambda - 1)H_{t-1} + \epsilon_t \\ \Delta H_t &= c + (1 - \lambda)H_{t-1} + \epsilon_t \\ \Delta H_t &= c + (\lambda - 1)H_{t-1} + \mu T + \epsilon_t\end{aligned}$$

It is clear, that ΔH_t equals to ϵ_t , which is the white noise. So, ΔH_t is a stable time series. That is, The test verifies if $(\lambda - 1) = 0$ or $\lambda = 1$. This methode can take problem, if the residual term has a autocorrelation. Generally, the autocorrelation exists in the times series variable. To solve this problem, the Dickey-Fuller Test adds the augmented terms, so it is called Augmented Dickey-Fuller Test:

$$\begin{aligned}\Delta H_t &= (\lambda - 1)H_{t-1} + \sum_{m=i}^n \Delta H_{t-1} + \epsilon_t \\ \Delta H_t &= c + (\lambda - 1)H_{t-1} + \sum_{m=i}^n \Delta H_{t-1} + \epsilon_t \\ \Delta H_t &= c + (\lambda - 1)H_{t-1} + \mu T + \sum_{m=i}^n \Delta H_{t-1} + \epsilon_t\end{aligned}$$

Augmented Dickey-Fuller Test uses the same methode to Dickey-Fuller test and F-Statistic. The serial correlation was tested by the Durbin-Watson statistic in the residual term with autocorrelation and OLS estimation. The regression may be written as, with matrix notation: $y = X\beta + \epsilon$

A matrix reprints independent variables and a dimensional vector is the dependent variables. The label coefficient depicts the estimated the coefficients. The least squares regression coefficients are computed by the standard OLS formula: $b = (X'X)^{-1}X'y$

The autocorrelation in the residual term is a problem in the above time series estimation. This results from a correlation between successive series of observations. If there is a correlation in the residual term, the above estimates are not accurate. One way to verify the existence of autocorrelation is the Dubbin-Watson statistic.

That is, the serial correlation in the residuals was measured by Durbin-Watson statistic. The statistic is expressed as:

$$W = \frac{\sum_{t=1}^T (\epsilon_t - \epsilon_{t-1})^2}{\sum_{t=1}^T \epsilon_t^2}$$

If the value of DW is between 2.45 and 1.65, it is said that there is no autocorrelation in the residuals. If autocorrelation exists, there is a way to add AR(1) to an independent variable. The AR(1) model is specified as: $y_t = x'_t \beta + \mu_t$ and $\mu_t = \rho \mu_{t-1} + \epsilon_t$

The parameter ρ is the first-order serial correlation coefficient. In effect, the AR(1) combines the residual from the past-time observation into the regression to the present observation.

4.2.2 Empirical Analysis

In this section, the effects of foreign direct investment on national income are analyzed. Quarterly data for 2009(1/4)-2015(4/4) published in Myanmar Ministry of Commerce were used.²⁵⁾ First, the unit root required for time series analysis was verified. The results of the estimated reference values for GDP and FDI to determine the appropriate time lag for the unit root test are given in following table.

25) A similar analysis, see Yoon, H. M. (2016), "Effects of FDI on Myanmar GDP", unpublished discussion paper

Table 4.6: Determining optimal time lags for GDP

Endogenous variables: GDP						
Lag	Log L	LR	FPE	AIC	SC	HQ
4	-243.41	4.8408	27941.8	13.074	13.289	13.150
5	-236.33	11.908*	20322.6*	12.754*	13.013*	12.846*
6	-236.34	3.61E-07	21455.0	12.807	13.109	12.914

Table 4.7: Determining optimal time lags for FDI

Endogenous variables: FDI						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-299.02	NA	421959*	15.790*	15.833*	15.805*
1	-298.77	0.4671	439066	15.830	15.916	15.860
2	-298.56	0.3880	457797	15.871	16.001	15.917

Note : Lag order selected by the criterion (each test at 5% level)

LR: sequential modified LR test statistic,

FPE: final prediction error

AIC: Akaike information criterion,

SC: Schwartz information criterion

HQ: Hannan-Quinn information criterion

Based on the above results, the maximum lag was set to 5. The following table shows the results of the unit root test. The results of the unit root test by the Augmented Dickey-Fuller test are shown on national income (GDP) and foreign direct investment (FDI) in Table (4.8).

Table 4.8: Augmented Dickey-Fuller test

	GDP	FDI	LGDP	LFDI	DLGDP	DLFDI
t-stat.	0.731	-5.403	-0.182	-4.940	-2.607	-6.807
prob.	0.991	0.000	0.932	0.002	0.100	0.000

Note : TCV 1% \equiv (-3.610), 5% \equiv (-2.939), 10% \equiv (-2.608) max lag=9

Table (4.8) shows that in the level variable, unit root exists not in FDI but in GDP. The results are similar when the log is taken. When the log difference(DL) is taken, it is judged that there is no unit root problem in both GDP and FDI.

Estimation results for GDP are shown in Table (4.9). GDP is a dependent variable only. The results show that GDP is affected by FDI under the 1% significance level. Since the value is low, autocorrelation occurs in the error term, and R^2 which includes the problem of low explanatory power of the model is also low. In addition, the GDP includes an unit root. In order to solve the autocorrelation problem, AR(1) is added in method 2. The results show that FDI does not affect GDP at the 10% level.

Table 4.9: Estimates for GDP

	C	FDI	AR(1)	R^2	DW
MH 1	238.03*** (13.907)	0.828*** (3.777)		0.254	0.671
MH 2	-2563.47 (0.1179)	-0.052 (0.1179)	1.014*** (38.627)	0.973	2.213

Note : () = t-statistic. prob. *=0.1 **=0.5 ***=0.01

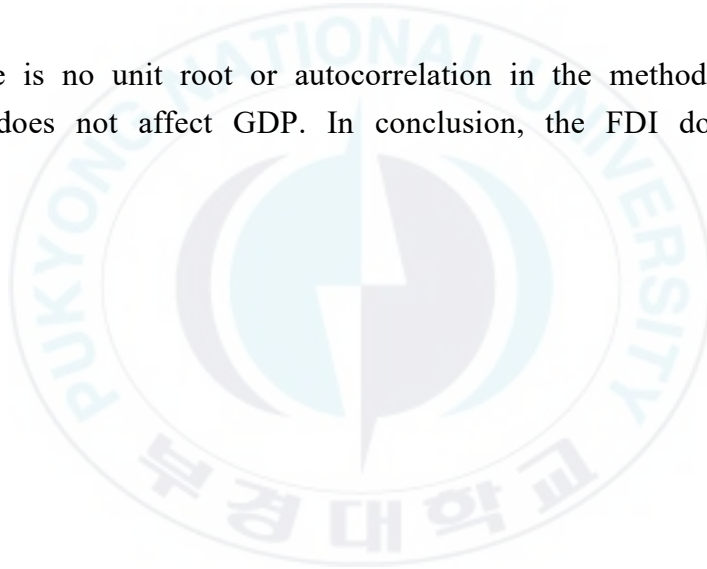
The estimation results are produced by log data. Table (4.10) shows that FDI affects GDP at the level of 10% when the log is taken as an independent variable. However, there is an autocorrelation problem as shown in Table (4.10). In order to remove this, AR(1) is added in Method 2) The results show that at the 10% level, GDP is affected by LFDI, but sign is different with theoretical results. According to this, it is judged that the GDP decreases when the FDI increases.

Table 4.10: Estimates for and LGDP and DLGDP

		<i>LFDI</i>	<i>DLFDI</i>	<i>AR</i> 1)	<i>R</i>	<i>DW</i>
MH 1	7.609 ^{***} (47.242)	0.0489 [*] (1.696)			0.064	0.171
MH 2	10.260 [*] (1.825)	-0.007 [*] (-1.709)		0.988 ^{***} (35.467)	0.969	2.279
MH 3	0.027 (2.825)		-0.001 (-1.003)		0.024	2.323

Note : () = t-statistic. prob. *=0.1 **=0.5 ***=0.01

There is no unit root or autocorrelation in the method 3. However, at 10%, FDI does not affect GDP. In conclusion, the FDI does not seem to affect GDP.



CHAPTER V. CONCLUSION

5.1 Findings

This thesis studies on foreign direct investment in Myanmar's economy and also examines the current policy and status of foreign direct investment in Myanmar. The current law and policy of FDI in Myanmar is dealing with the nations politically, socially and economically. The foreign investment law includes land rights for all foreign investors and foreign investment companies and allows them to get the leasehold of real property. The financial institution sector and the financial market have the propensity for more attraction to the foreign direct investment in Myanmar. Foreign investors are interested in the part of the construction, the transportation and the telecommunication sector because of the strengthen policies, law and rules as the new democratic government.

In chapter 3, it can be seen that the current situation of foreign investment in Myanmar is weak comparing of the neighbour countries. Foreign direct investment flows of Myanmar economy are less than that of other asian countries for a long time. Myanmar economy was faced many obstacles to get the opportunities of foreign direct investment. And then, both of Myanmar foreign investment law and Myanmar citizen law are weak although Myanmar has much of natural recourses.

Among the twelve economic sector of Myanmar, the agriculture sector is mainly contributed to Myanmar economy but foreign direct investment flow cannot be reached to this sector because of the of technology and knowledge weakness of Myanmar farmers. And then, there is a scarcity of skillful worker and poor infrastructure. Myanmar economy became the barriers to invest in the manufacturing because of these weakness. In Chapter 4, it can be seen the sectoral-study of FDI on GDP and time series analysis. The result says that FDI does not influence the growth of Myanmar GDP.

Foreign direct investment in Myanmar was conducted briskly and it was a transition of government from the military government to the civilian government. Therefore the Myanmar civilian government was made through ODA and EDCF projects such as road infrastructure, electricity and telecommunication for growth along with opening policy. This relationship leads to a rapid increase in foreign direct investment.

This results say that the foreign direct investment has already been a main important factor and crucial role on the Myanmar economy by the increasing technology innovation, market-orientation as well as liberalization. The stock of foreign investment might be hoped to affect the GDP by forcing to be as a development. To achieve the rapid growth of the economy, one of the important potential sources is foreign direct investment.

5.2 Suggestions

Myanmar requires to achieve an international level of infrastructure development which includes international ports, airports, roads and highways, inland water, railways, electric power, telecommunications, and sewerage system development. To invite foreign investors, the government should provide the adequate location for manufacturing and trading activities.

Myanmar should increase the quality products by using new technology with good investment. The industrial sector suffers from poor power supplies that limit an access to support some raw materials and machines and so on. So, Myanmar should much more try to develop its industrial sector and creation of employment opportunities and reduction of urbanization problem with adequate policies through industrialization required. To sum up, it will be better if the government can establish sound and transparent macroeconomic policies for investment environment, emphasize on the achievement of financial sector development, physical infrastructure and human resource development, and set up the one-stop system for foreign direct investment.

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