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PREFACE

MEA has been dedicating to pursuing the research journal every once a year. Please however accept our apology for the delay of the articles which we are aware of a disappointment to readers who had their hopes. It is impossible for us to make it on time, though we had collected the articles since early 2019 and with articles written ahead of time as can be seen, but a Covid 19 pandemic was one reason for the delay besides many others for the publishing. For that, we do miss our deadline for the releasing and delivery.

This issue is our second release and it opens the outcome of a collaborative effort of academics and enthusiastic authors to enhance the dissemination of research in Economics and to familiarize the readers with the implementation of knowledge that has been learned on campus and the practical knowledge extensively different from knowledge achieved in an institution.

The views presented in this journal tried as much as possible to focus on a few aspects not just to economics professionals for further learning but to everybody.

If the journal can help anyone in providing information we feel that the purpose of this product has been filled, exposing some elements to the academics and readers who wish to appreciate economic insights.

Writing a research paper is not an easy task but rewarding than expected.

MEA is thus grateful to authors who have contributed the articles, without which MEA would not have achieved it without their strong support.

Again, we do share our deep appreciation to the readers for their patience, consideration and unfailing support given to us.

We would like to inform our readers that the contents of all articles are only detection of the respective authors.

Happy New Year 2021!

Myanmar Economic Association
January 2021

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The Importance of Governments' Development Management Capability and Nation Building Spirit in Achieving Sustainable Development (The Case of Myanmar)

Maung Maung Lwin*[1]

ABSTRACT

As the study on the important role of government and its capabilities in achieving sustainable development related to the democratic and market-oriented economy of Myanmar is still in its infancy, and very limited, this paper attempts to partially fill this study gap. It has three main objectives viz. (1) Examining the important role of governments, (2) Investigating the capability and national building spirit of Myanmar's past governments, and (3) Suggesting the important tasks for present day Myanmar in achieving sustainable development. The findings are (1) Having only strong nation building spirit or having peace and stability alone cannot achieve sustainable development, and (2) The government interventions without transparency and accountability or the government intervention only for the benefit of ruling class cannot achieve sustainable development. Finally, this study suggests five development related strategies for successful transition and sustainable development of Myanmar.

Introduction:

There are numerous studies on the importance of economic and non-economic factors for achieving sustained economic growth in developing countries. These studies provide the valuable finding that the failure of sustained economic growth

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*An older version of this paper was prepared prior to the 2015 Myanmar nationwide election and published in 2016 in Japan. This is an updated summary paper of the author's previous findings. The author would like to express his sincere thanks to Prof. Sean Turnell, Director of Research, Myanmar Development Institute (MDI) for editing and making this paper into a readable one, and Ms. Su Myat Noe Lwin, research assistant of MDI for providing diagrams to this study

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in these countries is not simply because of a lack of appropriate capital investment, technology, human resources, infrastructure, favorable terms of trade, or even the presence of severe debt and budget deficit problems. Rather, since the middle of the 1980s, international organizations and other researchers have emphasized the important role of government and its capabilities in the efficient utilization of natural and human resources, economic aid, technical assistance and foreign direct investment for achieving economic growth.

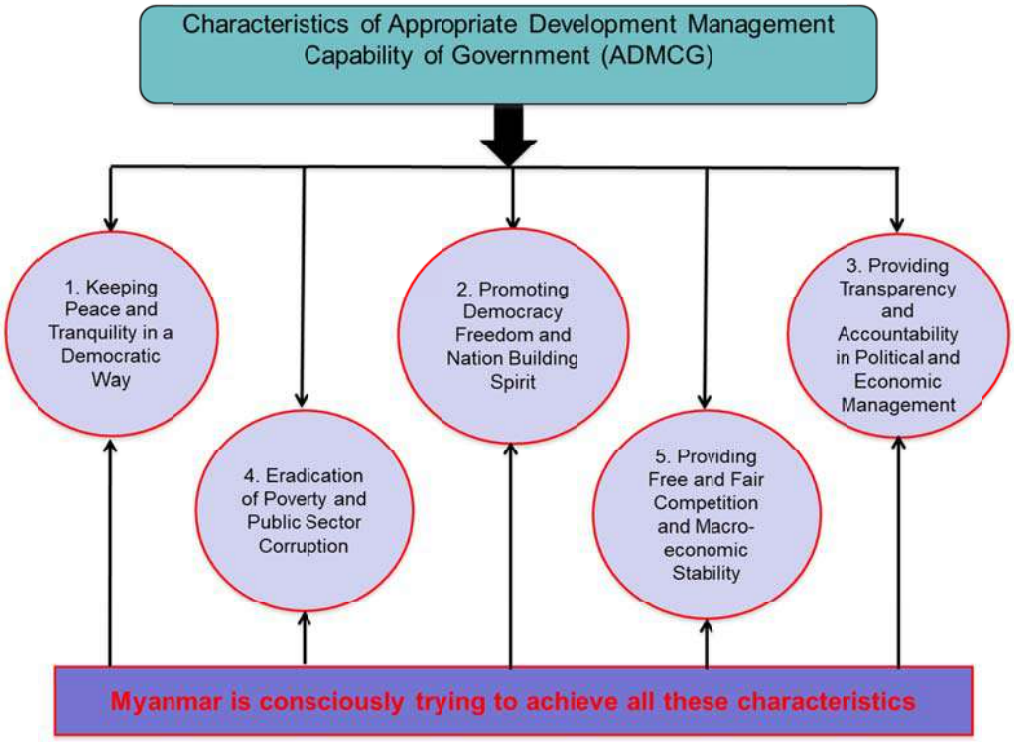
These investigations have been followed by studies on Development Management Capability of Government (DMCG) and Nation Building Spirit (NBS), as alternative aspects of achieving sustainable development (Lwin 2016). However, the study of the important role of government and its capabilities in achieving sustainable development related to the democratic and market-oriented economy of Myanmar is still in its infancy, and very limited. This study attempts to partially fill this study gap. It has *three main objectives* viz. (1) Examining the important role of governments in achieving development, (2) Investigating development management capability and the national building spirit of Myanmar's past governments, and (3) Suggesting the important tasks for present day Myanmar in achieving sustainable development. Before examining the important role of governments in general, and investigating the capability of Myanmar's past governments, it is appropriate to explain briefly the important terms and concepts that are chiefly used in this study.

1. Explanation of Terms and Concepts:

(a) The Term *"Development Management Capability of Governments (DMCG)"*, Kaihatsu Unei Nouryoku in Japanese, was developed by Prof. Nagamine and this author at the Graduate School of International Development, Nagoya University during the 1990s. The DMCG refers to the ability of government in achieving progress of peoples' daily socioeconomic lives at the least cost to the society. In other words, DMCG is the ability of governments in sustaining improvement of socioeconomic wellbeing of the people as a result of achieving high, stable, prolonged and shared economic growth. Capability is the ability to undertake and promote efficiently law and order, peace and tranquility, freedom, health, education and socioeconomic infrastructure, as well as peoples' employment and income. Effectiveness is a result of using that capability to meet peoples' needs. A government may be capable but not very effective, if its capability is not used in society's interest (World Bank 1997) or it does not have nation building spirit. Based on this World Bank view, the characteristics of appropriate development management capability of

government in the context of Myanmar can be comprised of (1) Keeping peace and tranquility in a democratic way, (2) Generating job and income opportunities to eradicate poverty and corruption, (3) Promoting democracy, freedom and nation building spirit, (4) Providing free and fair competition and macroeconomic stability, and (5) Providing transparency and accountability in political and economic management. It is needless to point that the capable and effective government differs greatly across countries at different level of development. These characteristics of DMCG can be depicted as in diagram (1).

Diagram 1. Characteristics of Appropriate DMCG



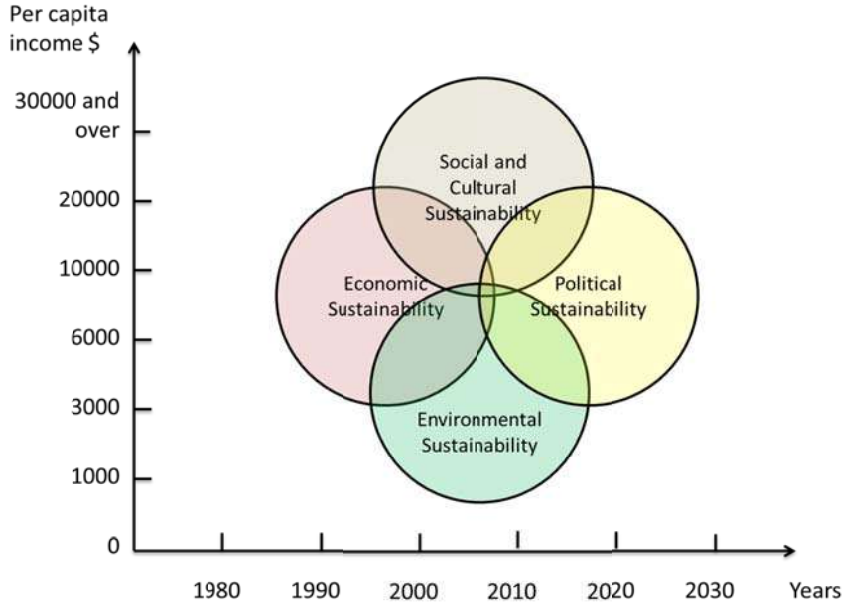
Source: Authors' image diagram

(b) The term *"Nation building spirit"* refers to feeling of loving the country more than any other, and being proud of it – more generally known as patriotism. But, in this study, nation building spirit means "the spirit of loving the country with a *concrete vision* of building his or her country from a developing to industrially developed high income country". Nation building spirit also means the spirit of loving the country with a concrete objective of improving peoples' daily socioeconomic life. For achieving sustainable

development of a country, its government must have not only capability but also the nation building spirit.

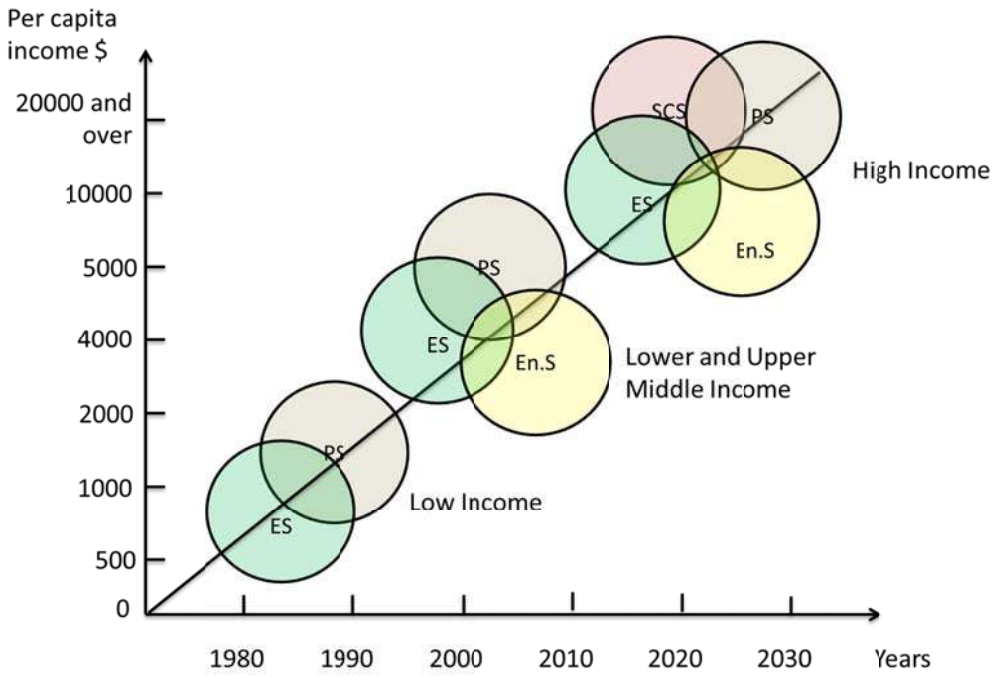
(c) The term "sustainability" generally comprises four components viz. (1) Political Sustainability, (2) Economic Sustainability, (3) Environmental Sustainability and (4) Social and Cultural Sustainability as stated in diagram (2). Needless to point out perhaps, that the achievement of sustainable development of a country requires all these components, although they have different priority and degree of sustainability in line with the stages of economic growth. According to the historical experiences of developed and developing countries, developing countries (low and lower-middle income countries in general) give more weight or priority to political and economic sustainability; those which are at the newly industrializing countries (upper-middle income and some of the high-income countries) also continue to give weight on political, economic matters, but begin to consider environmental sustainability. The industrialized high income developed countries generally have the capacity to maintain and balance all the four components (political, economic, environmental and sociocultural components) of sustainability. The change in priority, given components of sustainable development with respect to level of development, can be depicted as in diagram (3).

Diagram 2. Component of Sustainable Development



Source: Authors' image diagram

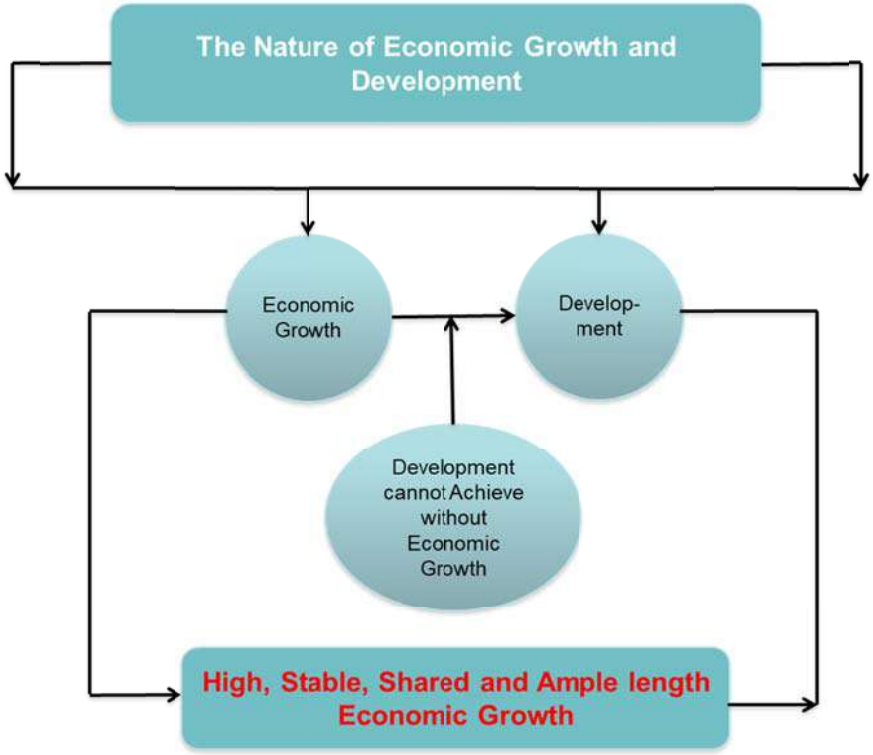
Diagram 3. Components of Sustainable Development and Level of Income



Source: Authors' image diagram

(d) *The nature of growth and development:* The progress of "peoples' income and GDP" of a country during a certain period is known as economic growth. Development means "growth of peoples' income and GDP" together with the "progress of technology and science as well as socioeconomic condition of the people", "change in socioeconomic structure", "progress of technology and science" and "having acceptable income distribution and poverty". Therefore, it can be said that economic growth is an integral part of development and, development cannot be achieved without economic growth. But, high, stable, shared, and prolonged economic growth is required for achieving sustainable development. The relationship between growth and development is given in diagram (4).

Diagram 4. The Nature of Growth and Development



Source: Authors' image diagram

2. Required Basic Factors for Achieving Sustainable Development:

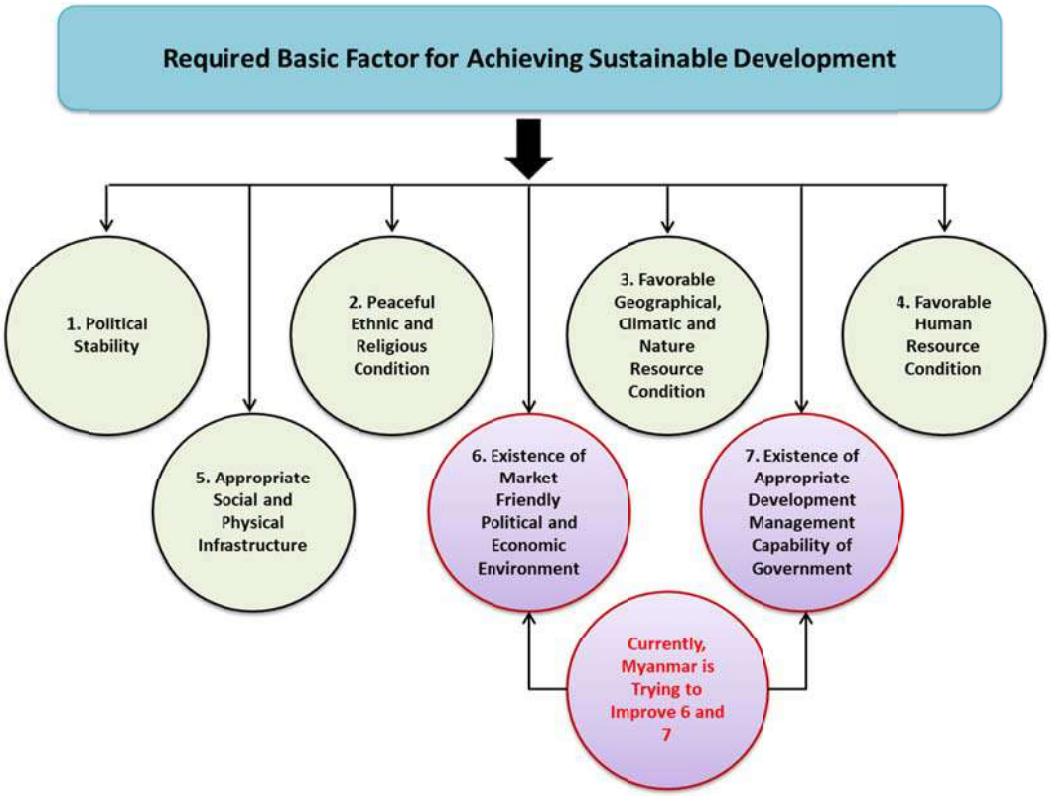
For achieving sustainable development, many interrelated economic and noneconomic factors are required. These factors are not simple, nor easy to coordinate and implement. However, based on past and present development experiences of today's developed and developing countries, including Myanmar, we can summarize the determinants of development as follows, and depict as in diagram (5).

(1) Existence of acceptable political stability and peace,
(2) Existence of appropriate geographical and climatic conditions,
(3) Existence of appropriate natural and human resources,
(4) Existence of acceptable peaceful ethnic and religious conditions,
(5) Existence of appropriate social and physical infrastructure,
(6) Existence of a market friendly political and economic environment, and
(7) Existence of government which has development management capability and nation building spirit (NBS).

According to the experiences of former Asian newly industrializing economies (ANIES) and high performing economies of Asia (HPEA), the above mentioned

three out of seven factors viz. political stability and peace, market friendly political and economic environment, and development management capability and nation building spirit of governments (1,6 & 7) can be considered as the most responsible factors for achieving sustainable development (Lwin 2018). Regarding Myanmar, it should especially try to improve factor (6), existence of market friendly political and economic environments, and factor (7), building appropriate development management capability of government.

Diagram 5. Required Basic Factors for Achieving Sustainable Development



Source: Author's image diagram

Before the military-backed U Thein Sein Government (that is, before 2010), Myanmar was obviously lacking a market friendly political and economic environment and national building spirit. However, during the U Thein Sein administration, Myanmar's economy was becoming more open and more market oriented. But, unfortunately, corruption, abuse of power and nation building spirit were still weak as in the past military regimes. Myanmar achieved remarkable GDP growth rates of between 7% to 8% during 2012 and 2015. But almost all the big industries and businesses were owned and run by military

society, and huge profits and wealth were also extracted by them. The unshared economic growth problem (fair distribution of wealth and income) of a country is mainly due to two interrelated factors, such as (a) Existence of deep-rooted corruption and abuse of political power by ruling class and (b) Differences in obtaining chances for establishing new business, employment and income opportunities. Myanmar is no exception. Accordingly, Myanmar should have not only effective policy measures and actions for the eradication of corruption and the abuse of political power, but also implement these in a timely way.

3. The World Bank view on government, market and economic growth

The studies of the World Bank, but especially via its annual World Development Report, has thrown much light on the important role of government and market in achieving economic growth, especially following the collapse of Soviet Union, the downfall of Berlin Wall, and the emergence of Transitional Economies in Eastern Europe and in Asia during 1990s. Among the World Bank Studies, the Challenge of Development (1991), the East Asian Miracle (1993), From Plan to Market (1996), and the State in a Changing World (1997) are remarkable.

The content of this section is mainly based on these World Bank prognoses of the idea of government, market and economic growth. Myanmar should always keep in mind the following three simple questions and three duties of government in general during the operation of political and economic management. These are given below, and can be depicted as in diagrams (6) and (7).

The three simple questions for the governments:

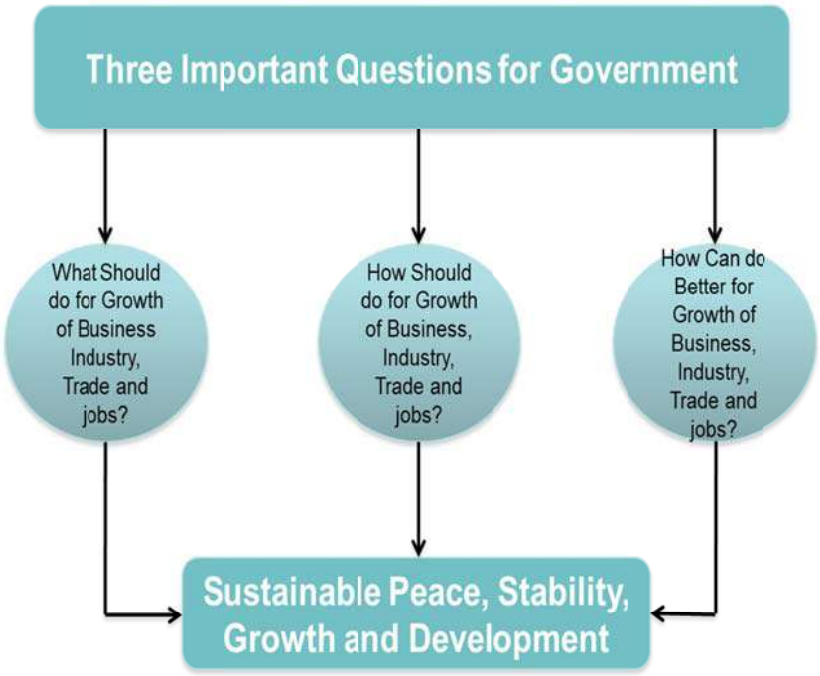
(i). What should government do for the growth of industry, business, trade, employment and income?

(ii). How should government go about promoting for the growth of industry, business, trade, employment and income?

(iii). How can government do better for the growth of industry, business, trade, employment and income?

If a country's government can solve the above mentioned three simple questions, this would lead to the achievement of three duties of government given in diagram (7).

Diagram 6. Three Simple Questions for the Governments



Source: Authors' image diagram

The three duties of governments:

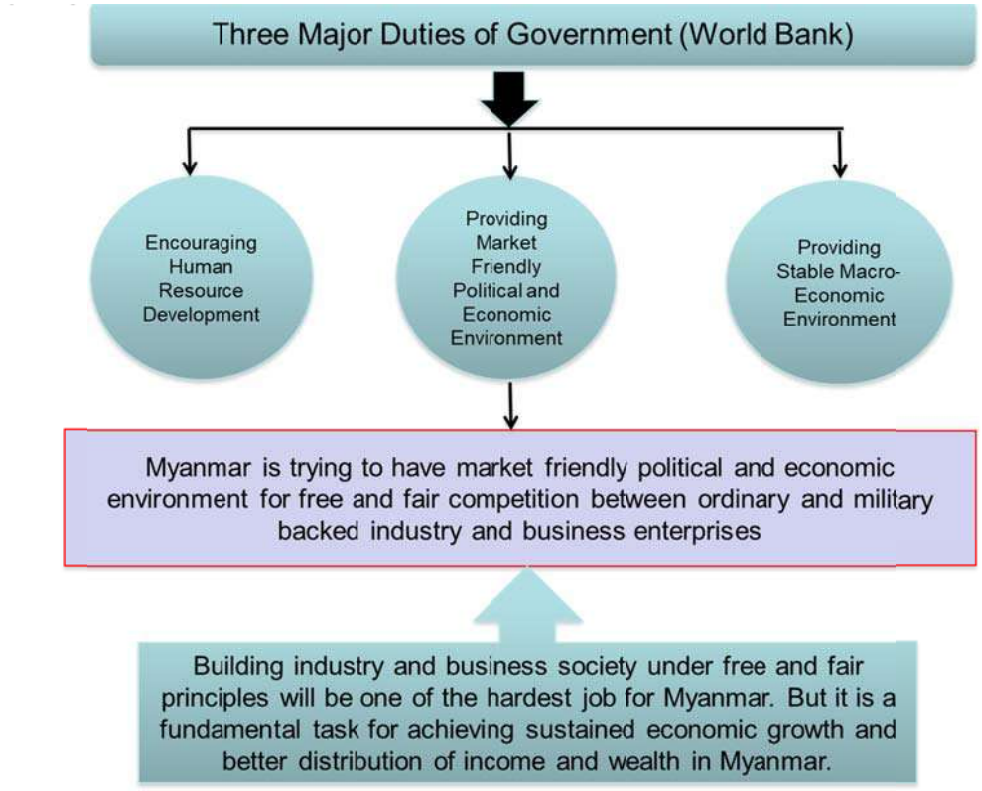
Moreover, the following three duties of government would also be appropriate to apply for Myanmar in order to achieve rapid and sustained economic growth.

(i). Providing human resource development policy measures (education, health, skill, knowledge, employment and income opportunities)

(ii). Providing market friendly political and economic environment (rules and regulations; growth of investment, industry, business, trade and employment)

(iii). Providing stable macroeconomic environment (high, stable, ample length, shared economic growth)

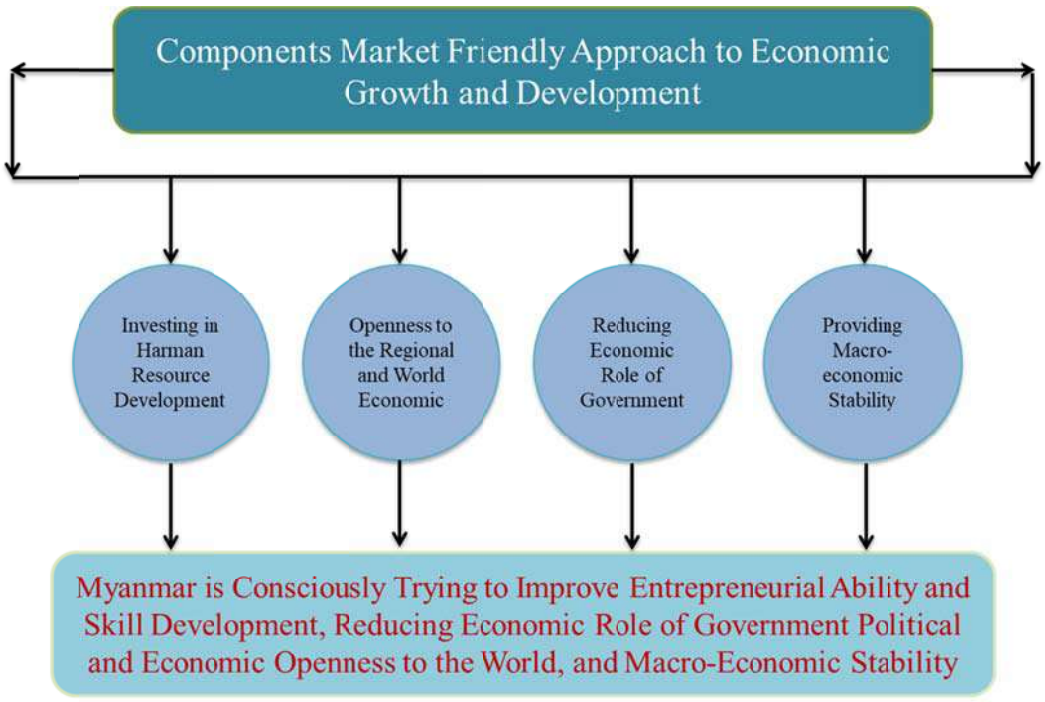
Diagram 7. Three Major Duties of Government (World Bank)



Source: Authors' image diagram

To achieve economic growth a country requires honest government, a market friendly political and economic environment, and capable government which has a strong nation building spirit. According to the World Bank findings above, the success of economic growth is the result of (i) Investing in human resource development, (ii) A much reduced economic role of government (iii) Openness to the rest of the world, and (4) Macroeconomic stability. These findings and ideas have crystallized into what is widely known as the "Market Friendly Approach to Development" (World Bank) and this is depicted in diagram (8). The successful building of a market friendly political and economic environment largely relies on the development management capability of governments (DMCG). For achieving sustained economic growth, currently, although Myanmar is trying to transform its economy from a public sector led into a private sector led economy, privatization of State Economic Enterprises (SEE) and the introduction of public private partnership (PPP) are not progressing well. However, these types of difficulties are usually faced during the early stage of transition and Myanmar can learn from the experiences of China and Vietnam.

Diagram 8. The Nature of Market Friendly Approach

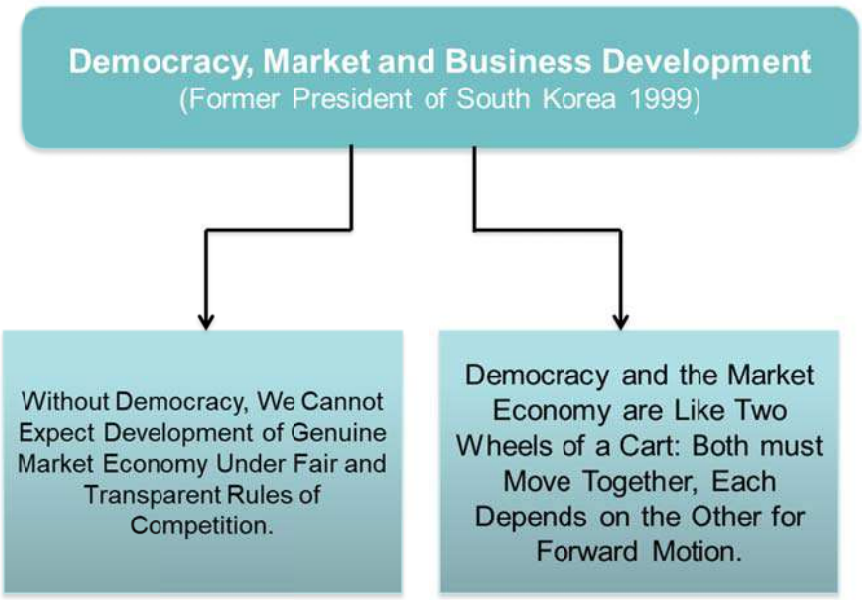


Source: Authors' image diagram

Democracy, market and DMCG:

The former President of South Korea, Kim Dae-jung, expressed that "without democracy, we cannot expect development of a genuine market economy under fair and transparent rules of competition. Democracy and the market economy are like two wheels of a cart: both must move together, each depends on the other for forward motion (Kim Dae-jung, 2001). This is depicted in diagram (9). The success of building democracy and the market together requires a government's capability and nation building spirit. Needless to point that that balancing the gradual improvement of democracy and the market, as well as steering democracy and market to move together, are also important challenging issues in Myanmar.

Diagram 9. Democracy, Market and Business Development



Source: Authors' image diagram.

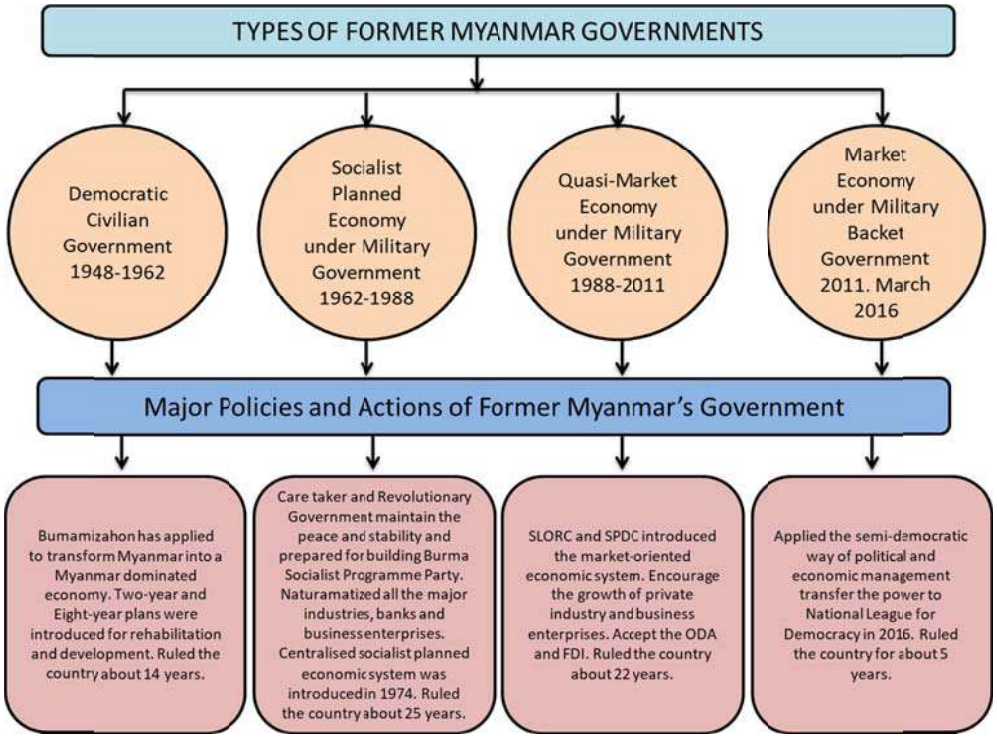
4. Investigating Past Myanmar Governments' Capability and Nation Building Spirit

(1) Types of political-economic system and government in Myanmar

We can broadly classify the types of political economic systems and governments of Myanmar, after independence and to the present, as follows and can be depicted as in diagram (10).

(i). Market Economy under Civilian Democratic Government (1948~1962)
(ii). Socialist Planned Economy under Military Government (1962~1988)
(iii). Quasi-Market Economy under Military Government (1988~2011)
(iv). Market Economy under Military Backed Government (2011~March 2016)
(v). Market Economy under Civilian Democratic Government (April 2016~)

Diagram 10. Major Policies and Actions of Former Myanmar Governments



Source: Author's image diagram

(2) A glimpse on major policies and actions of former Myanmar governments:

(i) *Market Economy under Civilian Democratic Government (1948~1962):*
This first civilian democratic government, immediately after the independence, applied a 'Burmanization' policy in order to transform the Myanmar economy from a foreigner dominated one, into a Bamar dominated one. Then, formulated and implemented the Two-year and Eight-year plans for country's rehabilitation and development. This government would rule the country for about 14 years.

(ii) *Socialist Planned Economy under Military Government (1962~1988):*
The military general Ne Win initially led the "Care Taker Government, and then the Revolutionary Government" (1958~1962), maintained stability through force and prepared for building the Burma Socialist Programme Party (BSPP). Under this government, "inward-looking self-reliance economic policy in isolation" was applied, and all major industries, banks and business enterprises were nationalized and centralized into a socialist planned economic system that was introduced in 1974. It ruled the country for about 25 years.

(iii) *Quasi-Market Economy under Military Government (1988~2011):*
The 'new' military government named initially as the State Law and Order Restoration Council (SLORC, 1988~1997)) solved the social and political unrest, and maintained a certain stability during its administration. Then, SLORC changed its name to the State Peace and Development Council (SPDC, 1998~2011) led by Senior General Than Shwe, and introduced a quasi-market oriented economic system. The *"outward looking economic policy"* of this period encouraged the growth of private industry and business enterprises and also accepted ODA and FDI for the development of infrastructure and some business enterprises. This somewhat market oriented military government ruled the country for about 22 years.

(iv) *Market Economy under Military Backed Government (2011~March 2016):*
Introduced more market-oriented measures than the former SPDC. Applied a semi-democratic way of political and economic management. Transferred power to National League for Democracy (NLD) party according to the nationwide election result of 2015. This military backed government ruled the country for about 5 years.

The above mentioned broadly classified types of past Myanmar's governments, and their major policies and actions are depicted in diagram (10).

(3) Investigating former governments' capability, nation building spirit (NBS) and lessons learnt

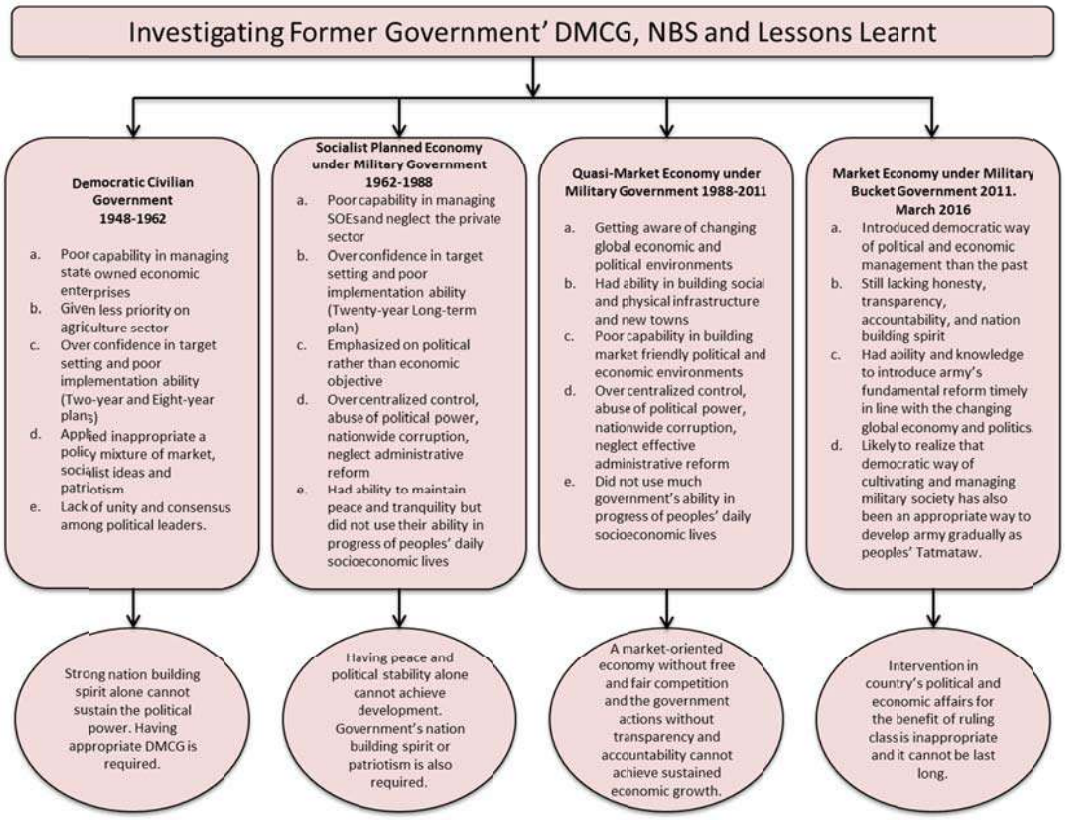
(i). Democratic Civilian Government (1948~1962):

Capability & NBS:

a. Poor capability in managing State Economic Enterprises (SEE)
b. Less priority on agriculture sector
c. Over confident in target setting and poor implementation ability (Two-year and Eight-year plans)
d. Inappropriate policy mixture of market, socialist ideas and patriotism
e. Lack of unity and consensus among political leaders.

Lesson learnt:
The strong nation building spirit alone cannot sustain political power. Appropriate DMCG, or appropriate political and economic management ability is required.

Diagram 11. Investigating Former Governments' DMCG, Nation Building Spirit and Lessons Learnt



Source: Author's image diagram.

(ii). Socialist Military Government (1962-88):

Capability & NBS:

a. Poor capability in managing SEE and neglected the private sector,
b. Over confidence in target setting and poor implementation ability (Twenty-year Long-term Plan),
c. Priority given to BSPP political objectives rather than economic performance,
d. Over centralized control, abuse of political power, nationwide corruption and ignorance of administrative reform, and
e. Having ability to maintain peace and tranquility but did not use this and other ability for the progress of peoples' daily socioeconomic lives.

Lesson learnt:

Having ability to maintain peace and stability alone cannot achieve sustainable development. Government's true and inclusive nation building spirit as well as the application of a people centered approach to development is also required.

(iii). Quasi-Market Oriented Military Government (1988-2011):

Capability & NBS:

a. Becoming aware of the changing national, regional and global economic and political environment,
b. Having ability in building nationwide physical infrastructure, new towns and cities
c. Having poor capability in building a market friendly political and economic Environment,
d. Having continued centralized control, abuse of political power, nationwide corruption problems, and ignorance of effective administrative reform, and
e. Not using government's ability to progress peoples' daily socioeconomic lives.

Lesson learnt:

Introducing the market without free and fair competition, and government actions without transparency and accountability, cannot achieve people centered sustained economic growth.

(iv). Market-oriented Military Backed Government (2011-2016):

Capability & NBS:

a. Introducing more democratic ways of political and economic management than the previous military governments,
b. Lacking honesty, transparency, accountability, and nation building spirit,
c. Noticing the requirement of army's timely fundamental reform in line with the changing regional and global economic and political environment, and
d. Realizing the requirement of the democratic way of transforming military society (army) gradually into a peoples' Tatmataw (army) again would be the most appropriate way to the sustainable development of that army.

Lesson learnt:

The government intervention in the country's political and economic affairs for the benefit of ruling class is inappropriate and it cannot be last long.

5. A Brief Suggestion for Sustainable Development

It is difficult and unfair (yet) to evaluate the performance from DMCG and NBS point of view, of the about four years old present civilian democratic government for many reasons. It is not an easy task for the civilian government, which appears again on the political scene after more than a half century, to rebuild the Myanmar economy and society with (a) clean government and clean civil servants (b) capable and efficient government (c) nationwide peace and tranquility (d) development of an ordinary private sector rather than military backed private sector (e) appropriate inflow of ODA and FDI (f) democratic ways of political and economic management (g) acceptable of levels of poverty through the regular progress of peoples' employment and income (h) harmonious progress of democracy and market (i) sustainable, balanced, proportionate and shared economic growth among regions and states, and (j) an internationally acceptable constitution.

Due to the limited space and other limitations, this section would have many weaknesses, especially in terms of detailed explanations with appropriate evidences, facts and data. However, this study attempts to provide suggested development strategies covering political and socioeconomic factors from the qualitative aspects as follows for achieving sustainable peace, stability and development.

First: Choosing tolerable approach strategy for building a democratic society, introducing economic and administrative reforms and obtaining acceptable constitution,

Second: Choosing friendship and a trust building approach strategy to maintain the law & order restoration, peace and stability with the help of army and the various type of ethnic leaders,

Third: Choosing a gentle or well-behaved approach strategy which could gradually minimize the deep-rooted abuse of political power and public sector corruption, as well as building understanding between the National League for Democracy (NLD) and other political parties in order to generate the willingness to build democratic society together.

Fourth: Choosing the DMCG and NBS approach strategy to overcome the problems of weak governance, and obstacles to building a nationwide market friendly political and economic environment as well as to reform the present administrative-oriented peoples' budget approach to a development-oriented peoples' budget approach, and

Fifth: Choosing an 'investing in people approach strategy which directly addresses the progress of employment, income, education, health, skill, knowledge, business ethics, entrepreneurial abilities, appropriate way of thinking, and appropriate cultural values for nationwide capacity building towards sustainable development.

Conclusion:

It would be worth to repeat again in this conclusion that it is important for Myanmar to introduce the above mentioned five development-oriented approach strategies carefully and in a timely way for achieving not only sustainable development, but also for a smooth, peaceful and successful transition to a full-blown democratic society. Moreover, learning lessons from the past, regular self-evaluation of recent economic performance, introducing decentralized reform policy measures, building trust and unity, balancing peace and economic growth are also required. Although this study has limitations and weaknesses, it is hoped that it could provide some hints and broad guidelines for the governments of developing countries in achieving successful political and economic management.

References:

1. Kim Dae-jung. (2001). Democracy and the Market Economy: Two Wheels of Cart, in Iqbal, Farrukh and You, Jong-il (Edit.), *Democracy, Market Economies and Development: An Asian Perspective,* The World Bank, Washington, D.C.
2. Lwin, Maung Maung. (2007). *The Development Management Capability of Government: The Case of Burmese Military Juntas and Economic Transition. Journal of Economics,* Special Issue for the Establishment of Department of Legal Economics, March, Institute of Economics, Kumamoto Gakuen University, Japan.
3. Lwin, Maung Maung. (2016). *The Role of Government and Its Development Management Capability (A Master Key for Political Stability and Sustainable Development of Myanmar), Journal of Economics,* Vol.22 (No.3-4), March, Institute of Economics, Kumamoto Gakuen University, Japan.
4. Meier, G.M. and Baldwin. R.E. (1966). *Economic Development*. Eight printing., John Willey & Sons, Inc.
5. Myint San and Than Than Aung. (2014). *Recent Political and Economic Reform in Myanmar.* Unpublished research paper, presented at the 1st International Conference on Development Alternatives. Myanmar Research Center for Economic Development (MARCED), Yangon Myanmar.
6. Myat Thein. (2004), *Economic Development of Myanmar.* Institute of Southeast Asian Studies, Printed in Singapore.

7. The World Bank. (1991). *World Development Report: The Challenge of Development.* New York. Oxford University Press.
8. The World Bank. (1993). *East Asian Miracle: Economic Growth and Public Policy.* New York. Oxford University Press.
9. The World Bank. (1997). *World Development Report: The State in a Changing World.* New York. Oxford University Press.
10. The World Bank. (1998). *World Development Report: From Plan to Market,* New York. Oxford University Press.

Analysis of Economic Recovery in Myanmar

Dr. Khin Maung Nyunt*[1]

Abstract

The study examines the possible shape of economic recovery in Myanmar from the perspectives of "growth dynamics" highlighting the linkages between microeconomic activities and macroeconomic policy: economic growth and stability. The research finds that a 1% increases in TFP could result in 6.33% increases in per capita GDP. A 1% increases in national savings rate enhances output per worker by 1.02%. The effect of population on per capita GDP is negative indicating a decline in population contributes the growth. The increases in capital per effective worker leads to a substantial increases in the growth rate of GDP. Myanmar economy encounters two phases of decline in production in association with the first and second waves of COVID-19 pandemic. The research finds that Myanmar economy's recovery pattern reveals the bias towards the V-shaped indicating the growth may pick up immediately with the resume of business operations followed by economic recovery within short-time frame. In addition, the post COVID-19 economy will also reflect the "new normal" in which the relatively more use of IT, high-tech and skilled labor force would courage productivity growth and foster substantially the economic growth.

Keywords: Growth; Recession; Recovery; Business Cycles; COVID-19; Exogenous Growth; Distributed Lag Model

I. INTRODUCTION

The study attempts to examine the possible shape of economic recovery in Myanmar from the perspectives of "growth dynamics" highlighting the linkages between microeconomic activities and macroeconomic policy and objectives of economic growth and stability.

The COVID-19 Economic Relief Plan (CERP) in Myanmar is designed to meet the current exigencies in the short term as well as long-term strategic direction. It incorporates the innovative private-sector partnerships, and arrangements with multilateral financial institutions and other development partners.

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* The views expressed are those of the Author and do not necessarily reflect those of Myanmar Development Institute (MDI). November 2020

The research aims to perform forecasting the recovery patter from the COVID-19 pandemic as a part of the policy interest. The research tends to focus the shape of economic recovery applying the dynamics of growth model, in particular, exogenous growth model linked to the

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historical growth patterns of Myanmar for the period 1990-2019. The macroeconomic variables are based on the World Development Indicator (WDI).

The research is organized as follows: Section II discusses the selected literature review with a glance to the studies towards business cycle models and the shape of economic recovery while Section III summarizes the major activities under CERP. Section IV addresses the specification of model and the findings of the study. The policy implications of research and recommendations are discussed in Section V.

II. LITERATURE REVIEW

This session reviews briefly some research studies related to business cycle models and economic recovery analysis closely related to the current research on Myanmar COVID-19.

Diao *et.al*. (2020), investigate the impact of the pandemic and the government measures in economic sectors of Myanmar applying a Social Accounting Matrix (SAM) multiplier approach. The research provides a summary by sector of the expected economic impact in the medium term of the pandemic and the effect of external COVID-19 related shocks on Myanmar's economy. The research provides the estimated loss and the required funds to support for economic recovery

Myo *et. al*. (2020) undertake the research on cash and in-kind transfers for the vulnerable households in response to COVID-19 in Myanmar focusing on four main areas: cash transfers as social assistance instruments for social protection system; transfer choice in decision making among transfer modalities for social protection implementation mechanisms of cash and in-kind transfers in Myanmar; and screening strategy for the identification of vulnerable households. It provides suggestions on effective implementation of the program.

The evidence under some endogenous growth theories exhibits a negative relationship between per capital GDP (PGDP) volatility and growth of GDP. The output loss under the previous economic crisis due to a reduction in productivity and the recovery pattern in the post-crisis have been explored in previous studies. The study of Hamilton (1989) illustrated that the regime switch occurs in the growth rate of the permanent component of output due to the negative shocks, i.e. economic crisis. It has led the persistent output loss. After a recession, output resumes growth but remains on a parallel path below the original trend (i.e. L-shaped recovery) as shown in Figure 1.

Friedman (1993) explained that the output will return back to the original trend during a fast growth recovery phase. Thus (average) 'mean income' can recover the initial income level that is known as mean reversion in income after crisis. In this model the shock has no long-run impact in the presence of mean reversion in income as shown in Figure 2.

Figure 1
Hamilton Recession and Recovery
(Permanent output loss)

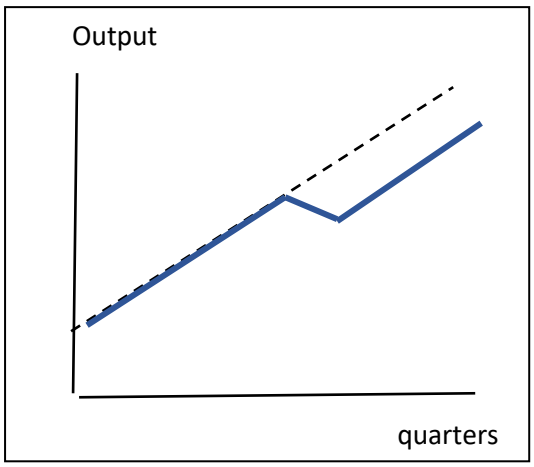
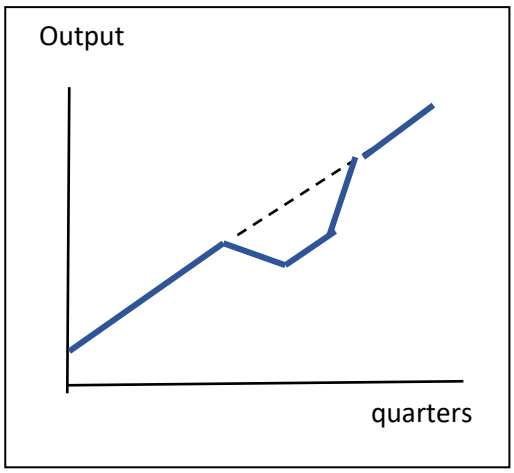


Figure 2
Friedman Recession and Recovery
(Temporary output loss)



Easterly, R. Islam and J.E. Stiglitz (2000) examined the effect of volatility of per capita GDP growth on the GDP growth in their empirical research on dynamics of growth comparing the GDP growth rates of developing countries and OECD countries for two periods 1960-78 and 1979-97. It found that the cost of volatility in per capita GDP growth is higher in the developing countries.

Cerra, V. and Sweta C. S (2007) examine empirically the "growth dynamics" in the context of economic recovery applying the exogenous growth model as follows:

$s\, f(k^*) = (n + d + x)\, k^*$

It asserts that exogenous growth models produce a steady-state relationship between capital per effective worker (k), output per effective worker (f(k)), the savings rate (s), population growth rate (n), depreciation (d), and exogenous technological progress (x). Based on the panel data sets of the World Bank and Penn World Tables the study found that economic contractions are not followed by offsetting fast recoveries. Trend output lost is not regained after recovery and long-term growth is negatively linked to volatility. The study also explored the impact of shocks on convergence in income of individual countries

Sheiner, L. and K. Yilla (2020) analyze the financial injections in the US economy and discuss the policy implications in response to shape of economic recovery based on the government's cash transfers and financial measures. Their analysis apples the five recovery patterns: Z, U, W, L and Nike Swoosh as shown in Figures 3 to 7 respectively as follows.

The Z-Shaped

The recovery patter illustrates that GDP will fall during the pandemic, but then bounces back up above the previous level. In this scenario, demand creates a temporary boom as shown in Figure 3.

The V-Shaped

The economy will lose the production during the pandemic. But it attains the rapid and immediate recovery in less than a year in association with strategic measures and strong consumers spending.

The U-Shaped

As shown in Figure 5, the level of GDP stands at low for a while subject to social distancing policy, but then recovers back to normal slowly.

The W-Shaped

If the response to the pandemic is a first round of openings that is followed by a surge. In another round of business closures due to the second wave of pandemic, the recovery could be W-shape.

The L-Shaped

The pandemic has a permanent effect on GDP mainly due to household ability and willingness to spend; state and local government finances; Businesses bankruptcies and lower investment; and lost human capital. It has been described as the case found under the Great Recession.

The Nike Swoosh-Shaped

In the Nike Swoosh-Shaped the economy starts to return back sharply once restrictions are lifted, but it takes 4 to 6 quarters to get back to pre-pandemic level due to low demand.

Figure 3 Z-Shaped Recovery

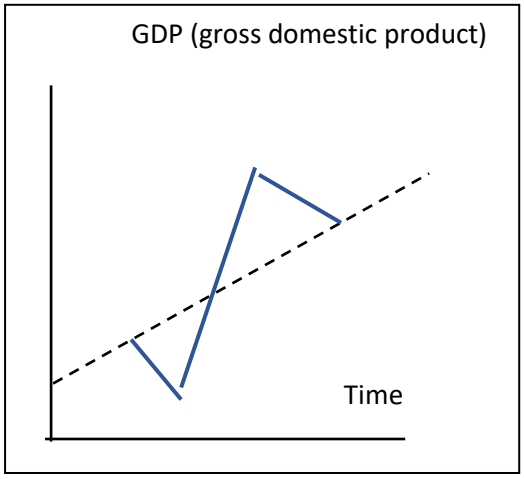


Figure 4 V-Shaped Recovery

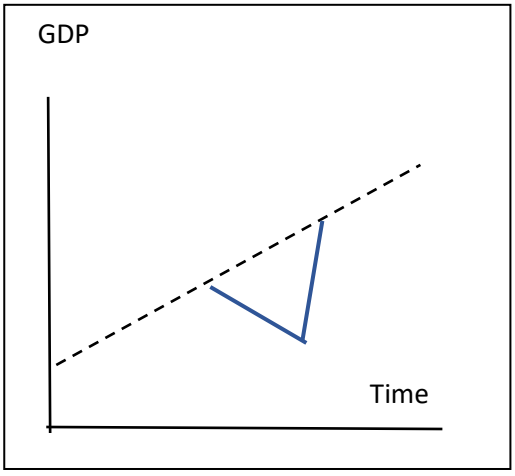


Figure 5 U-Shaped Recovery

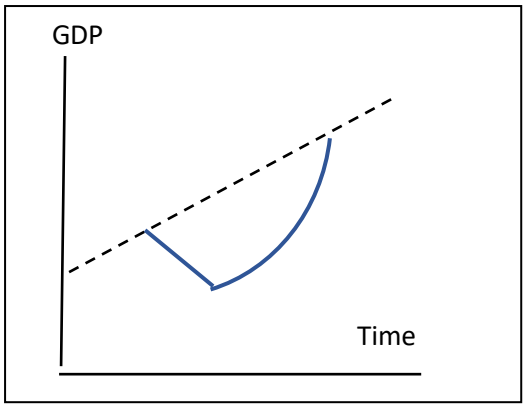


Figure 6 W-Shaped Recovery

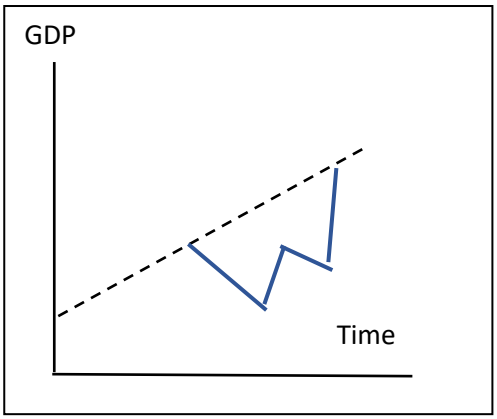
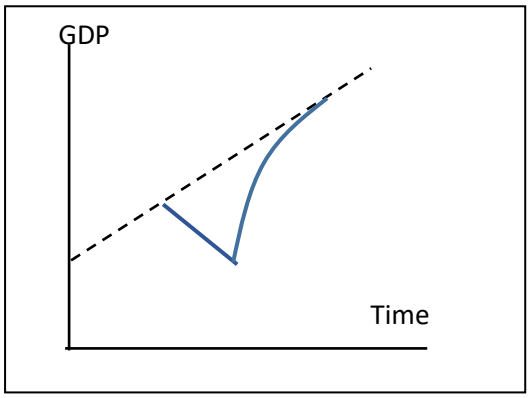


Figure 7 Nike Swoosh-Shaped Recovery



Gosh (2020) discusses the possible four distinct recovery shapes: L,U, W and V. The analysis also highlights the survey results of the 600 CEO interview in the globe conducted by the World Economic Forum. The study points out that 23% of CEOs expect a second contraction in outputs to occur, indicating that economic activity could appear a W-shaped recovery in the U.S. and Japan. In China, 23% of CEOs anticipate a quick V-shaped recovery.

In India, a global management consulting firm-Arthur D. Little (2020) discussed four possible scenarios such as the V, U, W and L-shape recoveries depending on COVID-19 affected economic sectors and available government's stimulus packages.

Foroni *et al.* (2020) attempts to apply the specificity of the Covid-19 period; assess the performance during the financial crisis of 2007-2009; and analyze the recovery pattern. The pandemic-shock shares both similarities and differences with previous crises, such as the above financial crisis. The research evaluates the ability of different forecasting and 'nowcasting' approaches to predict the COVID-19 economic shock and forecast the potential recovery path of the US economy. The results suggest a slow recovery to pre-COVID-19 levels, lasting several years.

III. Summary of CERP Program Activities

The COVID-19 Economic Relief Plan (CERP) in Myanmar is based on Myanmar Emergency Response Fund (ERF), IMF's Rapid Credit Facility (RCF) and Rapid Financing Instrument (RFI), the World Bank's Emergency Response Project and private sector's contributions.

This CERP consists of 7 Goals, 10 Strategies, 36 Action Plans and 78 Actions which Goal can be summarized as follows:

Goal 1: Improve Macroeconomic Environment through Monetary Stimulus

1.1. Provide Monetary Stimulus

Goal 2: Ease the Impact on the Private Sector through Improvements to Investment, Trade and Banking Sectors

2.1. Ease the Impact on Private Sector Firms

2.2. Ease the Strains in the Banking Sector

2.3. Promote Investment

2.4. Promote International Trade

Goal 3: Easing the Impact on Labourers and Workers

3.1. Ease the Impact on Labourers/Workers

Goal 4: Easing the Impact on Households

4.1. Ease the Impact on Households

4.1.1. Electricity Tariff Exemptions

(a) Exempt electricity tariffs for all households (excluding embassies and international organizations) up to 150 units per month

4.1.2. Unconditional Cash and In-Kind Transfer

Goal 5: Promoting Innovative Products and Platforms

5.1. Promote Innovative Products

Goal 6: Healthcare Systems Strengthening

6.1. Promote Healthcare System through Increased Government Spending and Regulatory Reform

Goal 7: Increase Access to COVID-19 Response Financing (Including Contingency Funds)

7.1. Increase the COVID-19 Fund and Contingency Fund

Goals 2 and 3 indicate the strategic support to the most affected business in the priority sectors and job-loss workers while Goals 4 and 6 contribute to the households and critical needs of health sector. The activities under the CERP cover the comprehensive support and financial measures.

IV. ECONOMIC RECOVERY PATTERN IN MYANMAR:

AN APPLICATION OF THE EXOGENOUS GROWTH MODEL

The present research investigates the shape of recovery of Myanmar economy applying a variant of the dynamics of growth models, in particular, exogenous growth model. The specification of the model is generally based on Cerra and Sweda (2007) while the method of estimation in this research differs in many aspects as the objectives of the study differ. In particular, the present research sets the analytical method to analyze the economic recovery in the presence of second wave of pandemic in Myanmar.

Specification of the model is provided as follows:

$$sf(PCGDP) = f(PGCF, POPG, TFP, NSAVG, INF) \quad \ldots\ldots. (1)$$

The model asserts that per capita gross domestic product sf(PGDP) is determined by capita per efficient worker measured as gross fix capital formation per worker (PGCF), technological progress measured as total factor productivity (TFP), the national saving rate (NSAV), population growth rate (POPG) and GDP deflator as a proxy for inflation rate (INF).

It asserts that TFP is direct positive effect on PGDP while a decline in the savings rate will reduce the steady-state level of capital and output per effective worker. If a negative shock reduces capital per effective worker, the marginal product increase. Thus to maintain its steady state level it would lead to a high investment spurt.

The Volatility of Growth Rates and Correlation Analysis

Table 1 exhibits the volatilities of growth rates of GDP and other variables in the model. In contrast the correlation of the growth rate of variables in the exogenous growth model are reported in

Table 2. The research finds that there exists correlation between the growth rates of GDP and the associated variables in the model. In particular, the correlation between the growth rate of PGDG and GDP highlights a policy implication of the study i.e. the robust contribution of PGDP growth rate to the GDP growth rate.

Table 1 Volatility of Growth Rates: 1990q1-2019q4

GDP growth rate	2.7502
Per Capita GDP growth rate	2.6974
Real GDP growth rate	0.8674
Gross fixed Capital Formation growth rate	4.0434
National Savings growth rate	5.6285
Labor Force growth rate	0.2054
Total Factor Productivity growth rate	2.4982
Inflation (GDP Deflator) growth rate	28.9726
Population growth rate	1.5497

Source: Calculation of the author.

Table 2 Correlation between the Growth Rates of PGDP and Growth Rates of Other Variables

	PGDP
PGDP	1
GDP	0.9994
PGCF	0.5401
NSAV	0.4107
LABOR	0.3711
TFP	0.2798
POPG	-0.2681
INF	0.3112

Source: *Ibid.*

The methodology for estimating the total factor productivity (TFP) is based on Nyunt (2018)[2] which applied the production methodology initiated in the work of the European Commission.

$$Q(L,K) = A\, L^{\alpha}\, K^{\beta} + u \qquad \ldots\ldots (2)$$

Equation (2) exhibits the Robert Solow model with technological progress. 'A' denotes trend total factor productivity (TFP) known as Solow's residuals or technological advancement, K indicates potential capital stock, and L shows the employment Q(L,K) indicate gross

[2] The author has re-written it as "Potential Output of Myanmar: Methodology and Results" in the World Bank *Myanmar Economic Monitor: Building Reform Momentum*, June 2019.

domestic product (GDP). The parameters. α and β are the output elasticities of labor and capital respectively.

First the tests for unit root and cointegration are conducted to examine stationary of time series and rank of cointegration using Phillips-Perron unit root test and Johansen test for cointegration.
Second, log-linear model of Equation (2) is estimated and save the residuals of regression as Robert Solow's residuals which referred to as TFP. Third, trend-TFP is estimated decomposing TFP into cycle and trend components applying Kalman filter.

Finally the exogenous growth model of Myanmar economy is constructed as a variant of the exogenous growth model to assess the shape and determinants of economic recovery in Myanmar. The way to construct the model for this analysis seems to be the first in its kind.

ESTIMATION OF THE MODEL AND FINDINGS

Using the model of growth dynamics shown in Equation (1), the research performs forecasts of possible economic recovery shape. The recovery pattern in Myanmar is modelled in this research based on the underling conditions- affected scenarios and financial measure programs of the government and community contribution in social welfare activities that affect the per capita income. The model results are provided in Table 3. The non-linear model of Equation (1) is estimated with the distributed lag model using STATA v15 statistical program. The variables LPGDP, LPGCF, LNSAVR, LTFP and LPOPG refer to the log values of the respective variables. L2.LPOPG refers to 2 lags of LPOPG variable.

The results show that the per capita GDP, national saving rate, technology progress have positive effect on per capital GDP. The capita per effective worker is positively and significantly associated with economic growth in Myanmar. The research finds that a 1% increases in TFP could result in 4.71% increases in per capita GDP. The research finds that a 1% increases in TFP could result in 6.33% increases in per capita GDP. A 1% increases in national savings rate enhances output per worker by 1.02%. The effect of population on per capita GDP is negative indicating a decline in population contributes the growth. The increases in capital per effective worker leads to a substantial increases in the growth rate of GDP.

Figure 7 reports the actual PGDP (Kyat in thousand) and the predicted PGDP for the period 1990q1-2019q4. The actual PGDP-line shown in red depicts the actual value in the absence of pandemic. In contrast, the predicted PGDP shown in blue illustrates the decline of PGDP starting from the 2019q4 to 2020q4 as the COVID-19 effects.

Table 3 The "Growth Dynamics" Model Results

Dependent variable	LPGDP
LGCFP	1.199***
	(25.19)
$LPGCF^2$	-0.0698***
	(-4.04)
$LPGCF^3$	0.00243
	(1.53)
LNSAVR	0.0197
	(1.26)
L2.LPOPG	-0.588***
	(-6.23)
LTFP	0.0633***
	(7.99)
cons	4.364***
	(10.26)
Observations	110
R-squared	0.998

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

* : 90% significance level; **: 95% significant level and *** 99% significance level

The recovery of pandemic may depend on the arrival of required vaccines and medical apparatuses for the public and improvement in health care system and control. However, the recovery of business operations may depend on the release of lock-down restrictions on business under the scrutinized health and security system; and the restrictions on movement of workers. From this perspective, the model results shown in Figure 8 indicates the shape of recovery of Myanmar economy in the form of V-shaped with some components reflecting the W-shaped. In other words, the COVID-19's effects on economy show the double-dips in association with the second wave of pandemic. However, the business pick-up may take place since the business operations may return with the recovery period of 4 to 6 quarters in line with V-shaped scenario.

Figure 7 Actual Per Capita GDP and Predicted PGDP in the COVID-19 Effect

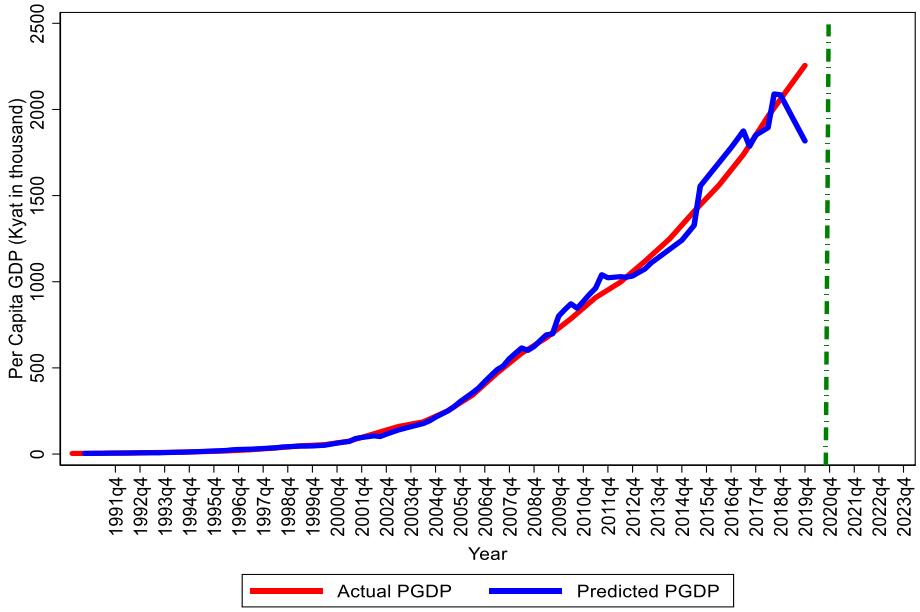
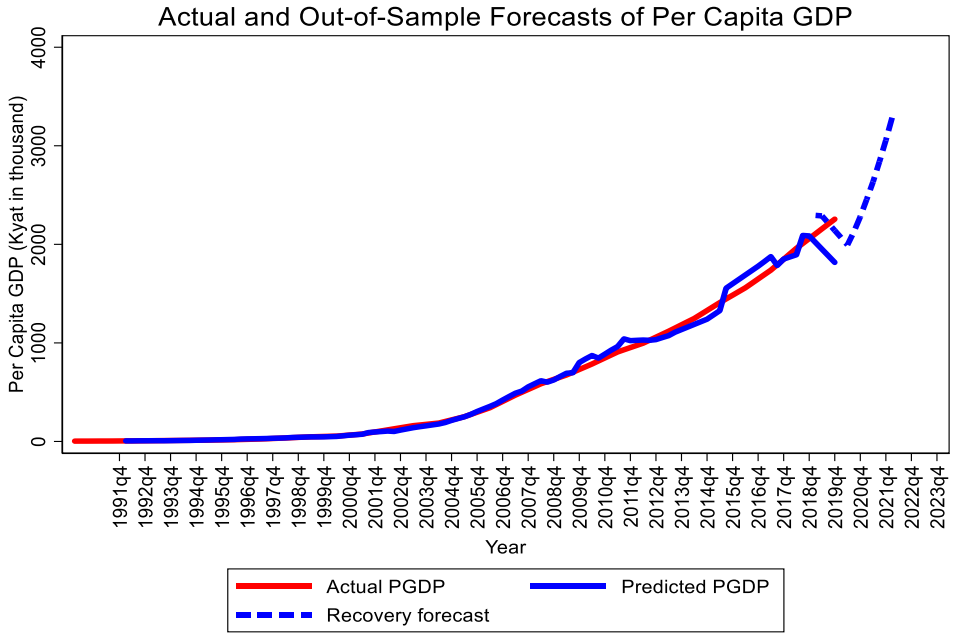


Figure 8 Forecasting the Shape of Economic Recovery in Myanmar



POLICY IMPLICATIONS

The variables in the model of dynamic growth reflect the robust drivers of growth dynamics covering capital per efficient worker, national saving rate, technological advancement and population growth. Studies also show that these functions of variables contribute to the growth convergence in which these are the leverages to make the low income countries' income to converge to those of developed countries. In other words, these variables contribute the narrowing the development gaps.

From this perspectives, income support or cash transfer program can be designed to improve the saving habits of household to support the liquidity in the banking systems from the short-term to medium-term framework. Statistics shows that 20% of population hold the bank accounts in Myanmar. The use of mobile money and wave money are also on the rise in the private sector initiatives. However, improper or inefficient handling of service providers to customers' issues need to be improved through the secure financing and consumer protection framework. For example, Brazil government has opened the back account of eligible households to provide income support in response to the COVID-19 pandemic and it can be regarded as the activities that support the financial inclusion and Public Finance Management (PFM) reform.

There is in need of reform policy to enhance capital per effective worker to enhance productive efficiency in the context of PFM reform. The post-COVID-19 can be viewed strategically as the TFP enhancing policy.

Preparation for the use of IT in almost all areas of economy that can also be formed in the context of Industry-4. The method of transfer should encourage the existing PFM program comprising trenchancy, effectiveness, budget control as an opportunity to improve the macroeconomic stability.

CONCLUSSION AND RECOMMENDAIONS

The research highlights that the possible shapes of recovery in the country are determined by the government strategic policy and effective support in cooperation with the private sector. Thus the monitoring and evaluation activities are crucial.

Use of bank accounts in the government income support or cash transfer program encourages to moderate liquidity in economy compared to the cash-on-hand program.

On population growth, human resource development system and practices contribute to output per worker. In other words, it needs to enhance government investment to increase capital per efficient worker at the start of economic recovery.

Limitations of the study include the use of yearly data available for 2019. The data for 2020 onwards constitutes the out-of-sample forecast of PGDP in this study.

REFERENCES

1. Arthur D. Little (2020). “How India's economy will emerge from the Covid-19 crisis”, 21 May.
2. Available at https://www.consultancy.in/news/3037/
3. Cerra, Valerie and Sweta Chaman Saxena (2007). Growth dynamics: the myth of economic recovery , Monetary and Economic Department , BIS Working Papers No 226, March
4. Diao, Xinshen, N Aung, W. Y. Lwin, P. P. Zone, K. M. Nyunt, and J. Thurlow (2020). Assessing the Impacts of COVID-19 on Myanmar’s Economy A Social Accounting Matrix (SAM) Multiplier Approach, International Food Policy Research Institute (IFPRI).
5. Easterly, William, Roumeen Islam and Joseph E. Stiglitz (2000). “Explaining Growth Volatility”, The World Bank, January.
6. Foroni, Claudia, Massimiliano Marcellino, Dalibor Stevanovic (2020). “Forecasting the COVID-19 recession and recovery: Lessons from the financial crisis”, 29 September. Available at https://www.tandfonline.com/doi/abs/10.1080/13545701.2017.1344775?journalCode=rfec20
7. Friedman, M (1993): “The ‘Plucking Model’ of business fluctuations revisited”, Economic Inquiry, vol 31, pp 171-77, April.
8. Ghosh, Iman (2020). Shapes of Recovery: When Will the Global Economy Bounce Back? September 16. Available at https://www.weforum.org/agenda/2020/09
9. Hamilton, J D (1989): “A new approach to the economic analysis of nonstationary times series and the business cycle”, *Econometrica*, vol 57 (March), pp 357-84.
10. Myo *et al* (2020) *Cash and In Kind Transfers for the Vulnerable Households in Response to COVID-19 in Myanmar*, Myanmar Development Institute.
11. Ministry of Planning, Finance and Industry (2020). Overcoming as One: COVID-19 Economic Relief Plan, the Government of the Republic of the Union of Myanmar, 27 April.
12. Nyunt, Khin Maung (2018). “Labour Productivity, Potential Output and Output Gap: A Useful Tool for Budgetary Surveillance and Fiscal Policy of Myanmar”, *Myanmar Economic Bulletin*, Vol 1, No.1.
13. Sheiner, Louise and Kadija Yilla (2020). “The ABCs of the post-COVID economic recovery”, Series: The Hutchins Center Explains, BROOKINGS, May 4. Available at
14. https://www.brookings.edu/blog/up-front/2020/05/04/the-abcs-of-the-post-covid-economic-recovery/

A Pragmatic Solution for Housing Deficit in Myanmar; Public Rental Housing

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Abstract

As home ownership was popular and given priority in many countries, there was therefore no longer any enthusiasm to further develop the rental housing system. In actual fact, rental housing is not an alternative to home ownership but a complementary factor for fulfilling housing demand. As urbanization increases together with economic development, rental housing becomes the main living pattern in urban areas. The fact that millions of people are living in rental housing and also that more people will need rental housing, should be practically accepted. It has been quite a long time in Myanmar without having new public rental housing scheme for the poor people who live on their daily wages and unable to own a house and other vulnerable citizens. According to the present situation of the country, the government should implement public rental housing schemes in some major cities at the same time as the government is trying to provide the affordable housing, ownership oriented schemes, to the people. In fact, revitalization of public rental housing scheme may become the first step for solving serious housing shortage of major cities.

Key Words : Public Rental Housing (PRH), Low income households; Transit Oriented Development (TOD), Land Readjustment (LR), home ownership.

(1) Overview on the Role of Rental Housing and Global Experiences

As home ownership was popular and given priority in many countries, there was therefore no longer any enthusiasm to further develop the rental housing system. However, in-depth analysis showed that, similar to home ownership, rental housing plays an important role. Most families have to rely on rental housing in one or another period in their lives. Thus, rental housing constitutes a large portion of the housing stock in every society.

If the government focuses only on the implementation of home ownership, a big wave of squatters trespassing and settling down in the areas will be likely to occur. Moreover, the government will be faced with a haphazard housing development process. In reality, rental housing will always be needed for many families and cities. In actual fact, rental housing is not an alternative to home ownership but a complementary factor for fulfilling housing demand.

Most governments consider the volume of housing ownership will rise simultaneously with the economic development of the country. As such, they did not pay adequate attention to upgrading rental housing. In actual fact, according to the experience of the majority of the world's countries, there is no necessary connection or relationship between the nation's development and the rise in its homeownership. The higher rate of home ownership in the

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developing countries as compared to that of the developed countries is mainly due to the low urbanization rate of developing countries and to the fact that the majority of their population residing in rural areas with low housing prices.

Table 1 Country Development Level and Percentage of Rental Housing

Country	Year	Ownership	Renting	Other	Remarks
India	2001	87	11	2	
S-korea	1995	75	25		
Chile	2002	73	20	7	
Myanmar	2014	86	7	7	
Austria	1999	50	50		Developed Countries
Germany	1998	40	60		Developed Countries
Sweden	1998	42	39	19	Developed Countries
UK	2000	69	31		Developed Countries
USA	1997	60	34		Developed Countries
Japan	2013	62	34	4	Developed country

Source: UN -Habitat & 2014 Myanmar Census.

As urbanization increases together with economic development, rental housing becomes the main living pattern in urban areas. The low ownership rate in the tenure of the developed countries is not only due to the rise in urban housing prices but also to the existence of reliable rental housing system. This can be seen in Table 1 where the rental housing rate in developed countries is generally higher than that of the developing countries. It can be also surmised that, with the growth of cities, residency in rental housing has increased.

Table 2 Rental Housing in Selected Cities

Cities/Country	Year	Ownershp	Renting	Other	Remark
Cairo (Egypt)	1996	37	63		
Cape Town (South Africa)	1996	55	44	1	
Seoul (S-korea)	1995	70	30		
Bankok (Thailand)	1998	54	41	5	
Maxico City (Maxico)	2000	62	23	15	
Yangon (Myanmar)	2014	56.7	30.7	12.6	Yangon Region (Urban Area)
Berlin (Germany)	1998	11	89		Developed Countries
Amsterdam (Netherland)	1998	16	74	10	Developed Countries
London(UK)	2000	58	41		Developed Countries
NewYork (USA)	1998	45	55		Developed Countries

Sources: UN-Habitat & 2014 Myanmar Census

The fact that millions of people are living in rental housing and also that more people will need rental housing, should be practically accepted. If each country conducts appropriate researches and surveys, these researches will show that rental housing will never disappear. Together with the development of urban cities, the need for rental housing will increase in some regions or areas. At present, there are only a handful of countries that really accept in, and encourage rental housing. However, rental housing will expand even without encouragement. As such, it can be seen that there are now a few countries that have changed their attitudes towards rental housing. For example, South Africa, Columbia, most of the Latin American countries and the UK are starting to effectively and successfully handle rental housing.

UN-Habitat also mentioned that governments are encouraged to recognize that renting is an essential component of a balanced housing system and avoid policies that favor only homeownership, and consider renting to be one of the various ways to improve housing conditions. In any country, some percent of rental housing should be available for those who cannot afford to buy. In the majority of the countries, to create housing ownership for the low-income population, direct government subsidy, provision of tax relief and housing finance and other measures has been implemented at the costs of billions of money. Although it is true that some households have benefited from such government efforts, the populations with low incomes, or those who cannot own houses or those who are able to access loans but are unable to afford regular household running costs, are still living as tenants. These classes will continue to be dependent on the rental housing system for their existence.

In some countries, the public sector is the major provider of rental housing, while in a few other countries, the private sector is the sole provider. In the developing countries, although the public sector ought to be the sole provider of rental housing, nowadays, in general, the government's role in the provision of rental housing is actually declining gradually. Therefore, the private sector is providing unsystematic and low-grade rental housing in the market. In developing countries, the main source of rental housing is the rental houses provided by individuals in the private sector. Their rental housing is mostly located in places where the majority of low-income earners reside. As a consequence, most of the rental housings are outside of the government' laws, regulations and controls and exist in informal forms.

Table 3 Share Ratio of Rental Housing Provided by Public and Private Sector in Some Selected Countries

country	Public sector	Private sector
Japan	16%	84%
Korea	69.8%	30.2%
Poland	45%	55%
Russia	90%	10%

Source: UN-Habitat and MLIT (Japan)

All over the world, the majority of governments, at a minimum, have to provide rental housing, at least for a specific society. For example, military servicemen, government employees, government personnel, university students and people in need of housing due to natural disasters and other catastrophes, and to low income persons. The amount of investment for the construction of public rental housing for the low-income persons will differ according to the needs and to the extent of government endeavors.

According to the UN-Habitat, in the 1990's the world's public housing was 19.5% of the total housing stock. Since public housings were developed in some cities (e.g.: British cities, cities in the Netherlands and some cities in Latin American countries), the proportion of rental housing was extremely high in the developed countries. The main problem faced by the developing countries concerning rental housing was the inability to fully fulfill the housing needs.

It is necessary to recognize that rental housing development not only fulfills housing needs, but also increases job opportunities, promote the construction sector, upgrade suburban areas and creates supplementary income for poor families. The above benefits of rental housing should clearly be appreciated by the government. Since low income urban residents mostly reside in informal settlements in rental buildings, the success of urban upgrading programs depend on rental housing upgrading activities.

(2) Comparison of Public Rental Housing System between Japan and Myanmar

After independence, Myanmar faced a big housing shortage problem, and it was a fundamental issue for U Nu's government. Given the priority for housing development, U Nu, Prime Minister, was the chairman of the National Housing and Town and Country Board which emphasized on housing development. At that time, public rental housings for low-income persons were constructed in the major cities all over the country. From 1951 to 1956, in 27 cities of 27 districts, about 6,000 units of public rental housings were built for the low-income citizens. This period can be considered as a new era for rental housing provided by the public sector.

However after 10 years, between 1962 and 1972, in Yangon City, to fulfill the requirement of public rental housing, a satellite town, Thu Wun Na with 2,812 rooms was built over 25 square mile land. Since then such housing development activities were wholly stopped for more than 45 years. There were a few government staff housing activities, but public rental housing scheme had vanished entirely. During the last year of U Thein Sein's administration, the union government allotted a particular budget, about 42 billion Kyats to the local governments and under this scheme, about 5,000 rooms were built in 14 Regions and States. Recurrence of public rental housing scheme after 40 years in 2015 was stopped again because NLD government does not continue to do it.

Comparing the history of the public rental housing of Japan and Myanmar, it can be seen that both countries aimed to solve housing shortage of the low-income citizens when it was started 67 years ago simultaneously. The effectiveness of Japan's public rental housing scheme in practice, usefulness and consistent implementation of the scheme made it not only successful but also contribute to the national economy. Myanmar's public rental housing scheme was stopped before it gained momentum. It did not involve the production of rental housing units for low-income persons for an extended period in prioritized projects list of successive governments.

Although the percentage of rental housing in urban areas in Myanmar is more than 20 %, it can be said there is no effective fulfillment by the government, provision by private sector is mostly in informal markets. Although the housings which were constructed 60 years ago with the purpose of public rental housing for low-income households, the majority of household living there now are middle-income households. Unlike Japan, Myanmar's regional governments have not been given any specific responsibility for implementing rental housing. Thus, there is still lack of designated agency for the rental housing schemes for low-income households.

Table 4 Comparison of Implementation Pattern for Public Rental Housing between Japan and Myanmar (as of 2015)

Particulars	Japan	Myanmar
Initial Year	1951	1951
Financial Resource	Construction cost Central Government(½) and Local Government(½) Land Cost Local Government	Union Government
Target Group	Low income people with housing problems [* Income bracket-below 25% 25%to 40% *special exception for elderly]	Not clear (Although in the earlier period, it was meant for the low-income people, but later it was carried out for government officials, political personage and others)
ResponsibleImplementing Body	Local Government	Union Government
System for Selection of Tenants	Qualifications of Tenants Income Criteria ▪ To be in the income Bracket	Low income citizens and government employees (No prescribed specification)

	(*There may be small variations according to the specifications of local governments) (b) Other Criteria - elderly persons - disabled - disaster victims - household with children - single mothers - poor housing condition	
Permitted Stay Duration	The tenant is obliged to vacate the apartment if his income increases above the income bracket.	Family blood line succession
Determination of Rent	Local government set monthly rents each financial year. Rent is calculated based on each occupant's income, location and size of house. (The central government provides grants to local governments to support the reduction of rental fees to the market rate.)	Based on the no profit –no loss principle, rent was calculated on 75 years amortization system Rent per year Rent =1.3% of Bld cost Maintenance cost =3% Bld cost Overhead cost=1% Bld cost Total =5.3% Bld cost
Renovation and Maintenance	Renovation and maintenance are carried out according to specified time-table and schedule. Major repair is also carried out according to schedule and requirement.	There is no marked schedule for regular maintenance.
Management System	All tenants must follow the set rules and regulations	▪ Illegal extension ▪ Encroaching into commonly owned areas ▪ Unlawful transfers and sale
Implementation Period	From 1951 to the present time	1951 - 1962 1972 - 1975 2015 -
Legal Support	The Publicly –Operated Housing Act (1951)	There is no separate law pertaining to public rental housing

Remark; In Myanmar's data, the work carried out for the latest Public Rental Housing projects established in 2015 has not been put under consideration as it was implemented with an unconventional approach.

The aims of construction of public rental housing are to fulfill the requirement of houses by low-income citizens and to be administered by the local government with sustainable support but less intervention of central government. Decentralization helps self-reliance administration for local development succeed quickly in Japan.

Factors of the failure in public rental schemes in Myanmar

After national housing policy had given priority to build public rental housing to fulfill the requirements of the people in the past of 60 years ago, successive governments fail to follow suit it. They didn't consider it as a priority in national housing strategy. Among many facts, failure of 1950 public rental housing program can be considered as an example. Faster deterioration of buildings due to lack of proper maintenance and difficulty of management undermined the project's success. And soaring maintenance cost every year is also loading heavy burden on the government.This discouraged the successive governments to implement this project during their terms fully. In reality, Myanmar had implemented public rental housing scheme at the same time as Japan. However, lack of political will had stopped this kind of scheme in Myanmar early.

In Myanmar public rental housing practice, there is no fixed rules and regulations on the limited frame of income of the tenants and specific criteria. In this regard, tenants become permanent residents. The rental fee was not changed for a long time, and the government is getting little improper revenue which does not cover maintenance and other overhead costs. Unsystematic and ineffective maintenance, management, and actions taken for unlawful cases have been occurring under the successive governments. Public rental houses and its environment have deteriorated along with dilapidated buildings, illegal extension, inappropriate infrastructure, and intrusion of squatters that destroyed the characteristics of the city. Even though the law prohibits the tenants from transferring their occupancy right, most of them transferred or sold it to others illegally. Thus, the summarized key factors for the failure of Myanmar’s public rental housing are

- Lack of systematic beneficiary (tenants) selection system with strict and appropriate criteria
- Fixed rent system
- The weakness of some term and condition such as the non-time frame or no limitation of duration for the stay
- Lack of a planned maintenance system
- Ineffective management system
- Lack of adequate enforcement to unsuited cases

- Insufficient government subsidy and attention
- Policy inconsistency of successive governments in rental housing

To conclude, the essential fact of the failure of Myanmar's public rental housing scheme is the lack of readjustment and improvement in time for the weaknesses of national level scheme mentioned above by successive government.

(3) The Facts of Requirement for Public Rental Housing in Myanmar

(a) Majority of people with low affordability of housing

The optimal affordability level of housing for any household is generally determined about 30%-40% of its household income, in which amount can be able to spend on their housing without effecting other family expenditure such as foods or education or health care costs. According to the survey conducted by JICA in 2012, the average income groups for families in Yangon were estimated as follows;

Monthly Income Range(MMK)	% of Household
▪ < 300,000	77.2
▪ 30,000 – 500,000	16.5
▪ 60,000 – 900,000	2.6
▪ 900,000	3.4

(Department of

According to the table, it can be concluded that, an average, over 3/4 the population of Yangon are families with incomes under 30,000kyats per month. According to the Integrated Housing Living Cost Assessment (IHCS 2010), the population with incomes less than 300,000 spend more than 74% of their incomes on food consumption. According to this survey, the low income families cannot be expected to save enough of their incomes for housing purchase.

(b) Inaccessibility to housing mortgage

In addition, looking at the joint effort by the Department of Urban and Housing Development (DUHD) and Construction and Housing Development Bank (CHDB) to implement a mortgage system to provide housing for the population with moderate incomes, it can be seen that, although an apartment may be low cost due to the DUHD's subsidy on land value and infrastructure expenditure, if the apartment is to be purchased from the CHDB under the mortgage system, only those families with incomes above 300,000kyats will be included in

this system. Thus, for families with incomes fewer than 300,000, housing ownership will be a far-fetched dream.

Table 5 Mortgage Program (CHDB) for Some Affordable Housing Projects Implemented by DUHD (as of 2017)

Mortgage			Payment System			Eligible Monthly Household's Income
Unit price	Interest rate per annum	Maturity	Dawn payment (30%)	Service charge	Monthly reimbursement	
10,000,000 mmk	12%	10 years	3,000,000 mmk	700,000 mmk	100,000 mmk	333,000 mmk
11,500,000 mmk	12%	10 years	3,450,000 mmk	810,000 mmk	115,000 mmk	383,000 mmk
13,400,000 mmk	12%	10 years	4,020,000 mmk	940,000 mmk	135,000 mmk	450,000 mmk

Source: CHDB

Thus, beside from the low affordability to purchase house, inaccessibility to housing mortgage program with quite high interest rate and requirement for large 30% down payment in cash are inevitably pushing them to renter.

(c)High demand for rental housing in urban areas

In the rural areas, the number of tenants was 2.4% of the total population and it was 20.3% in the urban areas. In this scenario, the expansion of urbanization creates more rental housings in urban areas. But about 72% of rented houses were low standard indicating the need to upgrade the quality of rented houses. In some urban areas, the number of government-provided houses, at the almost free rate, was four times more than those in the rural areas. Generally, about 4.4% of people who migrated to the urban areas used to share the house / room with their relatives or close friends. It was one of the indicators of the extreme need for housing in urban areas. Creation of housing for the staffs and workers of industrial development and commercial activities was very small, about 1%.

(d) Severe housing deficit for low income people in major cities .

Not only in Japan, but also in Korea and Singapore, public rental housing system is used to solve the country's housing problem. The huge number of housing short fall, 1-2 million which was estimated by UN-Habitat is a crcial issue for Myanmar. According to 2014 population census, there were about 1 million homeless in Myanmar, and according to 2015 UN-Habitat research paper, about 400,000 and 100,000 informal settlers were in Yangon and Mandalay respectively. This situation was the biggest challenge in the housing development sector. In this situation, few housing provision methods cannot definitely solve this problem; the government must utilize all pragmatic approaches and methods as much as possible.

Among them, Public rental housing is one of the options and is a must for people who cannot afford to own a house.

(e) Incapable of site and services scheme

Site and Service scheme which needs large virgin land areas of urban fringe converting it to residential area, and one of the methods used by the successive governments to provide lands to low-income citizens, is now hard to implement easily. Some of them sold their land because the place was far away from the workplaces, difficult for communication, lack of proper infrastructure and no investment, and they trespassed to other lands again. Nowadays, it is not so easy to acquire new lands for site and service project because the government could not afford the cost for land compensation and infrastructure provision, and also the political risk is too high for land acquisition.

(f) Rent preference for housing

Some families often prefer to stay in rental housing even though they are able to purchase houses with their owned money or to access housing mortgage program. Because some families size becomes smaller, some families want to invest more their money for business, some families tend to stay temporarily and have plans to move other places. Thus, social and family affairs sometimes have considered as a fact for high demand in rental housing.

(4) Obstacles Which Could Be Encountered When Reviving the Provision of Rental Housing to Low Income People by the Public Sector in Myanmar and Ways to Overcome Them

To achieve the success of the public rental housing project in the long term, it should consider the weaknesses and causes of failure of public rental housing in the past 60 years, and the experience and management of Japanese government in this field, placement of tenants, prescribe rules and regulations for management and maintenance and strictly follow these rules. In fact, provision of housing for the poor not only conveys social benefits but also improves human capital and up lifts the economic capacity. Revitalization of public rental housing scheme may become the first step for solving serious housing shortage of major cities.

The challenges for the government policy to provide public rental housing for the low income populations are as follows;

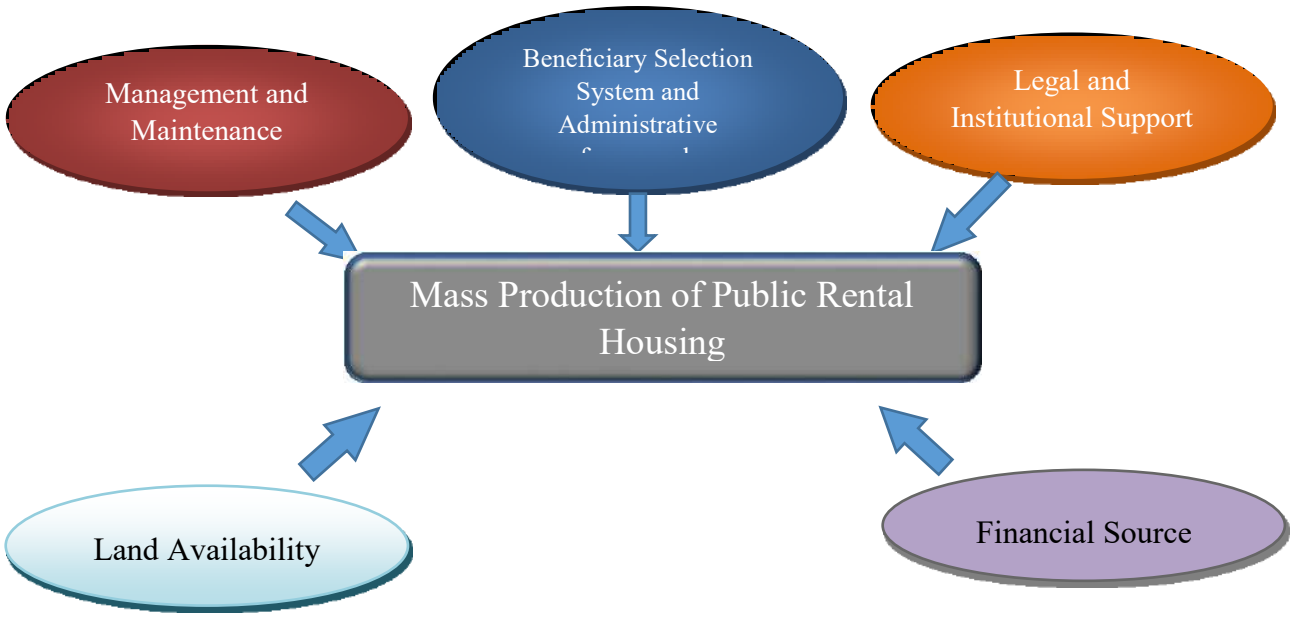
i. How can government obtain the suitable land and the required land area in cities where unused plots are scarce and land prices are high, at reasonable prices to build many public rental housing without resorting to land confiscation as in the past periods?

ii. How will the government manage to obtain adequate financial resources for PRH in this transitional period when development has yet to gain momentum?

iii. Which organization will successfully implement the huge national level PRH projects and how will it proceed to handle this project?

iv. How will it effectively manage and control the present PRH program in order to achieve sustainable development and avoid pervious experiences with PRH.

Figure 1 Encountering Possible Obstacles in Implementing Public Rental Housing



Acquiring Land

Land resource plays a major role in the development of the housing sector. According to international experience, among the factors behind the development of a country, systematic management of land resources is an important one. Efficient and effective use of the country's land resources is the basis for development. In solving the housing problems, the availability of suitable and adequate land area is extremely important. Therefore, in the management of land resources, systematic provision of the required housing land for the vulnerable people and low income urban population is an important responsibility. Ways and means to provide land for housing were continually emerged. Some of the ways for acquiring land for PRH will be proposed.

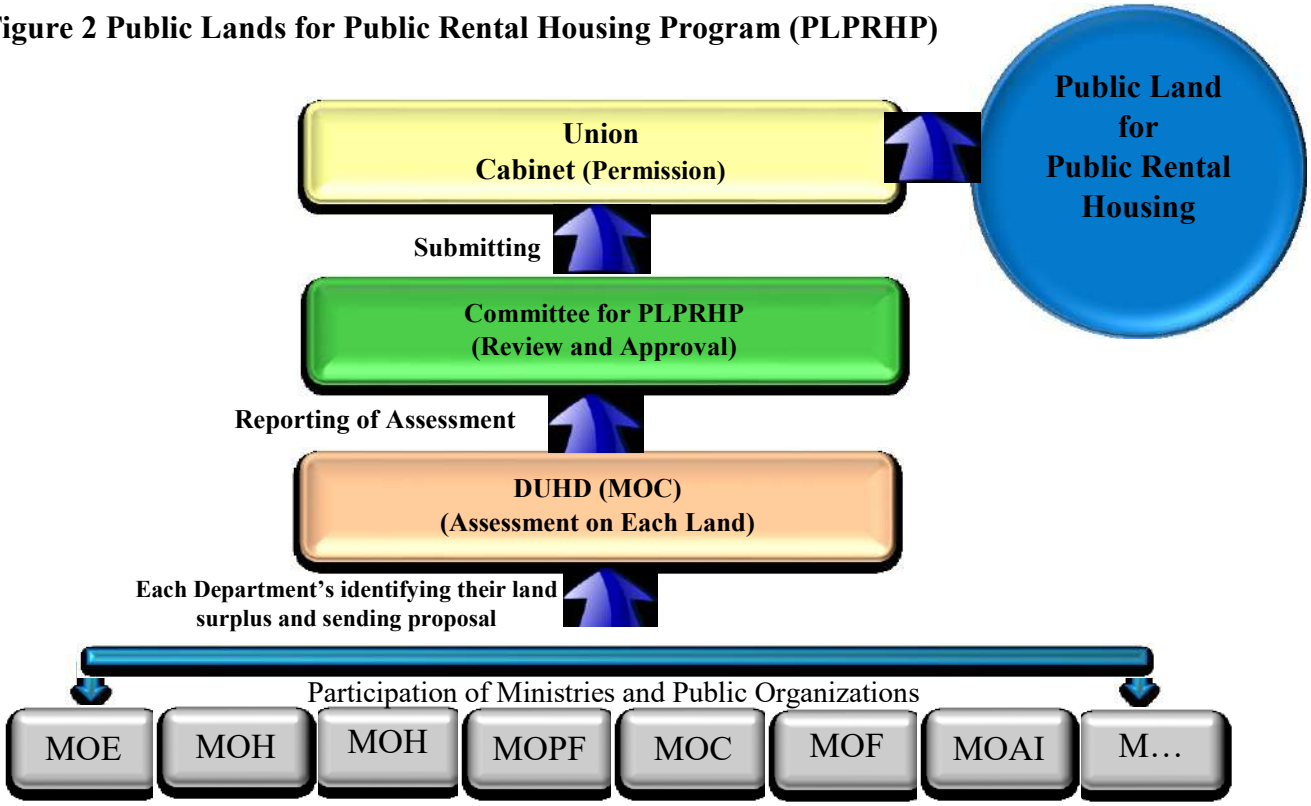
(a) Public Land for Public Rental Housing Program (PLPRHP)

In order to achieve the aim of providing many PRH, regularly each year, obtaining adequate and decent land is an issue that urgently needs to be addressed. As the government is an owner of the major portion of the country's land area, plans should be laid down and implemented to use suitable land from public owned barren unused land or land which has be

used inefficiently for PRH. This plan would do much to support the provision of PRH, while at the same time, turning idle land into efficient land use.

In this regard, strict framework, objective and procedures must first be laid down and the role of stakeholder's departments and organizations must be clearly defined. Systematic data collection of each type of public owned land, scrutiny and assessment are important components of the program. It is highly important to ascertain that the allotted land area is suitable for PRH and not harm a more efficient land use pattern.

Figure 2 Public Lands for Public Rental Housing Program (PLPRHP)



Data on lands owned by different ministries and organizations should be systematically collected in cooperation with all the concerned ministries and organizations. Among these lands, DUHD should make a preliminary selection of land within the PLPRHP committee's frame work based on suitability of the location for future urban development and present land-use pattern. After surveying and assessment on these lands, DUHD will then have to put it up to the PLPRHP committee. The committee will then scrutinize the proposal and submit it to the cabinet for approval to use these lands. In this way, the land delivered by the State for PRH will emerge.

(b) Using the TOD (Transit Oriented Development) Model

Accord with Housing Land Theory, as demand for housing rises, price of land will also rise as investors come to purchase land for housing construction and investment. This increase in demand for land will lead to an increase in land prices. Therefore rise in land prices is the consequence of rise in housing prices. According to Location Theory, developing residential

areas on lands far removed from the metropolitan areas is more appropriate in view of their cheap prices. This activity will help to stabilize housing prices at relatively low levels. Additionally, provision of effective and efficient transportation system can be deemed as a successful housing development strategy.

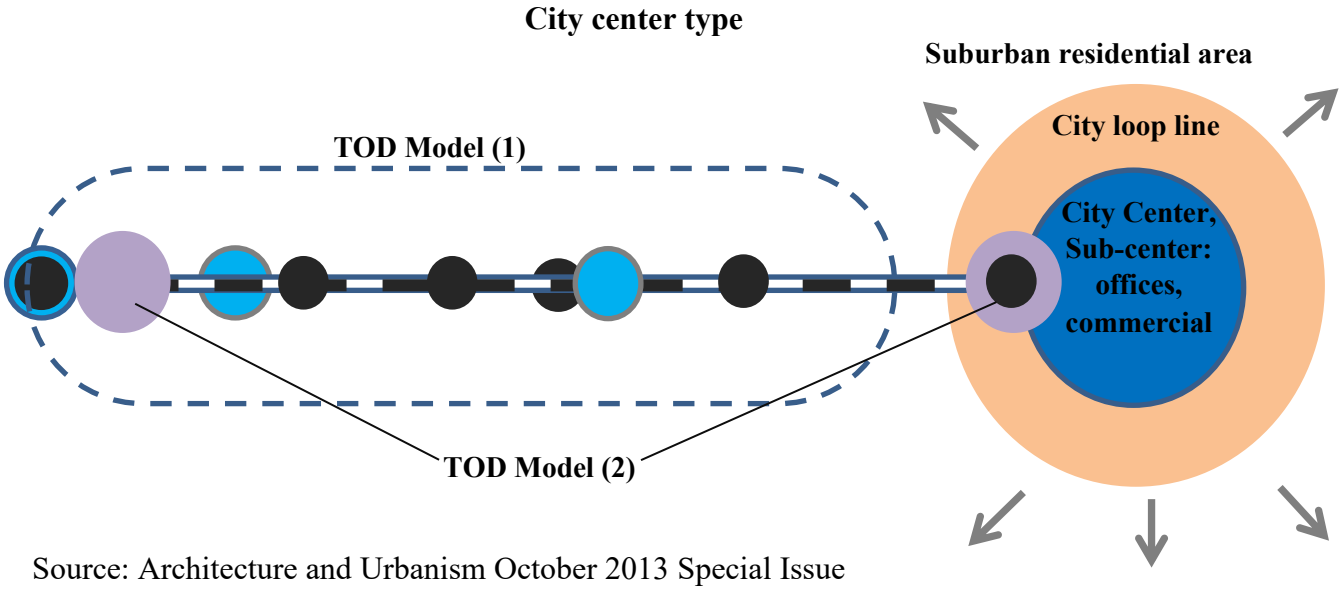
In Japan, TOD has been the most successfully used model for urban expansion and urban development. The main feature of the model is that urban development is carried out based on public transportation systems such as railways.

In general, TOD can be categorized as two models

Model (1) Development synchronized with railway infrastructure construction

Model (2) Hub stations oriented highly integrated complex development.

Figure 3 TOD Models



Source: Architecture and Urbanism October 2013 Special Issue

In general, urban land prices tend to be high, so that governments will find it impossible to buy lands for PRH. Also, locating the PRH in areas far removed from urban locations would make employment opportunities and other living facilities inaccessible, so that people would be unwilling to reside in these areas and the project will be unlikely to succeed. Therefore, from the urban development point of view, establishment of new towns in areas far removed from urban areas with good prospects, the TOD Model (1) is usually applied. Under this model, the urban plan is drawn in conjunction with a modern effective railway transportation network leading to development of new urban areas.

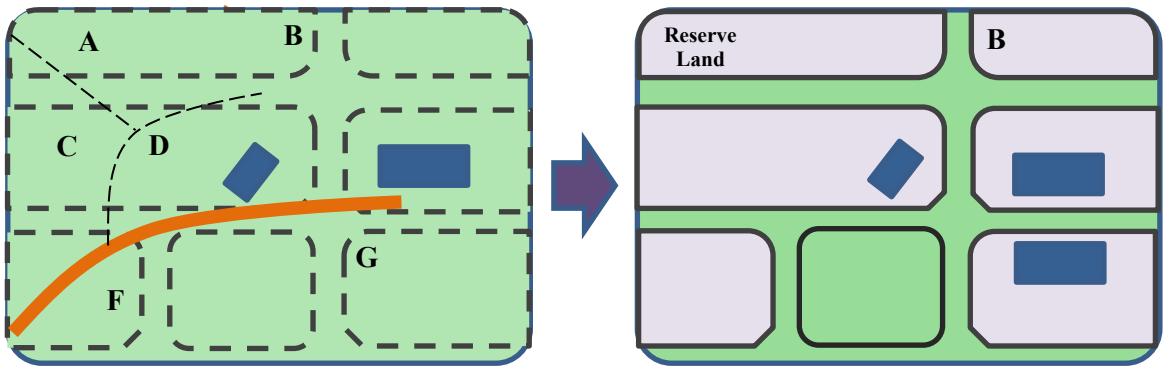
Transits along the railway line and the new town networks are strongly connected, such that the fruits of the developed urban area will be enjoyed by the population. The development gap would thus be narrowed. However challenges can emerge in the implementation of TOD. All along the period of the development of the area, businesses, companies and affluent

people may buy up and amass lands. Together with this, land speculation can occur. In this regard, TOD project together with city planning and land use along the effective areas should be planned ahead. The government should acquire Public Rental Housing land areas in the areas earmarked for TOD before the commencement of the project, while the land price is still low.

(c)Utilization of Land Readjustment (LR Projects)

It was first introduced in Germany in 1903 and is at present, gaining popularity. This LR model can be used in Myanmar to obtain land needed for Public Rental Housing. In general, the LR project is implemented in area with unsystematic land lay-out and which do not have the necessary public facilities. Lay-Out plan is drawn up to turn the land into suitable shapes and to provide public facilities to achieve a better and more developed land area.

Figure 4 Model of LR Project



Before LR Project　　After LR Project

In general, there are 2 type of LR.

(a) Building Plot Supply Type (For suburban areas)

(1) Sprawl Prevention type

(2) New town Development type

(b) Urban Infrastructure Development type(For urbanized areas)

(1) Urban Rehabilitation type

(2) Urban Center Development type

In Japan, 1/3 of urbanized area,1/4 of city planning roads, 1/3 of station plazas 1/2 of urban parks were implemented with LR projects. In Myanmar, the LR project Type (1) can be used to achieve urban development in areas with unsystematic land use and low development level and then excessive land areas can be used for PRH projects.

(d) Urban Redevelopment Projects

As one of the Brownfield Development approaches, demolishing old (or) outdated estates and other old planned projects, in these areas then, some parts of the land are used to rebuild modernized buildings with urban features sharing some areas for Public Rental Housing. Population density can be raised by constructing high-rise buildings with more number of rooms than previous apartment houses, as part of Public Rental Housing scheme. Systematic plan for cooperating with the original residents, making arrangements for temporary accommodations for them and relocating them in new apartments should be carried out. The additional new apartments can be used to fulfill the housing demand for poor families. By providing modern buildings and facilities, this kind of plan can upgrade the quality of olden day real estates and also achieve balanced urban development.

However, some olden days real estates have incidentally come to be located within strategic commercial urban areas. The critical issue here is that, these estates should not be used for Public Rental Housing, but for commercial purposes.

(e) Other methods

As one of the Greenfield Development approaches, Region / State governments can deploy lands in the urban promotion area, cultivated land, pastures and virgin lands within their provinces which are no longer suitable for agricultural use and demarcate them for Public Rental Housing. In addition, for public rental housing, it is possible to get donation from the private sector.

Table 6 Summary of Obstacles in Implementation of Public Rental Housing and its Solutions

	Obstacles to be faced	Some Solutions	Possible (Impact)	Stakeholders Concerned
1	To secure adequate land area	• Public Land for Public Rental Housing Program (PRHP)	The need to give up public / dept owned lands	Region/State Governments + DUHD & All ministries
		• TOD model (Transit Oriented Development)	Need for cooperation with the Myanmar Railways	MOC/MOTC + Region/State Governments
		• Land Redevelopment Projects (LR)		
		• Urban Redevelopment Projects		
		• Greenfield Development Agenda	Reduction of agricultural land	MOAI, MOC
		• Private Land Donation		
2	Financial Resources	• Special Subsidy of the Union Government	- Reduced budgetary allocation for all other sectors	Union Government and Region/State Governments
		• Prioritized budget Allocation of Region / State Governments		
		• Public saving / contribution	-	
		• International / domestic loans	Criticism on loan / interest burden	MCB/MOC/MOPF
		• Grants from international / national organization	-	
3	**Small experience of Region/State government responsible for implementation and supervision with building, big projects (Master plan, Design technical assistances, Construction mange-ment)**	**Support, cooperation and participation of DUHD (MOC), MES and AMA**		
4	To build-successful sustainable and systematically operated Public Rental	• To build a system that can enable correct selection of the target population class for the Public Rental Housing	The need to specify uniform policy and procedures for the	

	Housing estates	• To continually assess and change rental rates	whole country	
5	To build effective management and maintenance system	• To set down strong and specific management procedures and methods • Opening of administration and management offices • To keep an adequate funding system	To give effective aid to the legal procedures against breach of specified laws	GAD, Courts and Police

Financial Resources

In order to undertake annual construction of public rental housing in big cities with high demand for them, annual capital budget should mainly come from the union government. These allocations should also come from the State / Regions annual budgets as priority allocations. Likewise, international and domestic contributions should be welcomed. Also to be invited are grants from international organizations. Also, as of necessity, depending on development and repayment potential, international and domestic loans should be taken to undertake public rental housing development. Myanmar government can introduce the system in a wide range like Japan's experience which was a main financial source of postal saving for housing sector investment in 1950s.

The Main Responsible Organization

In general, the tasks of implementing the public rental housing should be divided in the following way

Union Governments

- Laying down policy / laws.
- Laying down procedures and framework
- Provision of land and financial resources
- Giving technical aid
- Assessment / review and instructions

Region / State Governments

- Search of land resources
- Search for financial resources
- Supervision and implementation of construction works
- Systematic selection of beneficiary/ tenant
- Systematic management and control
- Continuous assessment and control

Therefore, instead of the union government and DUHD taking the main responsibility as in the past periods, in this present day, the union government will be only involved in giving the necessary assistance. The main drivers of public rental housing policy implementation will be the State/Region governments.

Management and Maintenance

Past experience has shown that, estate management and maintenance plays very important role for implementation of public rental housing successfully. Inability to handle breach of specified rules and regulations, inability to change the effective and strict management system in line with the changing situation and times, inability to systematically and effectively maintain the buildings and related infrastructure services resulted the inability to successfully sustain public rental housing in the long run. These experiences made successive governments lose interest in carrying out public rental housing programs.

Therefore, in order to revive and implement public rental housing in the new era, attention should be given to the issue of how maintenance and management system can be fully and successfully handled. The measures that must be unavoidably carried out are as follows;

- Conducting regular survey to realize the resident's characteristics such as household size, their income trends, past period of residency, remaining allowed period for residency, whether actually residing or not and whether following rules or regulations or not, etc.
- Opening of administrative offices in townships / provinces for supervisory purposes. Systematically opening management offices in related estates and assigning duties with specific procedures.
- Conduct assessment for estate's function and operation conditions.
- Analyzing and taking actions for complaints.
- Collection of administration fee for common area and common operation services
- Establishing housing complex self-governing association or resident organization and bring about their participation in estate management.
- Establish of management plan and carry out with outsourcing system
- Construct a financial system of budget for maintenance.
- To establish an adequate funding system for maintenance works

Maintenance

- Inspection should be carried out on the maintenance work by type of work for the whole estate.
- Planned inspection should be carried out with specified method.
  (monthly and annual inspection)
- Professionals should be given the task of conducting periodic inspections
- Required guidelines and procedures should be specified for systematic maintenance operations

- Repairs should be unfailingly carried out according to planned repair system and repair cycle.

Other ways to expand and establish public rental housing

To fulfill the housing demand of the low income population, in addition to the method of direct construction by the government, the following methods used by other countries should also be used as supplements.

a) Reasonably priced private sector owned buildings should either be purchased or hired by the government and utilized as public rental housing

b) Still unutilized government-owned buildings, some affordable housing projects and buildings used for other purposes should be renovated and turned into public rental housing

c) The government should offer encouragement and draw plans in order to obtain the help of the private sector and NGOs

Conclusion

It has been quite a long time in Myanmar without having new public rental housing scheme for the poor people who live on their daily wages and unable to own a house and other vulnerable citizens. This might be an unpractical pursuit that the government is particularly focusing upon mass production of affordable housing which actually cannot be bought even by middle-class persons. It is the right time for the Myanmar government to start a new plan to improve the public rental housing scheme. According to the present situation of the country, the government should implement public rental housing schemes in some major cities at the same time as the government is trying to provide the affordable housing, ownership oriented schemes, to the people.

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Reference

1. DUHD (2014). “Report on Housing Survey of Yangon Region”, Department of Human Settlements and Housing Development Department, Ministry of Construction in cooperation with International Myanmar Research Company Limited.
2. Gurstein, P. C., Patten, K., & Rao, P. (2015). *The Future of Public Housing: Trends in Public Housing Internationally*. School of Community and Regional Planning, University of British Columbia.
3. Ministry of Housing, Communities & Local Government. (2017). “Public Land for Housing Program 2015-20”.
4. Niemietz, K (2012). “Abundance of land, shortage of housing”, IEA Discussion Paper No.38, April 2012, www.iea.org.uk, London
5. Sullivan, A. M. (1986). *Urban Economics*, Richard D. IRWIN, INC, USA
6. The Building Centre of Japan. (2016). *A Quick Look at Housing in Japan*. https://www.bcj.or.jp/form/quicklook02/
7. UN Habitat. (2003). “An Essential Option for the Urban Poor in Developing Countries”, https://www.alnap.org/help-library/rental-housing..
8. UN Habitat. (2017). *Housing Policy & Strategy 2017*, Department of Urban and Housing Development,. Ministry of Construction.
9. UN Habitat. (2011). “A Policy Guide to Rental Housing in Developing Countries”. *Quick Policy Guide Series*, *1*, https://www.researchgate.net/publication/236143991
10. *မြို့ပြနှင့်အိမ်ရာဖွံ့ဖြိုးရေးမူဝါဒနှင့် စီမံကိန်းဆိုင်ရာ အလုပ်ရုံဆွေးနွေးပွဲ(၂၀၁၄)၊ အိမ်ရာမူဝါဒနှင့် ဖွံ့ဖြိုးရေးလုပ်ငန်းများ၊*

The Impact of Yangon Region Infrastructure with respect to Hlaing Thayar Industrial Zone

Khin Khin Oo[1]

Abstract

This study intended to identify the infrastructure development in Yangon Region and its impact on household and industrial enterprise in Haling Thayer Industrial Zone. Survey was conducted by using simple random sampling method. This study overviews infrastructure development of Yangon Region, highlighting transport, electricity, telecommunications, water supply and sewage system. Road transport in Yangon Region still occupies its important role over other transport facilities. Railway infrastructure is encouraged through BOT schemes. Electricity consumption, installed capacity and generation have increased throughout the years. Per-capita electricity consumption remains the lowest in Southeast Asia, because generating plants have limited capacity to meet growing demand. Telecommunications sector is significantly underserved, with exceptionally low penetration rates given the size and market potential. The utilization of telecommunication system is still far behind of any ASEAN country; where about two percent of its population had access to internet and about fifty percent to mobile phone. The overall finding of field survey regarding infrastructure development in Yangon Region recommends the need for increased efficiencies and re-prioritization of investment spending for infrastructure development in electricity. The study summarizes that the existing infrastructure in Yangon Region fall short of the requirement and the potential contribution of infrastructure to economic growth has not been fully realized.

Key Words: Economic Infrastructure, Social Infrastructure, Industrial Zone and Public Investment

1. Introduction

Yangon Region is the most populous region and the largest economic center of Myanmar. Yangon city, the former capital city is now a business and financial hub of Myanmar. Yangon is the gateway for tourists, the logical site for the export-oriented light manufacturing, and it is the key engine in the nation's economic growth. With the population of the city growing fast daily there is a corresponding need for an appropriate infrastructure. The foundations of economic activity such as consumers satisfying their needs, entrepreneurs operating business, along with other numerous economic activities, are all dependent on the key economic foundations called the infrastructure. Infrastructures provide physical facilities such as energy, transportation and communication, and social facilities which are important to the development of an economy.

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Infrastructure issues are primarily related to a country's desire to enter, participate, and excel in international trade, social growth plans to support entrepreneurship, and to improve the quality of life of its citizens. Infrastructure Development may come in many forms and act rather differently in different circumstances. Infrastructure development is an essential wheel in generating economic activities; an adequate supply of infrastructure services is an essential ingredient for productivity and growth. The availability and expansion of an efficient infrastructure network can stimulate new investment in all sectors; engender economic growth, alleviate poverty and in help retaining environmental sustainability, a more efficient and competitive market environment without congestion cost outweighing the benefit. It will generate employment and consumer demand in both the short–term, and long-term, with different infrastructure sectors having different impacts on improving the quality of life and reducing poverty.

Infrastructure can be categorized in three layers. Firstly, as basic infrastructure, including water supply, energy, maintained roads and communication capabilities; secondly, as physical infrastructure including roads, airports, seaports and education for support of special industries or economic projects; and thirdly as, intangible infrastructure, including communication and information technology. If there is no reasonable way to share the increasing prosperity, then the country will never be stable and free of political, economic and social upheavals. Thus, the infrastructure, if it has not already done so, move from the third layer to the first. Most importantly, there must be properly designed and maintained infrastructure that facilitates not only economic growth but also prosperity for all citizens.

This study intended to assess the impact of infrastructure development on household and industrial enterprises confining to Yangon Region.

The method of study is primarily descriptive, using quantitative and qualitative methods. Impact analysis is done using these data augmented with key informant interviews. Qualitative method is emphasized in assessing the infrastructure impact of the study. It is suitable to evaluate the impact of infrastructures, especially when overseeing at field level (in two industrial zones), by means of utilizing survey questionnaires and with two-stage sampling method.

2. Overview of Yangon Region

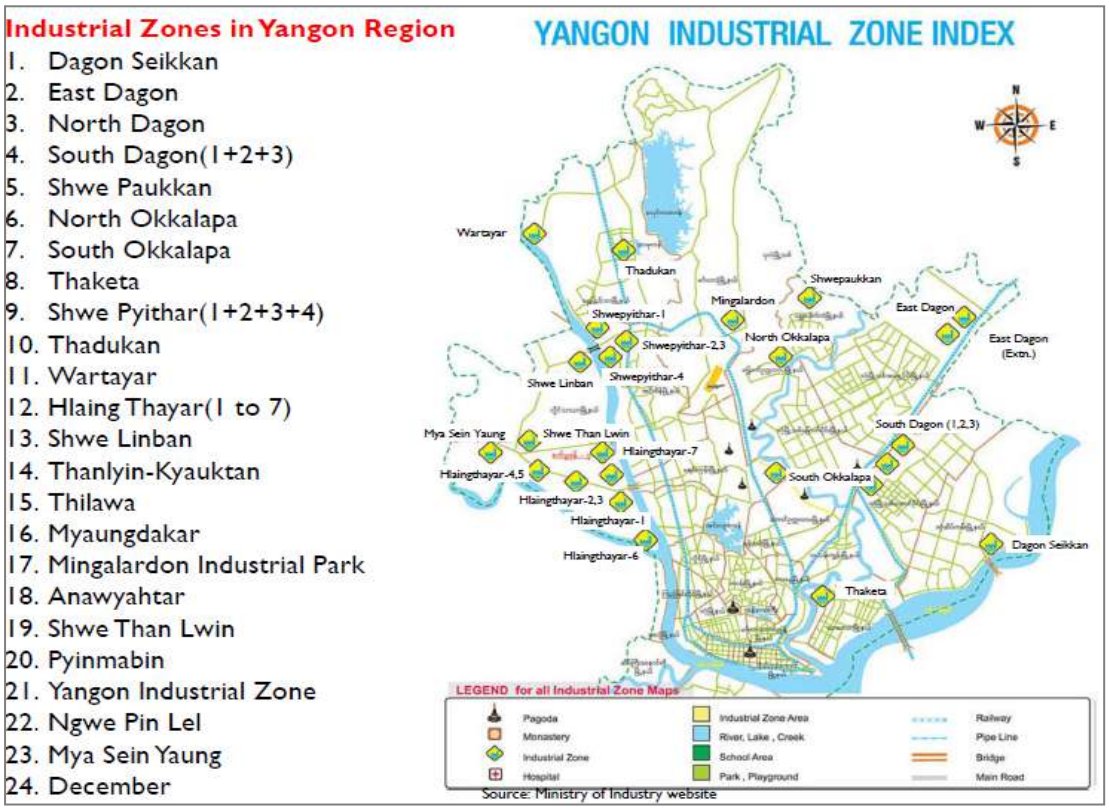
Yangon Region is composed of 45 townships with an area about 1528.57 km^2 and population is 7.36 million as of end of 2014 (Myanmar Population and Housing Census 2014). Among the 45 townships, 33 townships are in Yangon City and are administrated by the Yangon City Development Committee (YCDC) and the remaining 12 townships are under the administration of Yangon Regional Government. Yangon Region was divided into four administrative districts viz. East District, comprising of 14 townships, West District, has 13 townships, South District has 10 townships and North District has 8 townships. The economy of Yangon Region is seen as mostly depending on industrial, trade, and service sectors. Agriculture is seen only in the South District where most townships such as Twantay, Thongwa, Kayan, Kawhmu, Kunchangone, Kyauktan are still concentrating on paddy cultivation and poultry farming.Gross Domestic Product (GDP) of Yangon Region was 12417935.8 Kyat Million in 2014-15, and yearly growth rate is 9.7%. In this, the productive sector's share is 793800.7 Kyat Million, Service, 5472668.1 Kyat Million and trading, 6151467.0 Kyat Million in 2014-15. In Yangon Region, (24) industrial zones were formed in three districts- (10) zones in East district, (12) zones in North district and (2) zones in south districts. This can be seen in the following table and with their location map.

Table (1) Number of Industries by District in Yangon Region

District	2010-11	2011-12	2012-13	2013-14	2014-15
East	1416	1504	1612	1529	1662
South	-	-	2	4	4
North	907	952	1053	1047	1158
West	-	-	-	-	-
Total	**2323**	**2456**	**2667**	**2580**	**2824**

Source: Ministry of Industry http://www.moi.industrial.gov.mm.Retrieved on (25.10.16)

Figure: (1) Industrial Zone in Yangon Region



Source: Ministry of Industry, websitewww.moi.industrial.gov.mm Retrieved on (25.12.16)

3. Infrastructure Development of Yangon Region

(1) Transportation

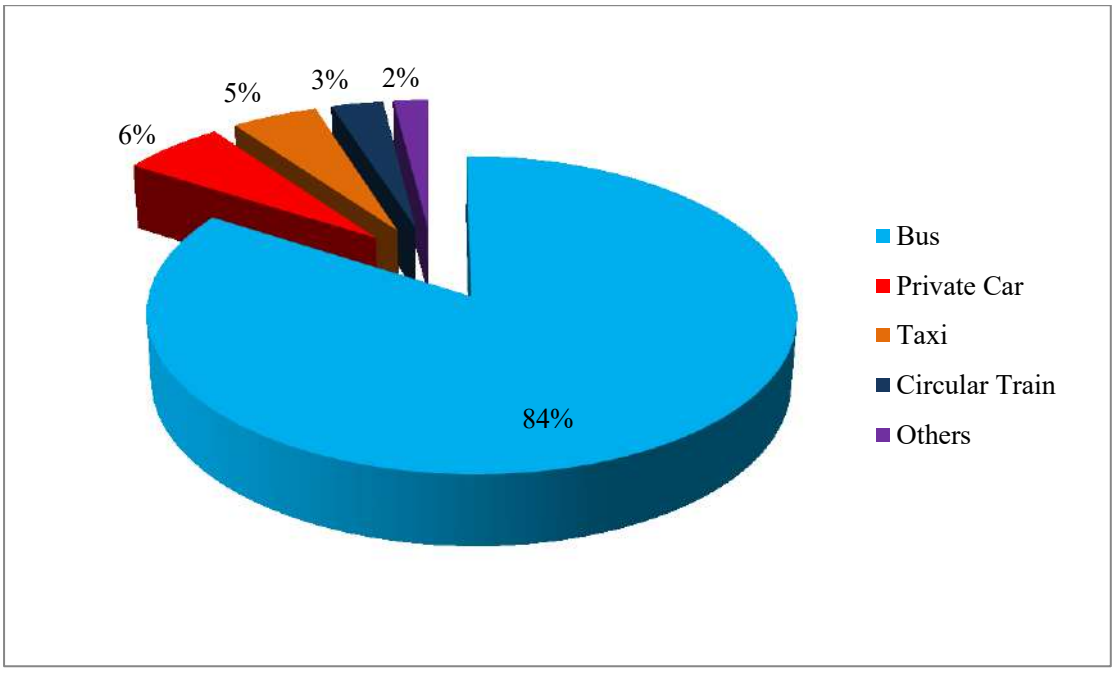
The most important type of transportation in Yangon is road transport such as buses, taxis, circular train private car, and so on. The estimated shares of daily road transportation by mode are shown in following figure. The figure shows that 84% of road transport is by means of buses, 6% by private vehicle, whereas taxi and circular train account for 5% and 3% respectively. Road network is the most dominant infrastructure for Yangon Region transportation. The authority of Yangon Region have been extending and maintaining the road network. New roads and bridges were also constructed. The development of road and bridges in Yangon Region is as shown in the following table.

Table (2) Roads and Bridges in Yangon Region

Type of Road	2005-06	2010-11	1011-12	2012-13	2013-14	2014-15
Bituminous (Miles)	1249.5	1110.2	1097.1	1097.1	1289.7	1380.0
Concrete (Miles)	313.1	354.2	688.5	688.5	696.1	797.3
Gravel (Miles)	7.4	14.5	15.3	19.8	21.7	27.0
Earth Road (Miles)	390.0	272.6	380.2	382.1	910.3	1011.9
Granite (Miles)	217.1	231.6	568.0	586.0	603.0	637.0
Bridge	30.0	59.0	78.0	177.0	204.0	244.0

Source: Department of Highway and Bridges. Ministry of Construction (2016)

Figure (2) Mode of Transport Share in Yangon Region



Source: JICA, The project for the strategic urban development plan of the greater Yangon, April, 2013, p-2.198

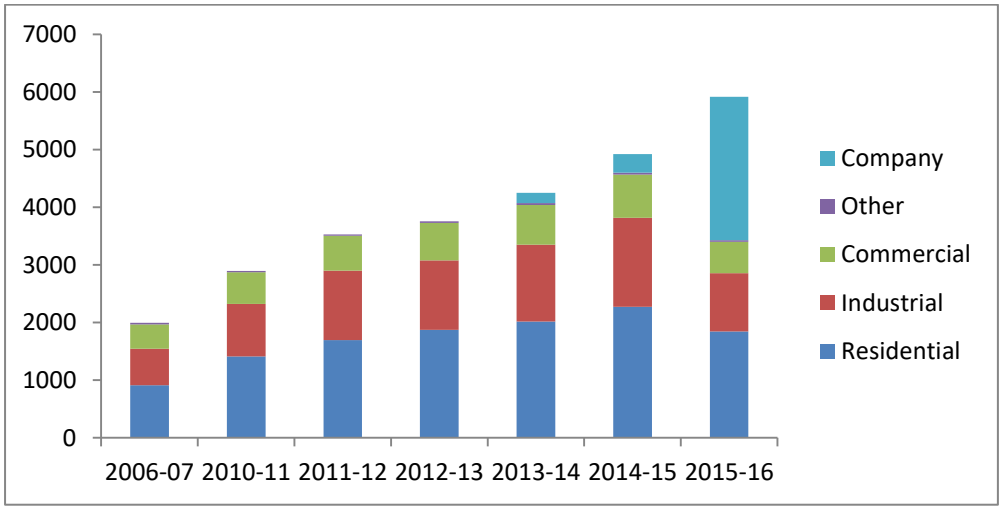
The first railway network in Yangon city was constructed in 1911, linking Mahlwagon with Mingalardon. In 1959, it was extended to Danyingone in order to complete the line as a circular railway, and Yangon Circular Railway was opened accordingly. The other railway

line in Yangon region is Thilawa Branch Line. A part of this line from Toe Kyaung Galay Station to Ok Po Su station was connected in 1993 and the line was extended to Thilawa port in 2003 in order to transport cargo between Thilawa and areas further inland. The Yangon circular railway network has a length of 94.9 kilometers. Although this network has not yet been extended it has been quantitatively upgraded and the number of train trips and the passenger has increases. The Yangon circular railway trips increase massively from 192 in 2005-06 to 80736 trips in 2014-15 and the number of passenger traveling by YCR increases from 32.61 million to 282.68 million during the same period.

(2) Electricity

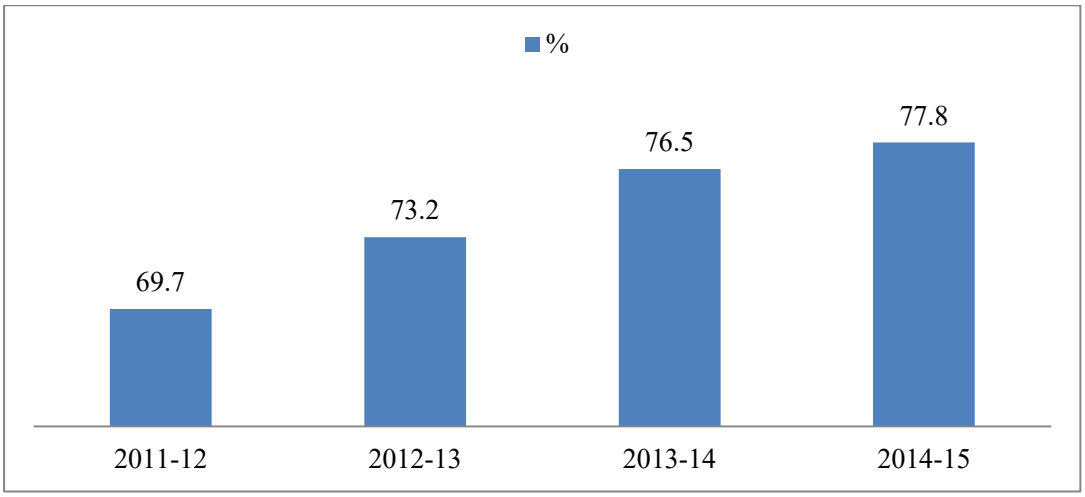
Electricity use in Yangon Region can be classified primarily into three types- such as household, industrial and commercial consumption. Yangon City Electricity Supply Corporation (YESC) is the main distributor of electricity in Yangon Region. Moreover, the three private company; Zeya & Associates Co. Ltd (South Dagon), City Light Power Co. Ltd (East Dagon), Pacific Electric Co., Ltd (Mingalardon, HtawkKyant) are allowed to operate the township electricity distribution services in their respective area since 2015. Almost all electricity distributive in Yangon Region is transferred from the National Grid System transmitted via seven substations. The Development of electric consumption and electrification are shown in the following figure.

Figure (3) Consumption of Electricity by Types of Consumer



Source: Yangon Electricity Supply Cooperation (2016)

Figure (4) Household with Electrification in Yangon Region (in percentage)



Source: Yangon Electricity Supply Corporation (2016)

(3) Communication

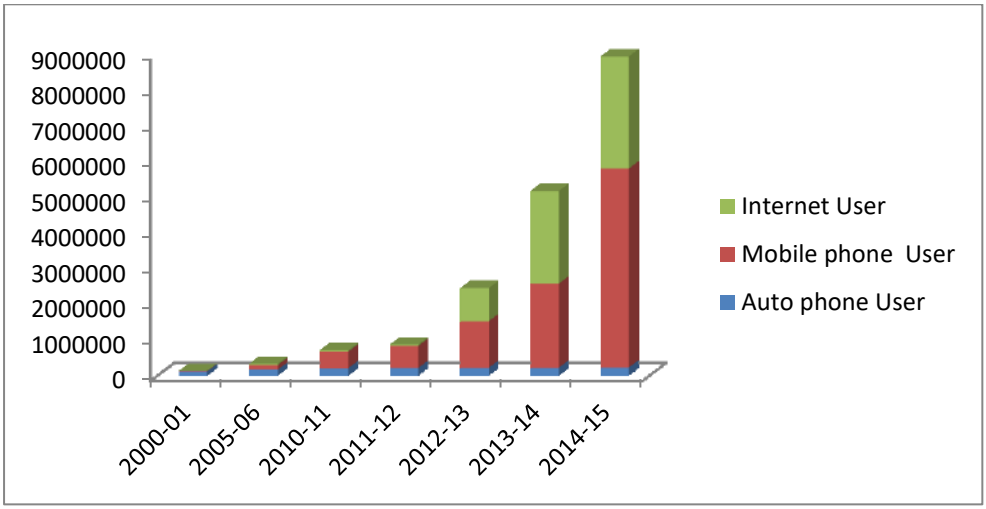
Myanmar lack behind its neighbor in telecommunication facilities services. In order to improve and expand the telecommunication sector, the government of Myanmar enacted the telecommunication law in 2012 and become liberalization of its telecom market. In 2014, the government has awarded lucrative mobile telecom license to Norway's Telenor and the Qatari firm Ooredoo. In 2012, only 28.63% of Yangon population were using phone. Nodaway more than half of population are using mobile phone. The following table and figure shows the increases in telecommunication consumption in Yangon Region.

Table (3) Telecommunication Consumption in Yangon Region

Year	Auto phone User	Mobile phone User	Internet User
2000-01	115425	10370	40
2005-06	162590	128515	37640
2010-11	202271	464164	38720
2011-12	212346	619672	40915
2012-13	214283	1310067	930913
2013-14	218250	2365138	2600298
2014-15	221849	5590071	3136666

Source: Ministry of Post and Telecommunications (2016

Figure (5) Telecommunication Consumption in Yangon Region



Source: Ministry of Post and Telecommunications (2016)

(4) Water supply and Sewage System

Water supply system in Yangon Region has a long history. The history of main development of water supply system in Yangon Region is presented in Table 4

Table (4) History of Main Development of Water Supply System in Yangon Region

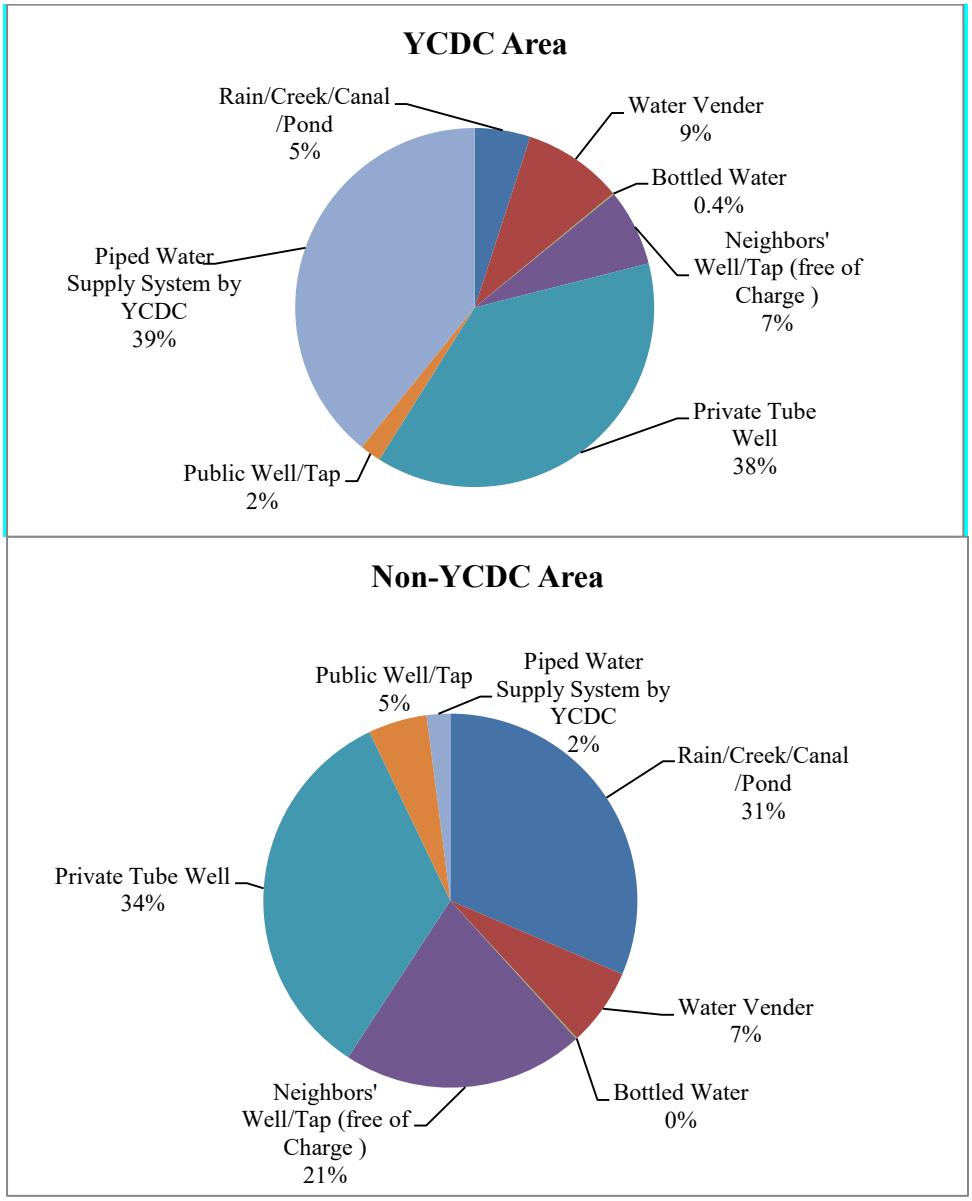
Year	Development History
1879	Commencement of water supply to the size of 35,000 people from the water source of Kandawgyi Lake
1884	Implementation of water supply to the city from Inya lake
1904	Population served was increased to 65000 by completion of Hlawga project (Term-1: completion in 1904, term-2: completion in 1921-24) and Shutdown of intake from Kandawgyi lake and Inya lake.
1906	Construction of Yegu P/S and started transmission of water to Shwedagon S/R and water supply to the whole Yangon city.
1925	Construction of Kokine S/R This reservoir was connected to Shwedagon S/R and supplied water to

	western and eastern area in addition to existing served area in the city.
1940	The capacity of water supply met with the increased demand by completion of Gyobyu R. project.
1965	Construction of Central S/R Accident of water leakage occurred at the time of waterproofing test in 1967. This reservoir has not been used since 1967.
1989	Completion of a part of Phugyi R. project (1973-89) Commencement of water transmission to Hlawga reservoir
1992	Completion of transmission pipe with diameter of 1650mm in Phugyi R. project The water supply amount in Yangon city from Gyobyu, Hlawga, Phugyi and deep wells managed by YCDC increased to 385900m^3/day
2000	Commencement of water supply with amount of 4500m^3/day to Dala TS by completion of Yangonpauk WTP.
2005	Commencement of water supply to nine(9) townships in eastern and southern area by completion of term-1 of the project on Nyaunghnapin WTP with capacity of 204,500m^3/day which has water intake in Ngamoeyeik R.
2009	Commencement of water supply of 9,000m^3/day to South Dagon TS by completion of South Dagon WTP project (Completion of No.1 water treatment plant in 2008 and No. 2, in 2009) Commencement of water supply of 4500m^3/day to industrial complexes and surrounding residence in Hlaing TharYar TS by completion of Thaephyu WTP
2012	Scheduled completion of term-2 with capacity of 204,500m^3/day which is under construction on the project on Nyaunghnapin WTP and plan to supply water to same area as term-1

Source: YCDC (Water Supply System Master Plan, Volume III, March, 2014)

Nowadays in Yangon Region, water supply is classified into two systems, Yangon city Development Committee (YCDC) water supply system and Non-YCDC water supply system. YCDC area covers 33 townships, with the rest township under non YCDC water supply system. Water supply source of YCDC and non YCDC can be seen in the following figure.

Figure (6) Water Source of YCDC and Non-YCDC



Source: Yangon City Development Committee (2016)

In Yangon Region, industrial wastewater is under management of YCDC's Department of Pollution Control and Cleansing. YCDC uses its own discharging standards to monitor factories, especially chemical factories, brewery (alcohol) factories, battery manufacturing and sea food processing factories. Industrial wastewater standard is stipulated and monitoring is carried out according to the standard level. For industrial wastewater that does not satisfy the standards, pretreatment by the factory is compulsory.

Sewage system in Yangon was constructed in the downtown Yangon in 1880s. It was first located in the southern part of the city covering about (9) square kilometers service area. It was expanded into service area that covered the CBD: central business district in 1929. This system has been utilized continuously with periodical modification for approximately (120) years and the present services area covers (8) townships such as Lanmadaw, Latha, Panbedan, Kyauktada, Botahtaung, Puzondaung (partly), Dagon (partly) and Mingalataungnyunt (partly). In the remaining townships, wastewater is treated mainly by on-site systems (septic tank, etc.) and in such cases treatment efficiency is deemed to be low.

4. Public Investment Expenditure on Infrastructure in Yangon Region

Public investment expenditure in infrastructure development for Yangon Region can be seen as shown in Table (5) for fiscal years 2000-2001, and 2005-2006, and consecutively for the fiscal years from 2010-2011 to 2014-2015. The table represents the situation of total infrastructure investment of Yangon Region, observing the economic infrastructure investment and social infrastructure investment. The share of economic and social infrastructure out of total infrastructure investment is also considered. From this, we can roughly see the increase in total infrastructure investment, year by year, where the economic infrastructure investment was higher (showing minimum 74% to maximum 92%), than social infrastructure (showing minimum 8% to 26% the highest), asserting that economic infrastructure investment was considered a priority. It reveals that emphasis has to be considered in spending investment to social infrastructure requirements.

Table (5) Public Investment Expenditure on Infrastructure Development in Yangon Region

Year	Investment on Infrastructure Development (Yangon Region)					Total Infrastructure Investment of Myanmar	Yangon region Infrastructure Investment as % of Total Infrastructure Investment of Myanmar
	Economic Infrastructure		Social Infrastructure		Total Infrastructure (Economic and Social)		
	Kyat in Million	% of Total	Kyat in Million	% of Total	Kyat in million	Kyat in Million	
2000-01	23226.9	84.26	4338	15.74	27564.9	38526.2	71.5
2005-06	21872.1	73.72	7797	26.28	29669.1	319831.3	9.3
2010-11	170263.05	81.74	38040	18.26	208303.0	739674.5	28.2
2011-12	373960.6	89.90	42036	10.10	415996.6	992477.7	41.9
2012-13	919306.4	91.95	80513	8.05	999819.4	1888394	52.9
2013-14	962231	88.25	128159	11.75	1090390.0	1734204	62.9
2014-15	1133737.2	87.61	160367	12.39	1294104.2	1708303	75.8

Source; Administrative Records, YESC, Department of Highways and Bridges, Myanmar Posts and Telecommunications, Department of Basic Education and Department of Higher Education, Health Department, Yangon Region (2016).

Further examination into Yangon Region infrastructure investment, as given in Table (5) shows its percentage composition to total infrastructure investment of Myanmar that ranges from minimum 28% in year 2010-2011 to a maximum of 76% in 2014-2015. The precise reason for the exception showing excess in 2000-2001 or for insufficiency in 2005-2006, is also not known. It is hard to draw conclusion as it is difficult to interpret with no further information adequately shared on the reason. Possible justification can be the appearance of huge investment in hard infrastructure like communication, and relatively in investment in transportation and electricity infrastructures for the years 2010-2011 and 2011-2012.Adequate reason will however make the data analysis more meaningful.

5. Impact Analysis of Infrastructure Development in Yangon Region

Infrastructure development is a vital component in encouraging economic growth. As a commanding public interest, infrastructure can also be characterized as an emerging public trust.

Traditionally, governments have appropriated all aspects of infrastructure, particularly in developing countries. The government of Myanmar is the main provider of infrastructure facilities for the whole nation and the authority of each region is also responsible for infrastructure development of each region. The authority of Yangon Region has continuously constructed and facilitated infrastructure facilities in Yangon Region in order to develop regional infrastructure**.** The impact of infrastructure development on socio-economic life of the people of Yangon Region is analyzed by using the quantitative approach as follow. Based upon survey in Hlaing Tharyar industrial zone, 300 households, of which about 35.7% live in Yangon West district, 29.7% live in Yangon North district, 18.7% live in Yangon East district, and about 16% live in Yangon South district were chosen for sample size. By using two stages sampling method, respondents were constructed as shown in the following.

Table (6) Selected Types of Business in Industries and Respondents Household

Types of Business	Number of Industries	Selected Number of Industries	Total Number of Household in selected industries	Number of Household sampled
Wood-Based production	17	1	230	23
Wearing and garment production	74	3	1105	110
Food production	8	1	87	8
Consumer goods Production	127	3	1092	108
Plastic Goods	3	2	250	25
Electrical goods	2	1	45	5
Chemicals	4	1	30	3
Bean milling &Refining	50	1	85	9
Paper and stationary	16	2	86	9
Total	301	15	3010	300

Source: Hlaing Thayar Industrial Zone (2016)

Two types of questionnaires (one for employee represented households and the other for employer represented business firms) were constructed to evaluate the impact of six types of infrastructure in Yangon Region such as industrial infrastructure, transportation, electricity, communication, water supply and sanitation, and social infrastructure. A simple scoring system was then designed based on the number of the 'Yes' or 'No' column. The score number was then the allocated points and given rankings in accordance with the following scoring system. An infrastructure that scores 80% of 'Yes' and above was ranked as 'Excellent' or 'Very good' impact. A 'Yes' score between 60% to 79% ranked as 'Acceptable' or' Good' and , a 'Yes' score less than 60% is ranked as impact implying 'Unacceptable or Not Good'.

Using the simple scoring system mentioned above, the ranking achieved for impact analyzed are shown by types of infrastructure in Table (7) below.

Table (7) Impact Ranking on Infrastructure Development of Yangon Region

Particular	Infrastructure Type	Yes Percent	Impact Ranking
Households	Industrial	78.2	Good
	Transportation	71.4	Good
	Electricity	42.6	Not Good
	Communication	80.4	Very Good
	Water supply/sanitation	59.1	Not Good
	Social infrastructure	62.3	Good
Employer	Industrial	97.8	Very good
	Transportation/communication	80	Very Good
	Electricity	53	Not Good
	Water supply/sanitation	85	Very Good

Source: Survey Result (2016)

According to the survey's result on households shown in Table 7, the respondents' level of perception on the impact of industrial infrastructure, transportation infrastructure and the social infrastructure ranked 'Good or Acceptable'. About 78% of respondents agreed that establishing industrial zones gave better work-places and more choices of jobs. They also agreed that improvement in industrial infrastructure may lead to development in their socio-economic life such as more earnings, better access to education, health, housing, etc.

Most of the respondents agreed that the road network and transportation system of Yangon Region have improved compared to the previous ten years. However, they also pointed out the problem of traffic congestion not only in downtown but also in the outskirt areas of Yangon Region during the peak hours.

The respondents' level of perception on the development of communication infrastructure and facilities ranked 'Excellent or Very Good'. About 80% of the respondents agreed that they received positive impact, such as faster information, more job opportunities, etc., from the development of telecommunication infrastructure.

The levels of satisfaction on the impact of electricity and water and sanitation infrastructures ranked 'Not Good or Unacceptable'. About half of respondents answered that their access to electricity and water supply were not improved compared to the previous ten years, some even said it has worsened and both the costs became higher in recent years. Although the electric power infrastructure and water supply and sanitation facilities were constructed and expanded by the central government and the authority of Yangon Region, it was not yet developed enough to provide to all its population in Yangon.

As for social infrastructure development, about 62% of respondents agreed that both health and education facilities have improved compared to the previous ten years. Most of them agreed that they have more chances to study technical and vocational education nowadays. Most of the respondents also said they relied on both public and private health care facilities and agreed that they preferred public hospitals and clinics for the low cost reason.

This survey result represented the impact of infrastructure development on households and businesses in Yangon Region, where in most cases; both households and businesses received positive impact from infrastructure development even though it was not assured as much as necessary. The social and economic life of the common household in Yangon Region have improved as an impact of infrastructure development and the business environment of manufacturing industries in Yangon Region have also improved compared to previous ten years. This advancement in both household and business enterprises will lead to an improvement of the economy of Yangon Region and towards enhanced growth and development of the country.

6. Conclusion

Myanmar's infrastructures face unique issues. The first is the need to develop an integrated approach to sector planning, the second issue is the need to increase human resource capacities to allow the prioritization of key development projects based on high-quality economic assessments, and thirdly, it is important to promote private sector participation in the provision of infrastructure and related services. The existing infrastructure stocks and

services requirement and the potential contribution of infrastructure to economic growth have not been fully realized.

Yangon can be considered as an important engine of Myanmar's economic growth. The first reason is although Yangon can no longer be recognized as the capital city of Myanmar; it still remains imperative as a commercial and financial capital of Myanmar. Second, Yangon is the logical site for the export-oriented light manufacturing that is expected to develop. Yangon primacy in financial and commercial services together with its significant port, gives it strong advantages over other Myanmar cities in attracting manufacturing. Since Yangon is the largest city in Myanmar with a population of over seven million, it means that manufactures and other employers will find it easier to recruit workforces with the skills that they need.

According to survey results, although the infrastructure services were not provided sufficiently and efficiently, they have a positive impact on both households and business enterprises and hence economic growth of Yangon Region.

The improvement of transportation and telecommunication network have a positive impact on their daily social economic activities, such as receiving information in a short period of time or in time, more information about workplace and business related information, etc. On the other hand, the survey result however shows that access to electricity in Yangon city is still far below the sufficient level, where common blackout and electricity instability cause the cost of production as well as households' expenditure to escalate.

It is also found that the transportation network in Yangon has improved compared to its previous ten-year situation, although it still faces a serious problem of traffic congestion. In order to tackle down this problem, the authority of Yangon Region together with YCDC, under the guideline of the central government, has built several fly-overs at the busy cross-roads all over Yangon city during the recent years. Recent update informs the public that underpass constructed on high vehicle use road, also known as Pyay road, will soon have effect in earlier 2021.

The overall finding of this situational analysis of the field survey regarding the investment on infrastructure development initiatives in Yangon Region recommends the insight indicating the need for increased efficiencies and reprioritization of government investment spending for infrastructure development of social sector at the national level and so also at the Yangon Region level.

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References

1. Aschauer, David Alan (1989). Is public expenditure productive? *Journal of monetary economics* 23(2): 177-200.
2. ASH Center for Democratic Governance and Innovation,(2012). Yangon's Development Challenges,8,& 10, prepared for Proximity Designs, Myanmar.
3. Asian Development Bank (ADB) (2015). Economics Working Paper Series: Power Sector Development in Myanmar.
4. Canning, D. and M. Fay (1993)." The effect of transportation networks on economic growth," Colombia University Working Paper, New York.
5. Central Statistical Organization. 'Statistical Year Book', various issues.
6. JICA (2014.) The project for improvement of water supply, sewerage and Drainage system in Yangon City.
7. JICA, (2014). "A Strategic urban development plan of Greater Yangon" The Project for the strategic urban development plan of the Greater Yangon. Final Report I.
8. JICA, (2015).Project for Comprehensive Urban Transport Plan of the Greater Yangon (YUTRA) : Data Collection Survey for the Yangon Urban Expressway (YUEX) Project. Final Report.
9. Perkins, Peter, Fedderke,Johann and Luiz, John(2005). "An analysis of economic infrastructure investment in South Africa." South African Journal of Economics 73(2), 211-228.
10. Prud'homme, R, (2004). "Infrastructure and development, Washington DC", paper prepared for the ABCDE (Annual Bank Conference on Development Economics),
11. Todaro, Michael P(2009). Economic Development in the Third World, 10thed. New York: Longman,

12. United Nations (2014). “Urban Infrastructure: Infrastructure and economic growth in Southeast Asia”. UN Report,
13. UN HABITAT, (2011). “The economic role of cities”. The Global Urban Economic Dialogue Series, United Nations Human Settlements Programme.
14. Verbiest, Jean-Pierre, and Findlay, Ronald.(2015). “Myanmar: unlocking the potential-A strategy for high, sustained, and inclusive growth”(437).
15. Wallsten,S.(2000),Telecommunications privatization in Developing Countries: The real effects of exclusivity periods, Satanford niversity, Palo Alto,Calif.
16. Weiss, J.(1999). “Infrastructure and economic development.” African Development Bank Economic Research Papers, (50).
17. World Bank(2004) Reforming infrastructure: privatization, regulation and competition, Washington D,.C
18. Yasuyuki Sawada: (2015).The impacts of infrastructure in development: A Selective Survey, ADB working paper.
19. YCDC (2013). “Yangon 2040: The peaceful and beloved Yangon, a city of Green and Gold, The strategic Urban Development Plan of the Greater Yangon”, YCDC and JICA.
20. Yujiro Hayami,(2009). Social capital, human capital and community mechanism: Toward a conceptual framework for Economists, The journal of Development studies. vol 45.

Determinants of Export Performance in ASEAN 6 Economies

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Abstract

This paper examines the determinants of export performance of the six original ASEAN members (Malaysia, Philippines, Singapore, Thailand, and Brunei) during 2000-2015. Following a linear regression approach, conventional demand and supply factors like inflation, interest rate, GDP and foreign direct investment appeared to be most significant in determining exports performance of these six countries.

Keywords*:* Gross Domestic Product, Interest Rate, Inflation, Exchange Rate, FDI, Export Performance

Introduction

Exports play a central role in the economic development of a country. They contribute to its economic stability, growth and long-term development (Singh, 2014). For that reason, this paper aims to survey what are the key determinants of the economic performance of a country. This performance is determined by both external and internal factors, where the external factors are related to demand-side conditions while the internal factors are associated with supply-side conditions (Fugazza, 2004). According to the Table (1), ASEAN countries' are classified with development level; such as; gross domestic product, per capital income, export value, ASEAN 6; Malaysia, Philippines, Singapore, Thailand, Indonesia and Brunei are same economies in this research study.

South East Asia includes diverse set of countries – in terms of level of development, size, structure and openness to trade. Moreover, during the last three decades, several of these economies have been marked by the pursuit of the implementation of economic reforms to enhance the country's economic performance.

Trade and industrial policies played a direct role in the growth process of these economies. The main change took place during the eighties. Previous to this decade, South East Asian economics, and in particular ASEAN 6, were closed and had focus on import substitution. However, the political and economic changes that took place around 1980 shifted them towards export-oriented growth strategy. For example, a considerable change in trade policies was noticed since 1980s in Indonesia, Malaysia, Philippines, and these reforms were followed by important trade reforms in Thailand in early 1990s

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(Athukorala, 2012). The export-led growth strategy was followed in these economies with major policy incentives for export promotion which resulted in good performance in terms of export growth relative to other countries and regions in the world. Further, membership of international institutions, increasing popularity of bilateral, multilateral, regional and free trade agreements transformed ASEAN economies in terms of trade pattern and integration (Singh 2014). The selected ASEAN economies namely Indonesia, Malaysia, Philippines, Singapore, Thailand and Brunei have shown impressive export performance. To ensure sustainable exports growth, there is a need to identify factors determining the export performance of these economies. Therefore, the present study examines the demand and supply side export determinants of ASEAN 6 economies. The study incorporates the effect of normal exchange rate, production level or gross domestic product and inflation, interest rate, foreign direct investment (FDI) inflows and trade openness along with conventional demand and supply factors. It also investigates inter-country variation in export determinants.

Overview Performance of ASEAN 6 Economies

ASEAN was founded in 1967 with the five member countries, such as Indonesia, Malaysia, the Philippines, Singapore and Thailand. The regional grouping was subsequently extended to include the remaining Southeast Asian countries – Brunei Darussalam in January 1984, Laos and Myanmar in July 1997, and Cambodia in April 1999. The ultimate aim of AFTA is to "increase ASEAN's competitive edge as a production base geared for the world market through trade liberalization and closer economic cooperation" (Cordenillo, 2005). ASEAN 6 economies have experienced high growth in their exports during the recent decades. Singapore and Thailand, experienced double digit exports growth for more than three decades period. Similarly, these economies experienced Singapore and Malaysia are high GDP growth during the 2000-2015.

Table (1) Demography of ASEAN'6

Name of Country	Area (km2)	Pop in 2015 (000 persons)	GDP growth rate (%)		GDP (Current Price US$)		GDP per capita (US$)		Export Value (US$)	
			2000	2015	2000	2015	2000	2015	2000	2015
Brunei	5,765	417	2.8	2.8	3903	12,909	18,155	30,555	3,902	66,600
Indonesia	1,913,578	255,462	3.6	3.6	65403	857,603	780	3,347	65,403	1,502,824
Malaysia	330,290	30,485	8.9	8.9	98,229	294,390	4004.5	9,768	98,229	199,869
Philippine	300,000	101,562	4.3	4.3	39,783	289,503	1,040	2,904	39,783	58,647
Singapore	719	5,535	8.89	8.89	137,804	291,938	23793	58,888	137,804	350,506
Thailand	513,120	68,979	4.5	4.5	69057	395,726	2016	5,814	69,057	214,375
Total	3,063,472	462,440	5.5	5.5	414,179	2,142,069	8298.08	18546	414,178	2,392,821

Source: ASEAN Statistics 2016

Review of Literature Table

(1)

Analytical Framework, Data Sources and Methodology

To examine demand and supply side determinants for ASEAN 6's economies export performance, this study considers variables namely Export value (EX), Exchange Rate (ER), Production level or capacity proxied by Gross Domestic Product (GDP), Foreign Direct Investment (FDI), Inflation (INF) and Interest rate (INEST).

Export Value (EXV)

Export value is mainly depend on international trade or World demand. World demand is considered to be an important determinant in the export function that affects export performance from the demand side. To measure world demand various variables have been used across studies. Following Roy (1991) and Attri & Sahni (2012), the present study uses total world imports as a proxy for world demand. Although the theory assumes that there may be positive or negative impact of world income on the domestic country's exports. But it is generally assumed that growth in foreign demand for a country's exports has positive effect on export performance. Therefore, an increase in world imports is expected to raise external demand for exports.

Exchange Rate (ExR)

Exchange rate is the rate of one nation's currency expressed in term of some different currency. It determines the relative prices of domestic and foreign goods, in addition to the power of external zone participation within the global trade. Aliyu (2011) asserted that

appreciation of trade charge effects in extended imports and reduced export at the same time as depreciation would extend export and discourage import. And, depreciation of exchange rate has a tendency to motive a shift from foreign goods to domestic items.

Inflation (INF)

Inflation and economic growth are like two parallel lines which can never meet. Inflation reduces that value of money and makes it difficult for the common person as a result less is being produced and export.

Interest Rate (INEST)

On the supply side, export performance also depends on relative prices including bank interest rate. In present economy, interest rate is a key consideration of the currency's economic essentials seen upon by the financiers.

Production Level or Gross Domestic Product (GDP)

Production level or gross domestic product is a crucial supply side determinant of exports. The higher level of production generates surplus output which can be sold in foreign markets to earn foreign exchange. The gross domestic product is sum of consumption, investment, government expenditure and net export (export –import), means higher GDP is increase export value. Ezirim, et al (2012) investigated the relationship between exports and economic growth present since export is a component of GDP we may expect a high correlation coefficient between export and GDP.

Foreign Direct Investment (FDI)

FDI is another supply side determinant expected to affect export performance (Anas, 2011). Some studies such as Zhang (2005), Johnsen (2006), Jongwanich (2010), Anas (2011), Sajjad and Mahmood (2014) find positive effects of FDI on exports whereas others like Sharma (2000 & 2003), Majeed and Ahmad (2006), Sahoo, Dash and Mishra (2015) find insignificant, weak or negative impact. Hence, the FDI has contribute towards the export performance.

Model of export demand and supply function

Econometric model of export performance using time series data taking both export demand and supply function at the aggregate level can be specified as -

EXV=f (ExR, INF, INEST, GDP, FDI)……..(1)

Where,

EXV= Annual Export value from ASEAN 6 countries,

ExR = Represent by Price of one country's currency expressed in another country's currency (US$)

INF= Indicates annual average of Inflation rate over the period of analysis

INEST= Indicates annual percentage rate of bank deposit

GDP = Annual Gross Domestic Product in US Dollars

FDI = Measures the annual inflows of foreign direct investment to ASEAN'6 in US Dollars

Data Sources

The above model has been specified using annual data for the period 2000-2015. The time series data on real exports of goods & services, ExR, INF, INEST, GDP, FDI for the chosen countries have been compiled from World Development Indicators (WDI) online database. Data on the other side, FDI was collected from United Nation Conference on Trade and Development (UNCTAD) Statistics.

Methodology

All the variables are measured in terms of growth rates of variables rather than different level. Linear regression model using ordinary least squares method has been adopted for estimation. Durbin-Watson statistic value tests the presence of serial correlation. To check multicollinearity, Variance Inflation Factor (VIF) diagnostic approach has been used.

The results have been interpreted using standardized coefficients. Standardized coefficients are considered as best when variables have different measurement units. The regression equation used for estimation has been specified as:

$$EXV_{it} = \beta_0 - \beta_1 INF_{it} - \beta_2 ExR_{it} - \beta_3 INEST_{it} - TON_{it} + \beta_4 GDP_{it} + \beta_5 FDI_{it} + \mu$$

…….....(.2)

Empirical Results and Discussion

The estimated export functions for ASEAN 6 have high adjusted no autocorrelation, and significant F-statistic value. The demand and supply factors in the export functions are satisfactory with respect to sign. The results of empirical estimation using linear regression model based on ordinary least squares method are discussed below

Table-2: Factors Determining Thailand's Export Performance During 2000-2015

Variables	Coef	t-value	Sig	VIF
INF	0.008385	2.901092	0.0158	8.35E-06
ExR	-0.264139	-1.344933	0.2084	0.038571
INES	0.000865	0.320932	0.7549	7.26000
GDP	1.029007	20.21681	0.0000	0.002591
FDI	-0.139564	-2.263185	0.0471	0.003803
	R^2=0.998253	$\bar{R}_2$=0.997380	DW=2.302694	F=1142.841

The estimation results based on ordinary least square (OLS) method for Thailand's export demand and supply function have been reported in Table-2. The findings indicated that GDP and inflation (INF) had positive and significant impact on Thailand's export value. While foreign direct investment (FDI) had negative and significant impact on exports performance of Thailand. The coefficients of exchange rate is found to be negative and insignificant. The coefficient of INES was found to be positive but was not significant in determining export performance. Majeed and Ahmad (2006) and Beoy (2010) found the GDP, GDP growth rate were positive and highly significant contributed to export. The results also supported the findings of the study done by C Majeed and Ahmad (2006) and Beoy (2010) for GDP.

Table-3: Factors Determining Singapore's Export Performance During 2000-2015

Variables	Coef	t-value	Sig	VIF
INF	0.027475	3.394206	0.0079	6.55E-05
ExR	1.935510	1.468032	0.1762	1.738280
INEST	-0.153209	-2.990074	0.0152	0.002625
GDP	1.002609	2.521126	0.0327	0.158152
FDI	0.161480	1.509798	0.1654	0.011439
	R^2=0.974084	$\bar{R}_2$=0.959687	DW=1.468588	F=67.65574

The factors determining Singapore's export performance from demand and supply side have been exhibited in Table-3. The study found that variables world demand, GDP, INES and INF had positive and significant association with exports. The coefficients of exchange rate (EXRATE) was found to be positive and insignificant when Foreign Direct Investment(FDI) was found to be positive and insignificant The results support the study conducted by Jongwanich (2007 & 2010) for the variables exchange rate (REER) and FDI. Majeed and Ahmad (2006) and Beoy (2010) found the GDP was positive and highly significant contributed to export. The estimated coefficients for India's export demand and supply function have been displayed in Table 4.

Table-4: Factors Determining Indonesia's Export Performance During 2000-2015

Variables	Coef	t-value	Sig	VIF
INF	0.011226	2.019497	0.0742	3.09055
ExR	-0.138117	-0.710622	0.4953	0.037776
INEST	-0.005145	-0.860607	0.4118	3.579090
GDP	0.764484	8.394926	0.0000	0.008293
FDI	0.010580	0.327814	0.7505	0.001042
	R^2=0.975861	$\bar{R}_2$=0.962451	DW=1.468291	F=72.76927

Table (4) finding out suggested Indonesia's export performance that explanatory variables, GDP and (INF) Inflation had positive and significant contribution in exports performance. Although Normal exchange rate (EXRATE) had negative sign but they didn't indicate significant impact on exports. INES and FDI are positive relationship but insignificant results. The results not support the findings of the study done by Attri and Sahni (2012). The present study contradicts the findings of Roy (2002) which found exchange rate and inflation as insignificant variable in determining export performance of Indonesia. The results also contradict the findings of the study conducted by Sharma (2003) for ExR and INEST.

Table-5: Factors Determining Malaysia's Export Performance During 2000-2015

Variables	Coef	t-value	Sig	VIF
INF	0.019977	2.672719	0.0255	5.59E-05
ExR	-0.449271	-1.223591	0.2522	0.134817
INEST	-0.034570	-1.105464	0.2976	0.000978
GDP	0.647854	10.98285	0.0000	0.003480
FDI	-0.157967	-1.056565	0.3182	0.022353
	R^2=0.977779	$\bar{R}_2$=0.965433	DW=1.247754	F=79.20323

According to table (5), the results of regression equation computing factors determining Malaysia's export performance have been shown in Table-5. The variables INF and GDP were found to be positive and significant. Normal exchange rate (ExR), FDI and INEST were found to be negatively but insignificant impacting on exports. The results provide partial support to the study done by Anas (2011) for production capacity while it contradicts for FDI. The results also supported the study conducted by Rahmaddi and Ichihashi (2012) for INF and GDP.

Table-6: Factors Determining Philippine's Export Performance during 2000-2015

Variables	Coef	t-value	Sig	VIF
INF	0.004592	0.587681	0.5712	6.11080
ExR	0.321044	0.525579	0.6119	0.373123
INEST	0.001234	0.087447	0.9322	0.000199
GDP	0.368195	1.834500	0.0998	0.040283
FDI	0.518628	1.103618	0.2984	0.220838
	R^2=0.857229	$\bar{R}_2$=0.777911	DW=2.276528	F=10.80758

The factors behind Philippine's export performance have been reported in Table-6. The findings exhibited that GDP led to increase in Philippine exports. Rest of other variables were not found to be significant. INF, ExR, INEST and FDI was excluded from the model to remove multicollinearity problem.

Table-7: Factors Determining Brunei's Export Performance During 2000-2015

Variables	Coef	t-value	Sig	VIF
INF	0.018947	2.946973	0.0163	4.13E-05
ExR	0.851774	1.715067	0.1205	0.246653
INEST	0.017461	1.108325	0.2965	0.000248
GDP	1.194575	7.183993	0.0001	0.027650
FDI	3.592628	2.099667	0.0652	2.927681
	R^2=0.989965	$\bar{R}_2$=0.984391	DW= 2.355925	F=177.5786

The results of regression equation computing factors determining Brunei's export performance have been shown in Table-7. The findings indicated that variables INF, FDI and GDP had positive and significant impact on Brunei's export value. The coefficient of ExR and INEST were positive but insignificant.

Conclusion

Looking at ASEAN 6 the results indicated variables of INF, INEST, ExR, GDP and FDI played important role in ASEAN 6's export performance. For Thailand, INF and GDP were found to be important factors determining exports. In case of Singapore, variables of INF and GDP had positive and significant impact, INES has also a significant impact, but in this case it is negative. Thus, the results highlight that INF and GDP had positive and significant impact on export and it was the most influential factor in Indonesia. In the Malaysia, GDP and INF had positive impact on Malaysia exports while normal exchange rate, interest rate and foreign direct investment showed negative impact. In Philippines, only GDP was found to be important factors determining exports. Finally, Brunei, variables of INF, GDP and FDI were positive and significant impact on export performance while INEST and ExR were positive and insignificant.

In case of ASEAN 6, variables of INF and GDP had positive and significant impact on export performance and INEST and FDI is negative and positive impact on Export performance statistically significant. For Thailand, Singapore, Indonesia, Malaysia and Brunei variables including GDP and INF were found to be significant factors determining export performance. Therefore, variables of Inflation, interest rate, GDP and foreign direct investment appeared to be most significant in determining exports performance in ASEAN6. Hence, trade openness was identified as a major common determinant of export performance in ASEAN6 economies.

General comments:

The idea of the paper is good, however the methodology presents multiple gaps that require further explanation.

First, it is not clear why the variables chosen by the author are the best ones to understand the problem. There is a list that sounds reasonable. But we don't know (and there is no bibliography) about other variables that can be important, or why this set is the ideal to study.

Second, the linear regression approach present multiple weakness. The problem in this case is that the data presents a panel structure, as it has both a time and a country component. Neglecting the time series dimension of the data makes the analysis very prompt to mistakes regarding spurious regressions. Also regarding this topic, the transformation of the variables was done ad-hoc, and for the reader it is not clear why these transformations were done in this way.

Third, both the dependent and independent variables are taken from the same period. Hence, there is a huge probability of having biased coefficients due to simultaneity of the data. This becomes evident in cases such as GDP. By definition, a part of the GDP is exports, hence exports-→GDP, and if the author claims that GDP-→Exports, then there is simultaneity.

Four, the author claims to have organized the data between supply and demand, but there isn't a clear discussion of what are the main supply variables or what are the main demand variables. The variables are all presented in the same group, without distinction of their origin. More work needs to be done to explain the reader what are the origins of each variable.

Finally, the conclusions do not explain why the variables are important or not. In the conclusions there is a repetition of the variables that were significant in each of the regressions, but there is no effort to imply the causality of the data. There is no reason about the mechanisms by which the chosen variables affect the exports. Without these explanations, it is impossible to explain anything regarding the policies mentioned at the introduction, or how to guarantee the sustainability of the export growth. Hence, the paper promises a very interesting and relevant analysis of the export mechanisms, but at the end it conforms itself to present just associations between variables. Aligned with the previous critic, most of the papers cited in the appendix table used time series to solve the problems mentioned above, and thus the conclusions are more insightful. Hence, paradoxically, the current paper needs more work in identifying what is the contribution of this paper to the literature. In other words, what is new in this paper, that the others haven't done before.

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References

1. Abidin, I. S. Z., Bakar, N. A. A. & Sahlan, R. (2013). The Determinants of Exports between Malaysia and the OIC Member Countries: A Gravity Model Approach, *Procedia Economics and Finance*, Vol.*5*, pp: 12-19.
2. Abdoh and et al. (2016). Macroeconomic Factors That Influence Exchange Rate Fluctuation in ASEAN Countries, International Academic Research Journal of Social Science 2(1) 2016, Page 89-94.
3. Adriana, M. (2016) Factors Determined Foreign Direct Investment in ASEAN -5; Panel Data Analysis, 2000-2012. Proceedings of 62nd The IIER International Conference, Kuala Lumpur, Malaysia, 21st February 2016, ISBN: 978-93-85973-39-0
4. Aliyu, S.R.U. (2011). Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth in Nigeria: An Empirical Investigation, *Research Journal of International Studies*.
5. Anagaw, B. and Demissie, W. (2011/2), "Determinants of Export Performance in Ethiopia: VAR Model Analysis", ABHINAV, National Monthly Refereed Journal of Research in Commerce and Management, Vol 2, Issue No- 5.
6. Anas, T. (2011). Long-run Determinants of Exports: a Co-integration Approach. In: *Artykułprzygotowany i prezentowanyna Development Studies Forum-BAPPENAS,Jakarta*.
7. Arndt, S. W. & A. Huemer (2004). Trade, Production Networks and the Exchange Rate', Working Paper (Lowe Institute of Political Economy, Claremont McKenna College).
8. Athukorala, P. C. (2012). Asian trade flows: Trends, patterns and prospects, *Japan and the World Economy*, 24(2), pp:150-162.
9. Atique, Z. & Ahmad, M. H. (2003). The Supply and Demand for Exports of Pakistan: The Polynomial Distributed Lag Model (PDL) Approach, *The Pakistan Development Review*, 42(4), part II, pp: 961-972.
10. Attri & Sahni (2012). An Empirical Analysis of Determinants of India's Export Performance (1980-2008), *ACADEMICIA*, 2(7), pp:83-95.
11. Darvas, Z. (2012). Real Effective Exchange Rates for 178 Countries: A New Database, *Bruegel Working Paper 2012/06*, 15 March 2012. [Available at: http://bruegel. org/2012/03/real-effective- exchange-rates-for-178-countries-a-new-database/]
12. Dhasmana, A. (2013). Real Effective Exchange Rate and Manufacturing Sector Performance: Evidence from Indian firms, *IIM Bangalore Research Paper* 412.

13. Fugazza, M. (2004). *Export performance and its determinants: supply and demand constraints*. United Nations Publications.
14. Jones, R. W. & Kierzkowski, H. (2001).A Framework for Fragmentation. In: S. W. Arndt & H. Kierzkowski (eds.). *Fragmentation: New Production Patterns in the World Economy.* NewYork: Oxford University Press. pp:17–34.
15. Jongwanich, J. (2007). Determinants of Export Performance in East and Southeast Asia, *ERD Working Paper No.106*, Asian Development Bank. [Available at: http://www. adb.org/publications/determinants-export-performance-east-and-southeast-asia]
16. Jongwanich, J. (2010).Determinants of Export Performance in East and Southeast Asia, *The World Economy*, 33(1), pp: 20-41.
17. Majeed, M. T., Ahmad, E. & Khawaja, M. I. (2006).Determinants of Exports in Developing Countries, *The Pakistan Development Review*, 45(4), pp:1265-1276.
18. Nguyen, B. X. (2010). The determinants of Vietnamese export flows: static and dynamic panel gravity approaches, *International Journal of Economics and Finance*, 2(4), pp: 122-129.
19. Rahmaddi, R. & Ichihashi, M. (2012). How Do Foreign and Domestic Demand Affect Exports Perf ormance? An Econometric Investigation of Indonesia's Exports, *Modern Economy*, 3, pp:32- 42.
20. Rijesh, R. (2010). An Analysis on the Determinants of Indian Machine Tool Exports, *FRIET Working Paper No.133.* [Available at: http://www.freit.org/WorkingPapers/ Papers/ TradePatterns/FREIT133.pdf]
21. Roy, D. K. (1991). Determinants of export performance of Bangladesh, *The Bangladesh Development Studies*, 19 (4), pp: 27-48.
22. Roy, S. S. (2002). The Determinants of India's exports: A Simultaneous Error-Correction Approach, *Research and Information for the Non-Aligned and other Developing Countries (RIS- DP#37/2002).*
23. Sahoo, P., Dash, R. K. & Mishra, P. P. (2015). Determinants of India's Service Exports, *Reviving Growth in India*, P.107.
24. Sahoo, P., Nataraj, G. & Dash, R. K. (2013). *Foreign Direct Investment in South Asia: Policy, Impact, Determinants and Challenges*. Springer Science & Business Media.
25. Singh, K. (2014). A Constant Market Share Analysis of India's Export Performance, *Foreign Trade Review*, 49(2), pp: 141-161

Table 2.1 Summary of Reviewed Studies on export performance and its determinants (2006-2016)

	Authors	Period	Country	Sample size	Title	Factors	Methodology	Research Findings
1	Majeed and Ahmad	2006	75 countries	1970-2004	Determinants of Exports in Developing Countries,	I=FDI and real exchange rate as external factors whereas GDP, GDP growth rate, labour force D=Export	Fixed Effects Model (country specific intercepts	Domestic factors which GDP, GDP growth rate and industrialization were positive and highly significant, labour force, indirect taxes significantly contributed to exports.
2	Jongwanich, J	2007	East and Southeast Asia,	1990-2006	Determinants of Export Performance in East and Southeast Asia,	D=Real exchange rate, world demand and production capacity D=Export	Augmented Dickey-Fuller test, general- to-specific modeling (GSM) & (ADLs).	The value of real exchange rate coefficients implied low contribution in export volume in long run. The export diversification &specialization weakened the link between real exchange rate and export performance.
3	Mohamad	2008	Indonesia, Malaysia, Singapore and Thailand.	2000-2007	Exchange Rates and Export Growth in Asian Economies	I=Exchange Rate, Illiterate, Term of Trade D=Export	Panel Data, Fixed effect Model	Exchange rate misalignment and exchange rate variability have significant impacts on export performance
4	Beoy, T.K	2010	Malaysia	1970-2008	Determinants of Exports in Malaysia	I=FDI, Domestic investment, Real Effective Exchange rate, World GDP D=Export	Econometric Method (VECM)	The export-led growth theory is supported in Malaysia, some of these factors, namely foreign direct investment, domestic investment, world GDP and real effective exchange rate in generating exports in Malaysia.
5	Anas	2011	Indonesia	1978-2008	Long-run Determinants of Exports: a Co-integration Approach.	, I=domestic price index, trading partner's income, production capacity and FDI D=Export Performance (Export price index	Panel data Co-Integration Test	Export price, production capacity & FDI were found to be significant. In summary, price had positive &income had negative impact on agriculture exports.
6	Fang et al	2011	Eight Asian countries	Before & After 1979:-1997:6 and 1997:7-2002:10,	Exchange Rates, Exchange Risk, and Asian Export Revenue	I=Exchange Rate, D= Export revenue	GARCH-M model	Exchange risk has a dominating negative impact for the appreciating Japanese yen. Depreciation has no impact in Malaysia and Singapore, and exchange risk has a negative effect in Singapore.
7	Rahutami	2011	ASEAN countries	2001-2011	Real Exchange Rate Volatility and International Trade: ASEAN Experience towards ASEAN Economic Community1	I=Exchange Rate, Home Income, foreign income, Term of Trade D=Export, Import	Panel regression method	Exchange rate volatility has no statistically significant on the export and import of AMSs. The home income also has a positively significant effect on import value, but the real exchange rate has a negative significant effect.
8	Rahmaddi, R. & Ichihashi, M.	2012	Indonesia	1971-2007	How Do Foreign and Domestic Demand Affect Exports Performance? An Econometric Investigation of Indonesia's Exports, *Modern*	I=DD; relative price of exports, world income, SS= real income D=Export	Econometric Method	All the variables were statistically significant over the period. Relative price & world income were significant in determining demand for Indonesian exports.

					Economy			
9	Kumari	2015	East Asia, Southeast Asia and South Asia	1980-2012	Determinants of Exports in Major Asian Economics	I=World Real Demand, Effective Exchange Rate, D=Export Performance, FDI	OLS	The study also incorporates the effect of foreign direct investment.
10	Mahotra, N & Kumari, D	2015	3 sub-regions (East Asia, Southeast Asia and South Asia. East Asia)	1980-2012	Determinants of Exports in Major Asian Economies	I= World Real Demand, Effective Exchange Rate, FDI D= Export Performance	OLS	World demand, real effective exchange rate, production level or capacity and relative prices, the study also incorporates the effect of foreign direct investment (FDI) inflows and trade openness on exports performance.
11	Lam	2016	ASEAN-4 (Indonesia, Malaysia, Thailand and the Philippines)	1970-2006	An Empirical Analysis of the ASEAN-4's Causality between Exports and Output Growth	I=GDP D=Export	Econometric Method	Indonesia: The increase of exports is only an effect of the country's expansion of output; Malaysia and Thailand: LR between exports and output growth; The GDP is inverse relationship on Export in Philippines.

An Analysis of the Myanmar Economy under ASEAN Economic Integration: A Revealed Comparative Advantage Approach

Sai Seng Sai[1]

Abstract

In 1992, Myanmar joined the Greater Mekong Sub-region (GMS) and other regional organizations such as the Association of Southeast Asian Nations (ASEAN) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) in 1997. After acceding to ASEAN member, Myanmar undertook many regional integration processes. Under the ASEAN scheme, Myanmar liberalized trade and reduced tariff rates along with ASEAN members. By joining the sub-regional organizations, Myanmar has improved its trade relations with ASEAN members and neighboring countries. This research attempts to address the questions of how regional economic integration of ASEAN and neighboring countries affects the export pattern of Myanmar's economy, and in the regional integration process, how Myanmar can enhance the market to compete not only with the ASEAN latecomers such as the Cambodia, Laos, and Viet Nam (CLV) but also the advanced members of ASEAN in the future. This research generally examines the stage and trend of Cambodia, Laos, Viet Nam, and Myanmar (CLMV), and more specifically focuses on the economy of Myanmar in the higher ranking of their Revealed Comparative Advantage (RCA) in their industrial sectors. This study compares the change in export competitiveness and comparative advantage of Myanmar with the ASEAN members and examines the RCA's variation on the strength and weakness of their export structures/patterns.

Keywords: ASEAN, Economic Integration, CLMV, Revealed Comparative Advantage (RCA)

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1. Introduction

Under the globalization era, regional economic integration groups have been rapidly emerging all over the world. Many countries that had closed-door economies began to open up their markets to global partners. These countries realized that they would lose their shares in the global market without participation in the global economy. Hence, free trade became the main engine in the process of economic regionalization/globalization (Otsubo and Umemura 2003, 126–49). The growth of regional organizations such as the North American Free Trade Agreement (NAFTA), the European Union (EU), and the ascension of China to the World Trade Organization (WTO) were the main engines of growing regionalism in Asia. As a result, such changes caused the Association of Southeast Asian Nations (ASEAN) to be united. These changes were the reasons for Asian countries to grow closer to each other. Among the regional trading groups, East Asia has been growing intraregional trade and establishing more cooperation in regional trading agreements in the longer term (Otsubo and Umemura 1998, 4–5; Ezaki and Nguyen 2008, 2).

As regional integration processes have gained momentum everywhere, ASEAN has also come to be a regional organization. On August 8, 1967, ASEAN was formed by Indonesia, Malaysia, The Philippines, Singapore, and Thailand. Since then, membership has expanded to include Brunei Darussalam, Myanmar, Cambodia, Laos- and Viet Nam. ASEAN is now composed of ten member countries (ASEAN 2002). Despite ASEAN's formation in 1967, the cooperation and integration processes are still below regional organizations such as the EU and NAFTA. Until 1992, the regional integration process of ASEAN focused particularly on political affairs rather than economic integration. Therefore, the ASEAN leaders decided to establish greater and deeper regional cooperation in economic and social issues such as goods, services, industry, infrastructure, finance, information technology, tourism, food, agriculture, forestry, etc. (ASEAN 2002).

In 1992, ASEAN leaders signed an agreement to implement economic cooperation within the region. This was called the ASEAN Free Trade Agreement (AFTA) and was successfully implemented in 1993. The agreement was to reduce tariff rates to the 0-5% level by 2002 for ASEAN-6[2] and 2010 for ASEAN-4[3]. The first objective of reducing the tariff to 0-5% by ASEAN members has become a reality. ASEAN members have already reduced the tariff rate to zero in 2010 for ASEAN-6 and accomplished for CLMV in 2015 with some flexibility. As the development gap between ASEAN latecomers and the elder ASEAN is different, new members' time frame had been flexible (ASEAN 2002).

Moreover, ASEAN cooperation has also been extended outside of the region. The other regional organizations with close links with ASEAN are the Asia-Pacific Economic Cooperation (APEC), the Asian-Europe Meeting (ASEM), and the ASEAN+3[4]. Since 2001, ASEAN has cooperated in the economic area and areas such as services, industry,

[2] Brunei Darussalam, Indonesia, Malaysia, The Philippines, Singapore, and Thailand
[3] Cambodia, Laos, Myanmar and Viet Nam
[4] China, Japan and South Korea

infrastructure, finance, information technology, and tourism. It is also involved in the Mekong Basin Development, food, agriculture, forestry, etc. Based on this cooperation, the ASEAN vision 2020 was adopted and launched. It took more than three-decade for ASEAN to achieve its regional political organization. At that time, ASEAN's goal was to maintain political stability and security within the region. During the first three decades, economic cooperation between the ASEAN countries was neglected. After 1992, ASEAN has been trying to cooperate not only within but also outside of its region. Besides, ASEAN members have also extended their regional arrangements with the outside of the region. Hence, participation in regional economic integration is indispensable for every country. Currently, every country is a group or member of the Regional Trading Agreement (RTA) due to the regional integration process gaining momentum. Since then, the movement of goods, services, and labor has been freed up, and countries have concentrated on goods they have in abundance. Therefore, free trade allows countries to specialize in goods and services in which they have a comparative advantage under the global market.

The objective of the study is to draw policy implications for Myanmar under regional economic integration. This research attempts to address the questions of how regional economic integration of ASEAN and its neighboring countries affects the export pattern of Myanmar's economy, and in the regional integration process, how Myanmar can enhance the market to compete not only with the ASEAN latecomers such as the Cambodia, Laos, and Viet Nam (CLV) but also the advanced members of ASEAN in the future. To implement Myanmar's initiatives for industrial promotion, selected ASEAN members are surveyed comparatively. This research generally examines the stage and trend of Cambodia, Laos, Viet Nam, and Myanmar (CLMV), and more specifically focuses on the economy of Myanmar in the higher ranking of their Revealed Comparative Advantage (RCA) in their industrial sectors. This study compares the change in export competitiveness and comparative advantage of Myanmar with the ASEAN members and examines the RCA's variation on the strength and the weakness of their export structures/patterns. Firstly, Myanmar's effort to implement its regional trade agreements will be reviewed. Then, the case study from the area's comparative studies and Myanmar's current policy initiatives are then combined into a set of policy packages. Finally, these policy scenarios are formulated using the RCA approach.

Hence, this study intends to draw **"*Policy Implication for Myanmar*"** using the Revealed Comparative Advantage (RCA) approach under the regional integration process. This paper is organized as follows. Section 2 reviews the background of Myanmar's economic integration in ASEAN. Section 3 presents the research methodology and the Revealed Comparative Advantage (RCA) model of the CLMV. Section 4 discusses the results, and Section 5 concludes the study and formulates policy implications for Myanmar.

2. Background of Myanmar's Economic Integration in ASEAN

As globalization had been accelerating in the 1980s, many countries had changed their policy to participate in regional integration. Under these circumstances, Myanmar opened its market to the world in 1988 under the State Peace and Development Council (SPDC) regime. After

the 1980s, just as regional integration has had influence everywhere, Myanmar entered into the international political economy. In 1989, Myanmar introduced a market-oriented economic system. To attract Foreign Direct Investment (FDI), Myanmar liberalized domestic and external trade, inviting foreign participants and promulgating economic policies and reforms. In 1992, Myanmar joined the Greater Mekong Sub-region (GMS) regional group. After that, Myanmar joined regional organizations such as the ASEAN and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) in 1997 (BIMST-EC 1997).

Under the SPDC regime, Myanmar's government liberalized the economy and started to adopt a market economy. Various reforms were implemented for private and foreign firms to participate in the open economy. The economy, which had been long isolated from the world, was opened to the international market. The laws were changed so that the economy was open to domestic and foreign firms, which would be allowed to invest in the country. In the 1980s, many changes and international senses/events such as the economic reforms in China, the collapse of the Soviet Union and its system, and the rise of the Newly Industrialized Countries (NIEs) influenced the Myanmar government to upgrade its economic development. The regime also realized that the centrally planned economy neither generated growth nor sustained development (Than 2005, 71). Hence, adopting an open market economy just as many countries were would help Myanmar's economy to improve. Since 1989, after adopting a market economy system and the implementation of many reforms, the growth rate steadily increased year after year. Many reforms affected Myanmar's economic performance and caused it to move up gradually. During this time, the main contributor to GDP was the agricultural sector. After the liberalization of agricultural products and allowing domestic firms in the market, this sector became the main engine of economic growth during this time. However, natural disasters such as flooding and the Asian financial crisis slowed down the economy (Than 2005, 71).

Due to the liberalization of the foreign investment law, the FDI from ASEAN and outside regions had been flowing into Myanmar during the liberalization of trade. Most of the FDI went to mineral extraction, such as the oil and gas sector, despite agricultural sectors being the main contributors to Myanmar's GDP at the time. From 1999 to 2001, the booming garment sector had attracted FDI into Myanmar. Following the garment sector, the inflow of FDI shares in the oil and gas sectors became the main engine of Myanmar's GDP in 2003 (Than 2005, 74–76). The main trading partners of Myanmar and its neighboring countries from ASEAN, Japan, Asian Newly Industrializing Countries (ANIEs), other countries from Europe, the US, and so forth.

3. Research Methodology

This study applies the Harmonized System (HS) time-series data of the International Trade Centre (ITC) database covering all commodities groups available from trade partners of Myanmar and the CLV from 2001 to 2019. It attempts to measure the comparative advantage

and competitive strength of Myanmar and CLV's export in the context of ASEAN and the world market.

Based on data availability, the period of study is from 2001 to 2019. Because the availability of data for CLMV is limited, it was mainly collected from the International Trade Centre (ITC) database. However, even if data is available for ASEAN-6 and some years for Viet Nam, the trade data for Cambodia, Laos, and Myanmar (as a reporting country) is not available. Hence, the study uses the data reported by trade partners for Myanmar, Cambodia, and Laos. The time frame for the study period was 2001 to 2019. The exports of each country concerning the world market and the ASEAN market for CLMV were calculated using the HS code two-digit - Commodity categories.

When calculating RCA for ASEAN, some data was not available during the 2001-2019 period. Therefore, calculating for these years was omitted.

3.1 Revealed Comparative Advantage (RCA)

Balassa (1965) introduced the concept of a Revealed Comparative Advantage (RCA). The author focused on the long-term effects of trade liberalization and continued to expand on the theory of international trade, measuring the RCA index, the determinant factors that were influencing a nation's comparative advantages. Finally, the export performance index measured was Balassa's Index or the Revealed Comparative Advantage Index (RCA index). Following Balassa, Bowen (1983) further introduced two RCA indices, such as the net trade intensity and production intensity index. Hillman (1980) explored Balassa's index to examine RCA's relationship and competitiveness in a cross-commodity and cross-country comparison. This is described as the Hillman condition for cross-country comparison. Vollrath (1991) discussed and compared alternative indices of RCA with a focus on global intensity measures. The author examined ten indices comprising export performance indices (Balassa Index). Among them, the Balassa Index is most appropriate to use for the relative export advantage measure because the index eliminates the country and commodity double counting in the world's exports. The author concluded that the most satisfying standards are the relative export share measure (Balassa's index). As a result, many researchers used the export performance index and net export ratio to examine a nation's comparative advantage in comparing the RCA index across countries and commodities. Since then, any empirical research focused on measuring nations' comparative advantages such as enterprise, industry, and national levels have used different approaches comprising export-import analysis (Balassa 1979).

According to David Ricardo and Heckscher-Ohlin's theoretical model, a nation's comparative advantage depends on endowment factors and technology level. If a country possesses such factors and produces the commodity with the least cost and efficiency, it has a comparative advantage (Frederking 2010, 2). As the criteria to measure a country's advantage based on the traditional methods were too complicated, Balassa introduced a revealed comparative advantage index (Balassa 1965, 25). It is based on the export performance of a country to

show a comparative advantage. Since then, many researchers have been using the export performance of a country to analyze competitiveness.

Bela Balassa's (1965) formula is shown in the following equation:

$$\boldsymbol{RCA_{i,j}} = \frac{\boldsymbol{X_{i,j}/X_{w,j}}}{\boldsymbol{X_{i.tot}/X_{w,tot}}} \quad \text{(or)} \quad \boldsymbol{RCA_{i,j}} = \frac{\boldsymbol{X_{i,j}/X_{i,tot}}}{\boldsymbol{X_{w,j}/X_{w,tot}}} \qquad \textbf{Equation 1}$$

Where,

$RCA_{i,j}$ = the revealed comparative index of country i in commodity group j

$X_{i,j}$ = a country i export of commodity group j

$X_{w,j}$ = world export of commodity group j

$X_{i,tot}$ = total export of country i, and

$X_{w,tot}$ = total export of the world.

Calculating Myanmar's RCA is as follows:

$$\boldsymbol{RCA} = \frac{\boldsymbol{Myanmar\ export\ in\ sector\ i/Myanmar\ export\ in\ all\ sector}}{\boldsymbol{World\ export\ in\ sectori/World\ export\ in\ all\ sector}} \qquad \textbf{Equation 2}$$

RCA is defined as the ratio between the country's commodity export share to the world and its total export share in the world's total exports. The RCA index is a non-negative value. The result of an index "1" means the country's exports share in the commodity group "j" has a comparative advantage in the world's total exports. In contrast, if the RCA index shows a negative, it indicates that the country has a disadvantage in the corresponding commodity group.

However, the RCA index has some weak points when observing real trade patterns. As government interventions may lead to the distorting of trade patterns, such as import restrictions, export subsidies, and other government protection policies, it may cause the misinterpretation of comparative advantage. However, in practice, the RCA index is commonly accepted and widely used to analyze trade data.

3.2 Revealed Comparative Advantage of the CLMV

Empirical research on comparative advantages for Cambodia, Laos, Viet Nam, and Myanmar (CLMV) is still limited, especially for Myanmar. The Japan International Cooperation Agency (JICA) analyzed export share and RCA of Cambodia for selected products (a garment, footwear, frozen fish, crustaceans, tapioca, and derived products, palm oil, and automotive electrical equipment) for 2000-2020. It was found that although Cambodia has RCA in the garment industry, it would slightly lose the comparative advantage and share in total exports towards 2010 and then increase again until 2020. Footwear, some processed agricultural products, and frozen fish showed potential as significant export commodities in the Cambodian economy (JICA, 2007).

For Laos, Hara and Shuto (2005) studied its competitiveness structure and trade patterns with selected East Asian countries. They used the average of 1999-2001 and 2003 to calculate the RCA and NEI indices for Laos. In their study, Laos revealed comparative advantage in agricultural commodities, natural resource goods, and handicraft commodities (Hara and Shuto, 2005). For Viet Nam, Trung studied the trade regime with the revealed comparative advantage index over six selected ASEAN countries. In the study, Viet Nam had RCA mainly in primary commodities such as agricultural products, forestry, minerals, and mining. Furthermore, Viet Nam has a strong RCA in labour-intensive manufactured goods like textiles and clothing, footwear, and furniture (Trung 2002).

For Myanmar, Aung and Than studied the cooperation between BIMSTEC and Japan in international trade, focusing on Myanmar. In their study, Myanmar had the highest comparative advantage in oil and gas, and mining products, maintaining its RCA and increasing its trend. It also showed the highest RCA in textile and clothing products. Nevertheless, later, it showed a negative trend after the US's economic sanctions in 2003 (Aung and Than 2007, 17). As the export performance index is the most suitable index for Myanmar to evaluate the comparative advantage with its main competitors, the RCA is calculated from Myanmar's trade partners' available data from 2001 to 2019 and the CLV. It evaluates the competitive position, competitive strength, and the market trend of Myanmar and CLV in the ASEAN market and the world.

3.3 The Variation of RCA Values

To know the changing export pattern of Myanmar and CLV to the world, the study uses Bender and Lee's (2002) method to calculate the RCA's first three-year average and the RCA's last three-year average (2010-2012). These changing trends of average RCA show the competitiveness of products in which their strength has remained steady or degraded during the selected time frame (Bender and Li 2002).

The calculations of variation are based on the following:

$$\boldsymbol{RCA_i\ Variation\ rate} = \frac{RCA_{it} - RCA_{i0}}{RCA_{i0}} \qquad \textbf{Equation 3}$$

RCA_{i0} = the value of RCA period 0 for (i) industry

RCA_{it} = the value of RCA period t for (i) industry

$RCA_{it} - RCA_{i0}$ = the value of RCA's variation from period 0 to period t for (i) industry

The RCA's variation rate shows that if the result is positive, the comparative advantage has strengthened from the beginning to the end for the industry "i"; if the results show negatively, the comparative advantage has weakened from the start to the end for the industry "$i.$"

To calculate the change in export patterns of CLMV, the averages of the first three years (2001-2003) and the last three years are used to calculate the export sector of CLMV in which their RCA is more significant than one. The average RCA is an indicator of the real RCA change between the beginning and the end of the year. Therefore, changes in these

sectors' RCA averages indicate the changing export pattern from the beginning of the year to the end.

To examine the correlation coefficient, the study uses Clark's (2005) method and further exploration by Chien (2010). In their studies, if the industry's RCA values diminish in a particular region while expanding in another, the industry faces the shifting effect of the export's comparative advantage. If specific industries in regions gain a comparative advantage and become more competitive with a positive correlation at the same time, it indicates that these industries are competing against each other in these regions (Chien 2010, 119–20; Clark 2005).

In the same region, if RCA's correlation coefficients from the period'0′ to period $'t'$ are high, it represents a small change in the industrial structure change and vice versa. If RCA's correlation coefficients are high in different regions, then the industrial development pattern in a particular region follows another region (Clark 2005; Chien 2010, 119–20).

As per the Clark method, a high value (+1) means a strong positive correlation, a low value (-1) a negative correlation, and zero value is the absence of correlation. A high RCA value is substantial in the export composition. A low value in the RCA correlation means a change in the commodity and export diversification.

4. Results and Findings

The study uses the HS code data of the International Trade Centre (ITC) to calculate the RCA from 2001 to 2019 for Myanmar and CLV's competitiveness. The following are Myanmar's comparative advantages, where the RCA values are equal to and greater than one on the global market and ASEAN level. The following result is selected from the industries in which the RCA values are one and greater than one. Most of Myanmar RCA's gain is in the agriculture, mineral, and mining industries and some manufacturing industries.

4.1 Measurement of Myanmar RCA at the Global and ASEAN Level

Myanmar has a comparative advantage in 26 product lines globally and 37 at the ASEAN level. The RCAs of Myanmar at the global and regional level is slightly different.

Table 1 Myanmar RCA at the Global Level

HS Code	Product Description	RCA
01	Live animals	1.52
03	Fish, crustaceans, molluscs, aquatic invertebrates	9.45
05	Products of animal origin	1.71
07	Edible vegetables and certain roots and tubers	32.03
08	Edible fruit, nuts, peel of citrus fruit, melons	0.76
09	Coffee, tea, mate, and spices	0.96
10	Cereals	2.81
12	Oilseed, oleagic fruits, grain, seed, fruit, etc.,	2.84
14	Vegetable plaiting materials, vegetable products	15.44
23	Residues, wastes of the food industry, animal fodder	0.61
25	Salt, sulphur, earth, stone, plaster, lime, and cement	1.09
26	Ores, slag and ash	1.15
27	Mineral fuels, oils, distillation products, etc.	2.75
40	Rubber and articles thereof	1.25
44	Wood and articles of wood, wood charcoal	17.73
45	Cork and articles of cork	0.67
46	Manufactures of plaiting material, basketwork, etc.	6.28
53	Vegetable textile fibres, paper yarn, woven fabric	0.90
60	Knitted or crocheted fabric	0.71
61	Articles of apparel, accessories, knit or crochet	5.40
62	Articles of apparel, accessories, not knit or crochet	4.66
63	Other made textile articles, sets, worn clothing, etc.	1.24
64	Footwear, gaiters and the like, parts thereof	1.14
65	Headgear and parts thereof	0.84
66	Umbrellas, walking-sticks, seat-sticks, whips, etc.	0.95
70	Glass and glassware	7.77
74	Copper and articles thereof	1.46

Source: Author's calculation from ITC database

To understand the relationship of CLMV in the global market, the author selected and compared their top ten ranks of RCA values to analyze the changing and shifting of industries on a global level because most RCA values of CLMV are competing on the global market. The study analyzes their exports looking at how they compete with each other on the global and ASEAN level. Myanmar's top ten ranking RCA on the international are 07, 44, 14, 61, 03, 46, 62, 10, 27, and 12. Compared with Cambodia, Laos, and Viet Nam, the top ten ranks of the CLV's RCA were selected globally. Myanmar and Cambodia compete with each other on a global level in industries such as 61, 62, and 14. For the product vegetable plaiting materials and vegetable products (14), while Myanmar maintained its RCA, Cambodia lost its RCA globally.

In the competition in apparel, accessories knit or crochet (61) and items of clothing, accessories, not knit or crochet (62), Myanmar gained the RCA in the early years. It lost its RCA as time progressed, while Cambodia has maintained its RCA value at the global level. It could be said that the apparel industries shifted from Myanmar to Cambodia at the global level.

Cambodia's top ten ranks in the global arena are 61, 49, 65, 64, 62, 63, 40, 55, 14, and 25. Cambodia has strong competitiveness in industries such as apparel, accessories knit or crochet (61), and printed books, newspapers, pictures (49) from the start and maintained their RCA at the global level until 2009. Cambodia gained its RCA in industries such as salt, sulphur, earth, stone, plaster, lime, and cement (25) from 0 in the period (2001-03) to 9.00 in the period (2008-09). After that, it degraded to 0.75 at the end of the period (2010-12). Although Cambodia had a strong RCA value in industries such as footwear, gaiters (64), articles of apparel, accessories, not knit or crochet (62), and salt, sulphur, earth, stone, plaster, lime, and cement (25), it tended to degrade in the period (2010-12). The top ten ranks of Laos RCA values globally are 14, 44, 09, 62, 61, 13, 01, 12, 26, and 74. The industries in which Myanmar and Laos have a comparative advantage in their top ten ranks are 44, 61, and 62. Both have a strong RCA value in wood products and articles of wood, (44), and maintain their competitiveness globally. Despite Laos having a strong RCA value in this industry, its RCA value degraded from 36.31 in the period (2001-03) to 18.62 in the period (2007-09) and then increased again to 37.55 in the period (2010-12). Meantime, the first rank of Laos's RCA, which is vegetable plaiting materials and vegetable products (14), degraded from 53.67 in the period (2001-03) to 12.25 in the period (2010-12). This means Laos has started to lose its competitiveness in this product at the global level.

Both Laos and Myanmar lost their RCA values in apparel, accessories, knit, or crochet (61), and articles of clothing, accessories, not knit or crochet (62). Simultaneously, Cambodia has increased its RCA value in these industries around the period (2007-09). This means these industries shifting from Laos and Myanmar to Cambodia happened on a global level. However, Cambodia started to lose its RCA in apparel, accessories, knit, or crochet (61) in the period (2010-12).

Table 2 Myanmar RCA at ASEAN Level

HS Code	Product Description	RCA
01	Live animals	6.13
02	Meat and edible meat offal	0.89
03	Fish, crustaceans, molluscs, aquatic invertebrates	4.71
05	Products of animal origin	9.09
07	Edible vegetables and certain roots and tubers	48.43
08	Edible fruit, nuts, peel of citrus fruit, melons	1.18
09	Coffee, tea, mate, and spices	0.53
10	Cereals	2.23
12	Oilseed, oleagic fruits, grain, seed, fruit, etc.	18.55
13	Lac, gums, resins, vegetable saps, and extracts	0.74
14	Vegetable plaiting materials, vegetable products	6.84
23	Residues, wastes of food industry, animal fodder	1.13
24	Tobacco and manufactured tobacco substitutes	0.56
25	Salt, sulphur, earth, stone, plaster, lime, and cement	1.35
26	Ores, slag and ash	1.58
27	Mineral fuels, oils, distillation products, etc	2.65
36	Explosives, pyrotechnics, matches, pyrophorics, etc.	0.70
41	Raw hides and skins (other than furskins) and leather	0.66
44	Wood and articles of wood, wood charcoal	10.91
45	Cork and articles of cork	44.25
46	Manufactures of plaiting material, basketwork, etc.	2.59
51	Wool, animal hair, horsehair yarn, and fabric thereof	1.32
53	Vegetable textile fibers, paper yarn, woven fabric	3.89
60	Knitted or crocheted fabric	2.00
61	Articles of apparel, accessories, knit or crochet	3.41
62	Articles of apparel, accessories, not knit or crochet	3.72
63	Other made textile articles, sets, worn clothing, etc.	2.54
64	Footwear, gaiters and the like, parts thereof	0.79
65	Headgear and parts thereof	0.75
66	Umbrellas, walking-sticks, seat-sticks, whips, etc.	4.71
70	Glass and glassware	11.80
71	Pearls, precious stones, metals, coins, etc	0.71
74	Copper and articles thereof	1.69
83	Miscellaneous articles of base metal	0.84
86	Railway, tramway locomotives, rolling stock, equipment	3.24
93	Arms and ammunition, parts and accessories thereof	4.46
97	Works of art, collectors pieces, and antiques	2.05

Source: Author's calculation from ITC database

The top ten rankings of Viet Nam RCA are 46, 09, 03, 64, 14, 10, 50, 62, 65, and 61. The industries in which Myanmar and Viet Nam have a comparative advantage are vegetable

plaiting materials and vegetable products (14), articles of apparel, accessories, knit or crochet (61), fish, crustaceans, mollusks, and aquatic invertebrates (03), manufactures of plaiting material, basketwork (46), articles of apparel, accessories, not knit or crochet (62) and cereals (10).

While Viet Nam had a substantial RCA value in vegetable plaiting materials and vegetable products (14), Myanmar's RCA value degraded in the period (2010-12). While Myanmar lost its RCA value in apparel, accessories, knit, or crochet (61), Viet Nam has maintained its RCA value and maintained its competitiveness at the global level. Both Viet Nam and Myanmar maintained their substantial RCA value in fish, crustaceans, molluscs, aquatic invertebrates (03) at the global level. This means that Myanmar and Viet Nam have strong competitiveness in this product. While Myanmar lost RCA value in plaiting material, basketwork (46), Viet Nam kept its strong RCA. Viet Nam lost its RCA in cereals (10), while Myanmar maintained its RCA value of cereals (10) globally.

4.2 The Variation Rate of Myanmar's RCA Value Exports to the World

The method of Benda and Lee is used to examine Myanmar's RCA value's variation rate by using the averages of (2001-03) and (2010-12), analyzing the strengthen and weakness of the rate of Myanmar's RCA at the global level.

In Table 3, the results are based on the RCA average values for (2001-2003) to compare the RCA average for (2010-2012) at the global level.

1) The HS two digits industries for which Myanmar gained the RCA average value where the beginning (2001-2003) average value is more significant than one and is still higher than one during the period (2010-2012) are 03, 05, 07, 10, 12, 14, 27, 44, 46, and 61.
2) The HS two digits industries where Myanmar lost the RCA average value where the start (2001-2003) average value is more significant than one, but the average RCA values degraded during the period (2010-2012) are 01, 09, 62, 64, 65, and 74.
3) The HS two-digit industries of Myanmar with the (2001-2003) RCA average value and the (2010-2012) RCA average value greater than 2 are 03, 07, 10, 12, 14, 27, 44, 46, and 61.

The RCA variation rates that are positive and show strengthening of comparative advantage from the period (2001-03) to the period (2010-12) are products of animal origin (05), edible vegetables and certain roots and tubers (07), and wood, articles of wood (44). Therefore, Myanmar gained its RCA in these industries during the period (2001-2003) and (2010-12).

Table 3 Average Value of RCA of Myanmar's Export to The World (2001-2012)

HS Code	Product Description	2001-03 Average Value	2010-12 Average Value	Variation Rate (b-a) / a
01	Live animals	2.52	0.80	-0.68
03	Fish, crustaceans, mollusks, aquatic invertebrates	9.35	6.81	-0.27
05	Products of animal origin	1.13	1.35	0.20
07	Edible vegetables and certain roots and tubers	28.71	29.73	0.04
09	Coffee, tea, mate, and spices	1.24	0.47	-0.62
10	Cereals	3.71	3.26	-0.12
12	Oilseed, oleagic fruits, grain, seed, fruit, etc.	2.49	2.26	-0.09
14	Vegetable plaiting materials, vegetable products	16.11	6.27	-0.61
27	Mineral fuels, oils, distillation products, etc.	2.70	2.27	-0.16
44	Wood and articles of wood, wood charcoal	15.95	16.7	0.05
46	Manufactures of plaiting material, basketwork, etc.	9.58	5.03	-0.47
61	Articles of apparel, accessories, knit or crochet	11.23	6.53	-0.42
62	Articles of apparel, accessories, not knit or crochet	7.15	0.05	-0.99
64	Footwear, gaiters and the like, parts thereof	1.16	0.01	-0.99
65	Headgear and parts thereof	3.14	0.02	-0.99
74	Copper and articles thereof	2.46	0.00	-1.00

Source: Author's calculation from ITC database

The RCA variation rates that are negative and show a weakening of comparative advantage from period 0 to period t are live animals (01), fish, crustaceans, molluscs, aquatic invertebrates (3), coffee, tea, mate and spices (09), cereals (10), oilseed, oleagic fruits, grain, seed, fruit, etc. (12), vegetable plaiting materials, vegetable products (14), mineral fuels, oils, distillation products, etc. (27), manufactures of plaiting material, basketwork (46), articles of apparel, accessories, knit or crochet (61), items of apparel, accessories, not knit or crochet (62), footwear, gaiters and the like (62), headgear and parts (65), and copper and articles (74). Therefore, Myanmar lost its RCA value in 13 out of 16 industries since the period (2001-2003).

Myanmar has a substantial RCA value at the global level in industries such as fish, crustaceans, molluscs, aquatic invertebrates (03), edible vegetables and certain roots and tubers (07), vegetable plaiting materials, vegetable products (14), wood and articles of wood, wood charcoal (44) and mineral fuels, oils, distillation products (27), manufactures of plaiting material, basketwork (46), articles of apparel, accessories, knit or crochet (61), and articles of apparel, accessories, not knit or crochet (62).

At the start period (2001-2003), Myanmar had an RCA greater than one globally for 01, 03, 05, 07, 09, 10, 12, 14, 27, 44, 46, 61, 62, 64, 65 and 74. During the period (2001-03), Myanmar had RCA values greater than one in 16 industries; however, it could maintain its

RCA values in only ten industries by 2010-12. Myanmar lost its RCA values in industries such as live animals (01), Fish, crustaceans, molluscs, aquatic invertebrates (3), coffee, tea, mate and spices (09), cereals (10), Oilseed, oleagic fruits, grain, seed, fruit, etc. (12), vegetable plaiting materials, vegetable products (14), Mineral fuels, oils, distillation products, etc. (27), manufactures of plaiting material, basketwork (46), articles of apparel, accessories, knit or crochet (61), articles of apparel, accessories, not knit or crochet (62), headgear and parts (65), and copper and articles (74).

The RCA variation rates that are positive and show strengthening of comparative advantage from the period (2001-03) to period (2010-12) are: products of animal origin (05), oilseed, oleagic fruits, grain, seed, fruit, etc. (12), other made textile articles, sets, etc. (63) and works of art, collectors pieces and antiques (97). Therefore, Myanmar enhanced its RCA in four industries during the 2001-2012 periods.

In Table 4, results are based on calculating the RCA average values for (2001-2003) compared with the RCA average for (2010-2012) of Myanmar at the ASEAN level.

1) The HS two digits industries for which Myanmar gained the RCA average value where the start (2001-2003) average value is more significant than one and is still higher than one during the period (2010-2012) are 01, 03, 05, 07, 12, 14, 27, 44, 46, 61,63 and 97.

2) The HS two digits industries where Myanmar lost the RCA average value where the start (2001-2003) average value is more significant than one, but the average RCA values degraded during the average year (2010-2012) are 08, 24, 53, 62, 65, and 74.

3) Myanmar's RCA average value in (2001-2003) and in the (2010-2012) which are greater than 2 are 01, 03, 05, 07, 12, 14, 27, 44, 46, 61, 63 and 97.

Table 4 Variation Rate of Myanmar RCA Value Export to ASEAN

HS Code	Product Description	2001-03 Average Value	2010-12 Average Value	Variation Rate (b-a) / a
01	Live animals	8.82	2.59	-0.71
03	Fish, crustaceans, molluscs, aquatic invertebrates	4.51	3.64	-0.19
05	Products of animal origin	4.96	7.12	0.44
07	Edible vegetables and certain roots and tubers	49.09	40.02	-0.18
08	Edible fruit, nuts, peel of citrus fruit, melons	1.45	0.99	-0.32
12	Oil seed, oleagic fruits, grain, seed, fruit, etc.,	13.33	17.73	0.33
14	Vegetable plaiting materials, vegetable products	8.10	2.46	-0.70
24	Tobacco and manufactured tobacco substitutes	1.12	0.29	-0.74
27	Mineral fuels, oils, distillation products, etc.	2.57	2.15	-0.16
44	Wood and articles of wood, wood charcoal	9.73	9.14	-0.06
46	Manufactures of plaiting material, basketwork	3.26	2.89	-0.11
53	Vegetable textile fibers, paper yarn, woven fabric	5.38	0.90	-0.83
61	Articles of apparel, accessories, knit or crochet	6.92	5.09	-0.26
62	Articles of apparel, accessories, not knit or crochet	5.73	0.04	-0.99
63	Other made textile articles, sets, worn clothing	1.67	6.57	2.93
65	Headgear and parts thereof	3.70	0.03	-0.99
74	Copper and articles thereof	2.92	0.00	-1.00
97	Works of art, collectors pieces, and antiques	2.83	3.56	0.26

Source: Author's calculation from ITC database

The RCA variation rates that are negative and show a weakening of comparative advantage from period 0 to period t are: live animals (01), fish, crustaceans, molluscs, aquatic invertebrates (3), edible vegetables, and certain roots and tubers (07), edible fruit, nuts, peel of citrus fruit, melons (08), vegetable plaiting materials, vegetable products (14), tobacco and manufactured tobacco substitutes (24), mineral fuels, oils, distillation products, etc. (27), wood and articles of wood (44), manufactures of plaiting material, basketwork (46), vegetable textile fibers, paper yarn, woven fabric (53), articles of apparel, accessories, knit or crochet (61), items of apparel, accessories, not knit or crochet (62), headgear and parts (65), and copper and articles (74). Therefore, Myanmar lost its RCA value in 14 out of 18 industries from RCA's origin (2001- 2003).

Myanmar has a substantial RCA value at the ASEAN level in industries such as products of animal origin (05), edible vegetables and certain roots and tubers (07), oilseed, oleagic fruits, grain, seed, fruit, etc. (12), wood and articles of wood (44), articles of apparel, accessories, knit or crochet (61), and other made textile articles, sets, worn clothing, etc. (63).

At the start of the period (2001-2003), Myanmar had an RCA value greater than at the ASEAN level for such industries as 01, 03, 05, 07, 08, 12, 14, 24, 27, 29, 44, 46, 53, 61, 62,

63, 65, 74 and 97. In the period (2001-03), Myanmar had RCA values more significant than one in 18 industries, and it had maintained its RCA values only four industries in the period (2010-12). Myanmar lost its RCA values in industries such as live animals (01), fish, crustaceans, molluscs, aquatic invertebrates (3), edible vegetables and certain roots and tubers (07), edible fruit, nuts, peel of citrus fruit, melons (08), vegetable plaiting materials, vegetable products (14), tobacco and manufactured tobacco substitutes (24), mineral fuels, oils, distillation products, etc. (27), wood and articles of wood, wood charcoal (44), manufacture of plaiting material, basketwork (46), vegetable textile fibers, paper yarn, woven fabric (53), articles of apparel, accessories, knit or crochet (61), articles of apparel, accessories, not knit or crochet (62), headgear and parts (65), and copper and articles (74). Therefore, Myanmar lost its RCA value in 14 out of 18 industries from RCA's origin (2001-2003).

4.3 Analysis of the Correlation Coefficient of CLMV under Global Level

In
Table 5 and
Table 6, the analysis of the correlation coefficient of CLMV is based on the calculations of the CLMV exports to the world market and at the ASEAN level.

Table 5 Correlation Coefficient: Myanmar vs. Cambodia, Laos, and Viet Nam at the Global Level

Year	Myanmar vs. Cambodia	Myanmar vs. Laos	Myanmar vs. Viet Nam
2001	0.17	0.42	0.32
2002	0.15	0.52	0.35
2003	0.14	0.65	0.36
2004	0.05	0.71	0.30
2005	-0.05	0.71	0.24
2006	-0.03	0.37	0.20
2007	-0.03	0.24	0.16
2008	-0.02	0.30	0.14
2009	0.07	0.17	0.13
2010	-0.01	0.06	n.a
2011	0.04	0.32	n.a
2012	0.18	0.32	0.04

Source: Author's calculation from ITC database

Among the CLMV, Myanmar had a strong correlation RCA with Laos in exports to the world market and at the ASEAN level. Most of the correlation is significant from the beginning to the end. The main finding was that Myanmar and Laos have strong competitiveness in industries such as wood and articles of wood (44), vegetable products (14), and articles of

apparel, accessories, knit, or crochet (61). In 2003, despite the US sanction excluding Myanmar's garment exporting to the US and EU market, the boom of natural gas and hydropower production started simultaneously. Meanwhile, Laos has also developed its mineral fuels, oils, distillation products (27) from 2,041 million US dollars in 2003 to 12,527 thousand US dollars in 2004 and further to 66,873 thousand US $ in 2005. Laos also developed electrical, electronic equipment (85) from 4,349 thousand US dollars in 2003 to 17,694 thousand US $ in 2008 (ITC Communications 2013).

Therefore, starting from 2003 to 2005, the correlation between them was significant on some level. In 2001, the top product in Laos's RCA value (vegetable plaiting materials, vegetable products) had started to degrade from 48.74 in 2005 to 21.76 in 2006. As a result, the correlation between them was not significant in 2006. The industry 14 of Laos's RCA was to further degrade to 10.86 in 2009. In the beginning, it was in the top ten ranks, and its RCA value was 76.66 in 2001. On the other hand, the RCA value of Myanmar industry 27 increased from 25.69 in 2005 to 42.57 in 2009. Additionally, since 2005, the RCA value of apparel, accessories, knit, or crochet (61) of Myanmar had degraded from 6.01 in 2004 to 1.87 in 2005, and then further to 0.45 in 2009. Therefore, the competition between them would become insignificant.

Table 6 Correlation Coefficient: Myanmar vs. Cambodia, Laos, and Viet Nam at the ASEAN Level

Year	Myanmar vs. Cambodia	Myanmar vs. Laos	Myanmar vs. Viet Nam
2002	-0.045	0.459	0.187
2003	-0.020	0.421	0.321
2004	0.018	0.423	0.239
2005	-0.030	0.345	0.159
2006	-0.037	0.284	0.141
2007	-0.044	0.313	0.083
2008	-0.018	0.094	0.074
2009	-0.030	n.a	0.183
2010	-0.002	n.a	0.008
2011	-0.011	n.a	n.a

Source: Author's calculation from ITC database

* Data from 2010 and 2011 are not available

Regarding Viet Nam, Myanmar competes with Viet Nam in industries such as apparel, accessories, knit or crochet (61), articles of apparel, accessories, not knit or crochet (62), and fish, crustaceans, molluscs, aquatic invertebrates (03). Therefore, the correlation between them was significant at some level. However, because of the degradation of Myanmar's RCA value in industries such as apparel, accessories, knit or crochet (61), articles of apparel, accessories, not knit or crochet (62), their correlation is not as significant as the start year. The remaining competition is only in industry (03).

The correlation between Myanmar and Cambodia is very low at a global level. The significant level of their correlation is in 2001. At that time, both exported garments to the

global market. Since 2003, with the decline of Myanmar's global garment exports, the correlation between them has been very low, and the correlation coefficient fell to minus in 2008. Therefore, they are now not significantly correlated with each other compared to the beginning year.

When comparing the top ten average of CLMV, there are some opposite trends in RCA value. If Cambodia has an absolute comparative advantage in some industries, Laos and Myanmar lost their comparative advantage. In the meantime, Viet Nam gained its comparative advantage and became more competitive with Cambodia. When analyzing Myanmar and its members' correlation coefficient, it came out that Myanmar's export structure is similar to that of Cambodia, Laos, and Viet Nam. The export structure of Myanmar is complementary to that of the ASEAN-6. Myanmar competes with Cambodia in apparel, accessories, knit, crochet (61) and articles of apparel, accessories, not knit or crochet (62) in their top ten ranks RCA in the starting period.

Myanmar competes with Laos in RCA such as in vegetable plaiting materials, vegetable products (14), wood and articles of wood (44), articles of apparel, accessories, knit or crochet (61), and articles of apparel, accessories, not knit or crochet (62). With Viet Nam, Myanmar competes in commodities such as wood and articles of wood, wood charcoal (44), vegetable products (14), articles of apparel, accessories, knit or crochet (61), fish, crustaceans, molluscs, aquatic invertebrates (03), manufactures of plaiting material, basketwork (46), articles of apparel, accessories, not knit or crochet (62) and cereals (10).

Table 7 RCA's Correlation Coefficient of Myanmar and CLV at Global Level

Correlation Coefficient (Year)	Cambodia	Laos	Myanmar	Viet Nam
2001-03 versus 2010-12	0.94	0.55	0.68	0.56

Table 8 RCA's Correlation Coefficient of Myanmar And CLV at ASEAN Level

Correlation Coefficient (Year)	Cambodia	Laos	Myanmar	Viet Nam
2001-03 versus 2010-12	0.16	0.63	0.89	0.72

Source: Author's calculation from ITC database

In summary, to understand export structure change in each country's industries, this analysis uses RCA's correlation coefficients of world exports for Myanmar, Cambodia, Laos, and Viet Nam 2001-2012. For each country, the calculation of CLMV results shows that if the correlation coefficients are small, the export pattern/structure change is large and vice versa. In Table 7 and 8, the industrial correlation coefficient was 0.55 for Laos and 0.56 for Viet Nam's exports to the world from 2001 to 2012. This means that, among the CLMV countries, Laos and Viet Nam faced an industrial structure change at the global level. Laos has developed its industry from the primary sector to power production, such as electrical and electronic equipment (85), and mineral production such as mineral fuels, oils, distillation products (27) from around the period (2005- 2006). Therefore, Laos faced industrial change. Viet Nam also diversified its industrial development during the reform process.

The correlation coefficient for the RCA value of Cambodia is substantial. It shows the highest figure, 0.94, among the CLMV. From this, we may conclude that Cambodia has not experienced industrial export structure change during the study period. Myanmar's correlation coefficient is also lower than that of Cambodia, meaning a slower diversification in Myanmar.

Myanmar also faces the highest correlation coefficient of RCA value in the association's market at the ASEAN level. It shows the highest figure, 0.89, among the CLMV. From this, we may conclude that Myanmar also has not experienced industrial export structure change during the study period at the ASEAN level. For Cambodia, the industrial correlation coefficient was only 0.16. The industrial change happened in Cambodia at the ASEAN level.

4.4 Analysis of the Correlation Coefficient of RCA between Myanmar and ASEAN-6

The following table is based on the correlation coefficient between Myanmar and the ASEAN-6 in the global market.

Table 9 RCA's Correlation Coefficients of Myanmar vs. ASEAN-6 at the Global Level

Country's Correlation	2001	2002	2003	2004	2005	2006	2007	2008	2009
Myanmar vs. Thailand	0.073	0.060	0.034	0.074	0.042	0.043	0.048	0.031	0.051
Myanmar vs. Singapore	-0.036	-0.027	-0.063	0.015	-0.025	-0.066	-0.054	-0.074	-0.101
Myanmar vs. Indonesia	0.214	0.182	0.194	0.268	0.140	0.082	0.083	0.052	0.015
Myanmar vs. Malaysia	0.002	0.004	0.006	0.030	0.037	0.018	0.024	0.032	0.056
Myanmar vs. The Philippines	0.214	0.200	0.208	0.128	0.091	0.084	0.092	0.073	0.051
Myanmar vs. Brunei	n.a	0.085	0.061	n.a	n.a	0.039	0.033	0.052	0.039

*Data for some years are not available for Brunei

Source: Author's calculation from ITC database

Since the development gap between the advanced members and newcomers is huge, the correlation coefficient between Myanmar and the ASEAN-6 is negative or very small, meaning that and the ASEAN-6 have not competed with each other because Myanmar's export structure is different from and complementary to that of the ASEAN-6.

4.5 Analysis of the Export Performance of Myanmar from 2001 to 2019

To understand the relationship of the CLMV in the global market, the author compared their top ten ranks of RCA values to analyze the change of export patterns on a global level because most of the RCA values of CLMV compete against each other on the global level.

The study examines their export trends by looking at how they compete with each other on the global market.

Myanmar's top ten ranking RCA on the global level are 07, 44, 14, 61, 03, 46, 62, 10, 27, and 12. In order to compare with Cambodia, Laos, and Viet Nam, the top ten ranks of the CLV's RCA at the global level were selected.

Myanmar and Cambodia compete with each other on a global level in industries such as apparel, accessories, knit or crochet (61), articles of apparel, accessories, not knit or crochet (62), and vegetable plaiting materials, vegetable products (14). For industry (14), while Myanmar maintained its RCA, Cambodia lost its RCA globally. In the competition in areas (61) and (62), Myanmar gained RCA in the early years and lost its RCA as time progressed, while Cambodia has maintained its RCA value at the global level. It can be said that the apparel industries shifted from Myanmar to Cambodia at the global level.

Cambodia's top ten rank in the global arena is 61, 49, 65, 64, 62, 63, 40, 55, 14, and 25. Cambodia had strong competitiveness in industries such as knit or crochet apparel accessories (61) and printed books, newspapers, pictures (49) at the start and maintained its RCA on the global level until 2009. Cambodia gained its RCA in salt, sulphur, earth, stone, plaster, lime, and cement (25). After that, it declined at the end of the period (2010-12). Although Cambodia had a strong RCA value in industries such as footwear, gaiters (64), articles of apparel, accessories, not knit or crochet (62), and salt, sulphur, earth, stone, plaster, lime, and cement (25), it tended to decline at the end of period (2010-12) (Sai 2011).

The top ten ranks of Laos RCA values globally is14, 44, 09, 62, 61, 13, 01, 12, 26, and 74 (Sai 2011). The industries in which Myanmar and Laos share comparative advantage in their top ten ranks are wood and articles of wood (44), articles of apparel, accessories, knit or crochet (61), articles of apparel, accessories, not knit or crochet (62). Both have a strong RCA value in wood products and articles of wood, wood charcoal (44) and maintain their competitiveness globally. Despite Laos having a substantial RCA value in this industry, its RCA value declined from the start period (2001-03) to the period (2007-09) and then increased again at the end of the period (2010-12). Meantime, the first rank of Laos's RCA, which is vegetable plaiting materials and vegetable products (14), declined from the start period (2001-03) to the end of period (2010-12). This means Laos has started to lose its competitiveness in this product at the global level. Both Laos and Myanmar lost their RCA values in the products of apparel, accessories, knit or crochet (61) and articles of apparel, accessories, not knit or crochet (62). Simultaneously, Cambodia increased its RCA value in these industries during the period (2007-09). This means these industries shifting from Laos and Myanmar to Cambodia happened at a global level. However, Cambodia started to lose its RCA in apparel, accessories, knit, or crochet (61) at the end of the study period (2010-12) (Sai 2011).

The top ten rankings of Viet Nam RCA are 46, 09, 03, 64, 14, 10, 50, 62, 65, and 61 (Sai 2011). The industries in which Myanmar and Viet Nam have shared comparative advantage

are vegetable plaiting materials and vegetable products (14), articles of apparel, accessories, knit or crochet (61), fish, crustaceans, mollusks, and aquatic invertebrates (03), manufactures of plaiting material, basketwork (46), articles of apparel, accessories, not knit or crochet (62), and cereals (10). While Viet Nam had a substantial RCA value in vegetable plaiting materials and vegetable products (14), Myanmar's RCA value declined at the end of the period (2010-12). While Myanmar lost its RCA value in apparel, accessories, knit, or crochet (61), Viet Nam has maintained its RCA value and maintained its competitiveness at the global level. Both Viet Nam and Myanmar maintained their strong RCA value in fish, crustaceans, mollusks, aquatic invertebrates (03) at the global level. This means that Myanmar and Viet Nam have strong competitiveness in these products. While Myanmar lost RCA value in plaiting material, basketwork (46), Viet Nam kept its strong RCA. Viet Nam lost its RCA in cereals (10), while Myanmar maintained its RCA value globally (Sai 2011).

In
Table 11, Natural gas was the main export product of Myanmar over the last decade. The share of natural gas increased from 30 percent in the period (2002-04) to 40 percent in the period (2009-2011), and then continue to its peak in 2014. Other products that account for large shares include wood products, agricultural products, and textiles. There is a similarity in export structure between the exports in the early 2000s and the late 2000s. The exports of shrimps and prawns, which used to be ranked as the fourth-highest export items (4.4 percent), were no longer in the top ten in 2019. In contrast, beans and semi-precious stones have emerged as second major export items, and precious and semi-precious stones became the fifth-largest export items for Myanmar during the period (2012-2014) (Sai 2011).

Table 10 The Changing Top Ten-Export Pattern of Myanmar (2001-2012)

HS Code	Product Description	2001-2003	2010-2012
07	Edible vegetables and certain roots and tubers	28.61	29.73
44	Wood and articles of wood, wood charcoal	15.96	16.70
14	Vegetable plaiting materials, vegetable products	16.07	6.27
61	Articles of apparel, accessories, knit or crochet	11.19	6.53
03	Fish, crustaceans, mollusks, aquatic invertebrates	9.35	6.81
46	Manufactures of plaiting material, basketwork, etc.	9.58	5.03
62	Articles of apparel, accessories, not knit or crochet	7.17	0.05
10	Cereals	3.70	3.25
27	Mineral fuels, oil, distillation products, etc.	2.71	2.27
12	Oil seed, oleaginous fruits, grain, seed, fruit, etc.	2.49	2.26

Source: Author's calculation based on the ITC database

Table 11 Top Ten Exported Products (2019)

Rank	Product Code	Product Description	Value (In Million US $)	Share in Total Trade %
1	271111	Natural gas, liquefied	2,623,719	14.58
2	271121	Natural gas in gaseous state	1,605,079	8.92
3	740311	Copper, refined, cathodes	803,532	4.46
4	710310	Precious stones and semi-precious stones	778,374	4.32
5	071331	Dried, shelled beans of species	762,002	4.23
6	100620	Husked or brown rice	559,505	3.11
7	620432	Women's or girls' jackets and blazers of cotton	530,075	2.95
8	620332	Men's or boys' jackets and blazers of cotton	441,812	2.45
9	620339	Men's or boys' jackets and blazers of textile	410,639	2.28
10	080310	Fresh or dried plantains	396,519	2.20
		Top ten products' share in total exports:		49.50

Source: Author's calculation based on the ITC's 6-Digit HS code

The top ten exports accounted for 62 percent of Myanmar's exports (2002-04), whereas they accounted for 49.50 percent in 2019. The other top export has been garment. Myanmar's exports are concentrated on a few destinations.

Table 12 shows the top ten export markets of Myanmar in 2019. Over 50 percent of exports go to a single market such as China and Thailand. These two countries became the major trade partners of Myanmar after the 2000s. Exports to Thailand increased threefold from 2001 to 2015. The reason Myanmar exports substantially to China and Thailand was the trade embargo of the US and EU in 2000. After changes in the political situation and the removal of trade sanctions in 2012, exports to other markets should also be addressed to enhance exports and reduce dependence on a single market.

Table 12 The Top Ten Export Destinations for Myanmar in 2019

Ranks	Importer	Value in Total Export (Million the US $)	Share in Export (%)
1	China	5,712,673	31.7
2	Thailand	3,228,870	17.9
3	Japan	1,428,601	7.9
4	United States of America	828,714	4.6
5	Germany	641,724	3.6
6	India	635,227	3.5
7	Spain	550,398	3.1
8	United Kingdom	535,864	3.0
9	Korea, Republic of	530,639	2.9
10	Netherlands	481,033	2.7

Source: Author's calculation based on the ITC's database

Before imposing trade sanctions, the EU and the US were the main destination markets for Myanmar's exports, mainly the export of garment products. After the sanctions, Asian countries became Myanmar's top ten export destinations. Myanmar developed its trade with Thailand, China, Japan, and India, while reducing its trade intensity with the EU and the US. Until 2019, China is still the top export destination for Myanmar and, the rapid growth of exports to China is notable. And the main export items of Myanmar consist primarily of gas, semi-precious stones, and wood products. Exports to other ASEAN countries such as Thailand and Japan also improved during the study period.

In Table 13, it is notable that Myanmar's exports destined to the top ten export markets accounted for more than 90 percent of total exports from 2010 to 2014. The structure of Myanmar export is still not diversified, among the ASEAN latecomers such as Cambodia, Laos, and Viet Nam. By observing the trade complementarity index of Myanmar in the Revealed Comparative Advantage (RCA) approach,
Table 7 which compares a good that one country exports and another country imports, Myanmar matches the supply and demand for the same products as Cambodia, Laos, and Viet Nam (CLV) on some level. On the other hand, it was shown in Table 9 that Myanmar has complementarity in its trade with the advanced ASEAN and East Asian nations. The outcome resulting from Myanmar's analysis in the RCA index reveals that the correlation between the ASEAN latecomers is positive. In contrast, a low correlation exists with the advanced ASEAN members that have a revealed trade complementarity. When observing outside the ASEAN region, some countries may have a high complementarity of trade with Myanmar. For example, the EU, USA, and East Asian members could be future destination markets and trade partners for Myanmar. By applying the RCA to assess its export competitiveness, Myanmar should establish its priorities for target industries and promote some proactive industrial policies under regional trading arrangements.

Table 13 Myanmar Top Ten Export Items in 2010-2014 (Share in %)

Top Ten Exported Products (2010-14)							
Rank	HS Code	Product Description	2010	2011	2012	2013	2014
1	71	Pearls, precious stones, metals, coins	24.54	9.43	3.77	11.26	51.94
2	27	Mineral fuels, oils, distillation products	38.50	37.17	41.19	37.07	21.03
3	44	Wood and articles of wood, wood charcoal	7.97	13.58	14.37	15.27	6.16
4	62	Apparel, accessories, not knit or crochet	4.36	9.38	9.91	9.60	5.42
5	07	Edible vegetables and certain roots and tubers	11.68	10.11	9.69	7.84	4.42
6	26	Ores, slag, and ash	0.14	2.89	2.73	4.24	2.43
7	03	Fish, crustaceans, mollusks, aquatic	4.17	3.68	3.90	3.18	1.43
8	72	Iron and steel	0.00	0.04	0.06	0.13	1.24
9	10	Cereals	2.22	3.74	2.78	1.44	0.79
10	61	Articles of apparel, accessories, knit or crochet	0.06	0.61	0.72	1.04	0.79
		Top ten products' share in total exports	**93.64**	**90.63**	**89.12**	**91.07**	**95.65**
Top Ten Exported Products (2015-2019)							
Rank	HS Code	Product Description	2015	2016	2017	2018	2019
1	27	Mineral fuels, mineral oils, and products	42.32	28.16	26.67	21.6	24.17
2	62	Apparel, accessories, not knitted or crocheted	6.6	12.7	13.94	19.6	20.99
3	61	Apparel, accessories, knitted or crocheted	0.58	0.79	3.57	5.12	6.95
4	10	Cereals	8.38	5.7	9.64	6.97	5.68
5	07	Edible vegetables and certain roots and tubers	11.37	12.19	6.78	4.57	5.41
6	71	Pearls, precious stones, metal, and coins	5.48	3.64	2.81	5.65	4.56
7	74	Copper and articles thereof	1.91	2.25	3.53	4.97	4.48
8	03	Fish and crustaceans, molluscs , and aquatic	3.91	4.61	4.77	4.4	4.28
9	08	Edible fruit and nuts; peel of citrus fruit	1.64	2.03	1.78	2.49	3.72
10	64	Footwear, gaiters, and the like	0.65	1.19	1.8	2.3	2.63
		Top ten products' share in total exports	**82.84**	**73.26**	**75.29**	**77.6**	**82.87**

Source: Author's calculation based on the ITC database

Table 12 and Table 13 has clearly shown that Myanmar may need to trade more with other essential partners, and it is apparent that Myanmar trades less with large economies like the US and EU. As the sanctions have already been removed, Myanmar may need to have strong export relationships with these countries and trading blocs.

5. Conclusion

This study aims to draw **"*Policy Implication for Myanmar*"** using the Revealed Comparative Advantage (RCA) approach under the regional integration process. The variation of RCA value is analyzed by using the method of Benda and Lee. During 2001-03, Myanmar had RCA values more significant than one globally in 16 industries. However, it could only maintain its RCA in 10 sectors by the period 2010-12. Myanmar lost its RCA values in

industries such as live animals (01), fish, crustaceans, molluscs, at aquatic invertebrates (3), coffee, tea, mate and spices (09), cereals (10), oilseed, oleagic fruits, grain, seed, fruit, etc. (12), vegetable plaiting materials, vegetable products (14), mineral fuels, oils, distillation products, etc. (27), manufactures of plaiting material, basketwork (46), articles of apparel, accessories, knit or crochet (61), items of apparel, accessories, not knit or crochet (62), headgear and parts (65), and copper and articles (74).

Myanmar competes with Cambodia in apparel, accessories knit or crochet (61), and apparel, accessories, not knit or crochet (62). Although Myanmar had RCA in this sector in the early years, it lost its RCA over time. Cambodia could maintain its RCA value at the global level. Due to the US sanctions' effects, Myanmar lost its comparative advantage in apparel, accessories, knit or crochet (61), and articles of clothing, accessories, not knit or crochet (62) at the global level.

Myanmar competes with Laos in industries such as wood and articles of wood, wood charcoal (44), footwear, gaiters (64), the articles of apparel, accessories knit or crochet (61) and articles of apparel, accessories, not knit or crochet (62) and vegetable plaiting materials, vegetable products (14). Both have a substantial RCA value in the industry (44) at the global level and keep their competitiveness. However, they lost their RCA value in apparel, accessories, knit, or crochet (61) and apparel, accessories, not knit or crochet (62). At the same time, Cambodia has increased its RCA value in these industries.

Myanmar competes with Viet Nam in industry areas such as the vegetable plaiting materials, vegetable products (14), the articles of apparel, accessories, knit or crochet (61) and articles of apparel, accessories, not knit or crochet (62), and fish, crustaceans, molluscs, aquatic invertebrates (03). They compete with each other in the industries of 61 and 62. Both lost their RCA value in the industry (46) as time passed, despite having strong RCA value in the early years. Both still have maintained their RCA value in cereal products (10) at the global level. The remaining area of the competition is in the industry (03).

Among the CLMV, Myanmar had a strong RCA correlation with Laos in exports to the world market and at the ASEAN level. Most of the correlation is significant from the start year to the end. The main finding was that Myanmar and Laos have strong competitiveness in industries such as wood and articles of wood (44), vegetable products (14), and articles of apparel, accessories, knit, or crochet (61). Both countries have strong competitiveness in the world market in these areas or compete vigorously against each other.

Regarding Viet Nam, Myanmar competes with Viet Nam in industries such as articles of apparel, accessories, knit or crochet (61), articles of apparel, accessories, not knit or crochet (62), and fish, crustaceans, mollusks, and aquatic invertebrates (03). Therefore, the correlation between them was significant at some level. However, because of the degradation of Myanmar's RCA value in industrial areas such as apparel, accessories, knit or crochet (61) and articles of apparel, accessories, not knit or crochet (62), their correlation is not significant

as in the start year. The remaining competition is only in the industry of fish, crustaceans, mollusks, and aquatic invertebrates (03).

When comparing the top ten average of CLMV, there are some direction changes in the RCA value. If Cambodia has an absolute comparative advantage in some industries, Laos and Myanmar lost their comparative advantage. In the meantime, Viet Nam gained a comparative advantage and became more competitive with Cambodia. When analyzing Myanmar and ASEAN members' correlation coefficient, it came out that Myanmar's export structure is similar to that of Cambodia, Laos, and Viet Nam. The export structure of Myanmar is complementary to that of the ASEAN-6.

The correlation between Myanmar and Cambodia is very low at a global level. The significant level of their correlation is in the start year 2001. At that time, both exported garments to the global market. Since 2003, with the decline of Myanmar's garment exports to the world, the correlation between them was very low, and the correlation coefficient fell to a negative in 2008. Therefore, they are not correlated much to each other as they were at the beginning.

For ASEAN-6, since the development gap between the advanced members and newcomers is enormous, the correlation coefficient between Myanmar and the ASEAN-6 is negative or very small, meaning that Myanmar and the advanced ASEAN members have not competed against each other in their exports to the world as the export structure of Myanmar is complementary to that of the ASEAN-6.

In summary, under ASEAN economic integration, Myanmar has developed its industrialization process in labor-intensive industries like garment exports at the end of the 1990s to the early 2000s. This sector became the main export area of Myanmar and created the highest export earnings until 2002. However, exports ended with the US's trade embargo on the Myanmar government.
Since Myanmar concentrated on exploring natural gas since 2003, this sector became the primary source of Myanmar's GDP. However, during the study period, Myanmar's main exports still rely on resource-based industries. Therefore, it is a significant challenge for Myanmar to implement its industrial development to support job opportunities for local people. Besides, Myanmar's main exports are still primary products such as rice, minerals, and wood products. Since the socialist era in the 1960s, these kinds of exports accounted for 75 percent of Myanmar's GDP. Hence, the nature and pattern of Myanmar exports have to change to compete with its other ASEAN members in the future (U Myint 2009, 16).

Under the ASEAN FTA scheme, Myanmar could increase agricultural goods export to the ASEAN market because the tariff rate and non-tariff barrier were reduced under the CEPT scheme. If, in the future, Myanmar can develop agro-based industry, other manufacturing industries, human resource-based industry, and ICT industry, joining the ASEAN regional integration will be much more beneficial for Myanmar. Since most of these resources can be

exported with a low tariff rate to ASEAN members, development in these industries will help Myanmar compete with other ASEAN members in the future.

After 1988, the liberalization of the market economy caused Myanmar's economy to grow on some levels. The allowance of private participation in domestic and foreign firms helped Myanmar's industrialization succeed in labour-intensive areas like the garment industry in the 1990s. Since allowing FDI investment in the private sector and joining the regional groups, the foreign capital sources flowing into Myanmar increased drastically. They led to a boom in Myanmar's economy in labour-intensive manufacturing industries from 1997 to 2002 then further to the time of study.

In summary, export diversification has been very low in Cambodia, Laos, and Myanmar. Viet Nam has been moving to more diversification of exports to the world. To some extent, the diversification of exports has been little found in CLM. To answer the author's research question, these findings suggest that participation in AFTA has not brought the positive effects of competitiveness to CLM yet. The results revealed that Myanmar has a dynamic evolution in the mineral resource base industry, such as natural gas extraction. Cambodia has been improving in the garment production industry with competitiveness among CLMV. Laos has shifted from primary agricultural commodities to resource-based production, such as power production. Viet Nam has been moving to diversify products with competitiveness under the regional integration process. Viet Nam has also been moving ahead of CLM in the industrialization process with electrical equipment and motor vehicle parts. Therefore, with the slow progress of CLMV, excluding Viet Nam, the founders of ASEAN and the new members still challenge removing the gap between the advanced members and the latecomers. Therefore, this open-door policy created remarkable development in external trade for the Myanmar economy. ***However, the outcome of Myanmar's competition in the international market greatly depends on how the government's policies and economic performance respond to the new challenges emerging from the context of regionalization and globalization.*** Hence, it is necessary to find out how Myanmar responds/manages its economic integration process in ASEAN and find out the barriers in this process.

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References:

1. ASEAN. 2002. "ASEAN Annual Reports."
2. Aung, Maung, and Min Min Than. 2007. "BIMSTEC- Japan Cooperation in International Trade: Myanmar Perspective." *Centre for Studies in International Relations and Development*.
3. Balassa, Bela. 1965. *Trade Liberalization and Revealed Comparative Advantage*. Yale University, Economic Growth Center.
4. ———. 1979. "The Changing Pattern of Comparative Advantage in Manufactured Goods." *The Review of Economics and Statistics* 61 (2): 259.
5. Bender, Siegfried, and Kui-Wai Li. 2002. "The Changing Trade and Revealed Comparative Advantages of Asian and Latin." *Economic Growth Centre, Yale University* No 843 (March).
6. BIMST-EC. 1997. "Declaration on the Admission of the Union of Myanmar and the Re-Naming of BIST-EC." 1997.
7. Bowen, Harry P. 1983. "On the Theoretical Interpretation of Indices of Trade Intensity and Revealed Comparative Advantage." *Weltwirtschaftliches Archiv* 119 (3): 464–72.
8. Chien, Chen-Lin. 2010. "Study of the Change in Export Competitive Advantage of Japan, China, South Korea and Taiwan in the US Market – Using RCA as the Measurement Index." *The Journal of International Management Studies* Volume 5 (No. 118 1).
9. Clark, Don P. 2005. "Revealed Comparative Advantage Indexes for Regions of the United States." *Economy Journal* Vol. 5 (Iss. 1).
10. Ezaki, Mitsuo, and Tien Dung Nguyen. 2008. "Regional Economic Integration and Its Impacts on Growth, Income Distribution and Poverty in East Asia: A CGE Analysis." *GSID*, no. No.167 (April).
11. Frederking, Johannes. 2010. *Comparative Cost Advantage and Factor Endowment: Are These Theories Still Relevant?* GRIN Verlag.
12. Fujita, Kōichi, Fumiharu Mieno, and Ikuko Okamoto. 2009. *The Economic Transition in Myanmar After 1988*. NUS Press.
13. Hara, Yonosuke, and Hisato Shuto. 2005. "Trade Structures and Export Competitiveness in Lao PDR and the East Asian Countries." 1R-JR 05-04. Japan International Cooperation Agency.
14. Hillman, Arye L. 1980. "Observations on the Relation between 'Revealed Comparative Advantage' and Comparative Advantage as Indicated by Pre-Trade Relative Prices." *Weltwirtschaftliches Archiv* 116 (2): 315–21.
15. Institute of Southeast Asian Studies, and Lorraine Carlos Salazar. 2007. *Southeast Asian Affairs*. Institute of Southeast Asian Studies.
16. ITC Communications. 2013. "Designing a Strategy to Develop Myanmar's Exports." May 2, 2013.
17. JICA. 2007. "The Study on Economic Policy Support in the Kingdom of Cambodia: Final Report."
18. Kudo, Toshihiro, and Konosuke Odaka. 2015. "Post-Colonial Industrialisation in Myanmar Toshihiro Kudo and Konosuke Odaka." In *The Myanmar Economy: Its Past, Present and Prospects*. Springer.

19. Mieno, Fumiharu, and Koji Kubo. 2015. "Growth Structure and Macroeconomy Under Twenty Years of Junta Regime in Myanmar." In *The Myanmar Economy: Its Past, Present and Prospects*. Springer.
20. Odaka, Konosuke, ed. 2016. *The Myanmar Economy: Its Past, Present and Prospects*. Springer Japan. https://doi.org/10.1007/978-4-431-55735-7.
21. Otsubo, Shigeru, and Tetsuo Umemura. 1998. "Foreign Direct Investment and Complementarity as Determinants of Intra-APEC Trade Flows: A Gravity Model Analysis." *APEC Discussion Paper* No. 19 (March).
22. Than, Mya. 1992. *Myanmar's External Trade: An Overview in the Southeast Asian Context*. Institute of Southeast Asian.
23. Than, Mya, and Loong-Hoe Tan. 1997. *Laos' Dilemmas and Options: The Challenge of Economic Transition in the 1990s*. Institute of Southeast Asian Studies.
24. Toshihiro, KUDO, and MIENO Fumiharu. 2007. "Trade, Foreign Investment and Myanmar's Economic Development during the Transition to an Open Economy." *IDE DISCUSSION PAPER* No. 116.
25. Trung, Nguyen Tien. 2002. "Viet Nam's International Trade Regime and Comparative Advantage." *Centre for ASEAN Studies Discussion Paper* No 37 (January).
26. U Myint. 2009. "Myanmar Economy a Comparative View." *Institute for Security and Development Policy*, December.
27. Vollrath, Thomas L. 1991. "A Theoretical Evaluation of Alternative Trade Intensity Measures of Revealed Comparative Advantage." *Weltwirtschaftliches Archiv* 127 (2): 265–80.
28. ———. 2003. "Forces Underlying Trade Integration in the APEC Region: A Gravity Model Analysis of Trade, FDI, and Complementarity." *Journal of Economic Integration* Volume 18.No.1 (March): 126–49.
29. ———. 2005. *Myanmar in ASEAN*. Institute of Southeast Asian Studies.

INFLUENCING FACTORS ON MIGRTION AND ITS IMPACTS OF THABAWA NATURE CENTRE IN THANLYIN

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Abstract

Migration has become an important livelihood strategy for many poor groups across the world. As a type of migration, internal migration can take place in almost every society. This study aims to examine factors influencing on migration in Thabawa Nature Center and positive and negative consequences of migration. This study find out the factors influencing on migration to Thabawa Nature Center and its impacts. The study is based on descriptive method and Primary survey method using descriptive statistics. The study found that migrants in Thabawa Nature Center migrated mainly from Thonegwa, Khayan, Bokalay and Phyarpone for seeking job, more income generation, to improve living standard, religious worship and natural disaster. Positive impacts for migrants include obtaining better job opportunities, increased income, better education and health care system; more improved living standards. However, most of the respondents face negative impacts having no sufficient electricity and poor water supply system and environmental problem but with roads availability.

Key words: Migration**,** Factors influencing, Positive impacts, Negative impacts

Introduction

Migration has become an important livelihood strategy for many poor groups across the world. As a type of migration, internal migration can take place in almost every society. The internal migration can take place as a result of change in the structure of society as well as being the cause of some changes by itself. Internal migration is human migration within one geopolitical entity, usually in a nation-state. International migration tends to travel for education and for economic improvement or because of a natural disaster or civil disturbance. Cross-border migration often occurs for political or economic reasons.

Internal migration has an important part of socioeconomic transformation within a country. Managed internal migration can get benefits for countries as well as individuals. However, poorly managed internal migration can result in various difficulties including reproductive and other problems. Internal migration has both direct and indirect impact on population dynamics. Changes in population structure and distribution are direct impacts of migration,

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whereas behavioral changes among migrants are indirect impacts. When people migrate, they may face new social, cultural and economic environments that could offer them different opportunities.

Internal migration can be classified into four groups; rural to rural migration, urban to urban migration, rural to urban migration and urban to rural migration. In Myanmar, Rural to Rural migration was about 26% in 2007. Urban to Urban migration was 65% in 2007. The proportion of Rural to Urban migration was about 25% in 2007.(Levels, Trends and Patterns of Internal Migration in Myanmar,2013).Urban to Rural movement in Myanmar was about 9% in 2007. Like in other South-East Asian countries, it is the least significant movement within four groups. Of these, rural to rural migration and urban to urban migration are the most prominent migration streams in Myanmar.

Thanlyin Township is located in Yangon South District. Yangon South District consists of eleven Townships including Thanlyin Township which is the most populated area and has total population over of 260,000. The migration of Thanlyin Twonship increased after 2008. Thabawa Nature Center is situated in Thinlyin Township. This study focuses on migration in Thabawa Nature Center in Thanlyin Township and the main purpose is to find out the factors of influencing on migration.

Objectives of the Study

The objectives of the study are

- To examine factors influencing on migration in Thabawa Nature Center
- To describe the current situation of migration in Thabawa Nature Center
- To explore the negative and positive impacts of the migration

Methods of the Study

The study is based on descriptive method and Primary survey method. Survey is carried out by using simple random sampling method. Open-ended and close-ended questions are used to explore the factors influencing on migration and its impacts on households. 400 households are selected to conduct survey from the center. The information of the background data is taken from secondary sources from the center.

Literature Review

Factors affecting migration have the positive impacts and negative characteristics of both the origin and destination. Push factors could involve expensive housing costs, growing gridlock,

rising crime rate, poor climate or lack of sufficient income. Pull factors could include higher paying job, good infrastructure, a pleasant physical setting, availability of suitable housing, and a good climate. However, it was also observed that a push factor for some people could be a pull factor for others (Kuby et al., 2003).

People move for different reasons. These differences affect the overall migration process. Theories of migration are important because they can help us understand population movements within their wider political and economic contexts. Ernest Ravenstein is widely regarded as the earliest migration theorist. Ravenstein used census data from England and Wales to develop his "Law of Migration'' (1889). He concluded that migration was governed by a "push-pull'' process; that is, unfavorable conditions in one place (oppressive laws, heavy taxation, etc.) "Push'' people out, and favorable conditions in an external location "pull'' them out. Ravenstein's law started that the primary cause for migration was better external economic opportunities; the volume of migration decreases as distance increases; migration occurs in stages instead of one long move; population movements are bilateral; and migration differentials (e.g., gender, social class, age) influence a person's mobility.

Everett Lee (1996) reformulated Ravenstein's theory to give more emphasis to internal (or push) factors. Lee also outlined the impact that intervening obstacles have on the migration process. He argued that variables such as distance, physical and political barriers, and having dependents can impede or even prevent migration. Lee pointed out that the migration process is selective because differentials such as age, gender, and social class affect how persons respond to push-pull factors, and these conditions also shape their ability to overcome intervening obstacles. Furthermore, personal factors such as a person's education, knowledge of a potential receiver population, family ties and the like can facilitate or retard migration.

Lee's Theory of migration mainly emphasizes on the push-pull factors. Push and Pull factors are forced that can either induce people to move a new location or oblige them to leave old residences. People migrate for a number of reasons. These reasons may fall under these four areas; Environment, Economic, Cultural and Socio-political. Within that, the reasons may also be 'push' or 'pull' factors.

Push factors are those that force the individual to move voluntarily, and in many cases, they are forced because of the individual risk for their lives. Push factors are the reasons why people leave an area, which compose of lack of the services, lack of safety, high crime, flooding, poverty and war. Economic push factors include overpopulation, lack of job opportunities, low wages etc. These factors tend to push people to look for their futures outside the area of their origin. Civil wars and insurgencies are the political push factors.

Socially, push factors affecting on migration are intolerance towards a certain cultural group and active religious persecute. Poor economic activity and lack of job opportunities are also strong push factors for migration. Finally, physical push factor include natural disaster and the impact of climate change that affect rural livelihoods.

In contrast, Pull factors are those factors in the destination country that attract the individual or group to leave their home. Those factors are known as place utility, which is the desirability of a place that attracts people. Pull factors may include better economic opportunities, more job, better living conditions, political and/ or religious freedom, enjoyment, education opportunities, better medical care and security. Migration usually happens as a result of a combination of those push and pull factors. Physical pull factors include delightful environments, such as mountains, seaside and pleasant climate that affect the migration. Political conditions can also operate as pull factors, especially freedom. People are attracted to live in democratic countries that encourage individual choice in education, employment and residence. Migration usually happens as a result of a combination of these push and pull factors.

People migrate when the current value of expected benefits exceed the expected costs of moving. People have been migrating to another place due to religious, political and economic factors and the outmigration or emigration has also taken place. Mosse et al., (2002) concluded that migration is affected by the social structure of the society. Seasonal migration is also often caused by inter-regional disparities and differences between socio-economic classes of the society and development policies. The literature available on migration distinguishes between push and pull factors of migration which are often integrated together and not in isolation. People migrate from one area to another when they do not find suitable means of livelihood or employment or might think of fruitful expectations of making such a movement.

Background Information of ThaBaWa Nature Center

Thabawa Nature Center is located in Thanlyin Township of Yangon South District in Yangon region of Myanmar. It was established by Ashin Ottamasara, the abbot of the Center, in 2008 with 3 acres initially at Thanlyin donated by a retired military officer. By now, the total area of Thabawa nature center in Thanlyin is about 85 acres, home to over 10,000 people.

In 2012, Satanar village, one of a series of communities was established by U Ottanasara to provide land, food and shelter to those lacks of adequate housing in free of charge. The

Sayardaw agreed to provide plots measuring 225 square feet to the homeless and poor families who came to Sayardaw. The village has 28 acres and most of the residents are casual laborers. The village has been full but homeless people continue to register for meditation courses and the Sayardaw is planning to set up another Saytanar village on a 180- acre site at Yangon Region's Hlegu Township. Half of the land was used to provide housing for the poor people and the other half for a meditation center.

Thabawa Nature Center in Thanlyin, is a non-profit humanitarian organization working for a noble cause. Thabawa Center was established with unlimited access for general benefit and is fulfilling the most crucial needs continually and persistently step by step. Thabawa Nature Center is opened full-time, 24 hours a day, seven days a week without recess. It is the sanctuary for persons from all regions of Myanmar who seek refuges for care and attention and desire to practice meditation. The center provides sanctuary for more than 2,400 Yogis (as of February 2014) including aged persons, sick persons , the infirm, the blind, the deaf, the disabled, people with mental cases, homeless and helpless ones. Sanctuary provides without discrimination or restriction as to number, time, age, health condition, nationality, social status, religion, etc. Food, lodging and teaching are provided free of charge.

The Center is trying to help the people in need, the old aged, the patients, and the homeless people. This place is now well-known for offering help to anyone in need. The center provide food, offer shelter to the people and educate children apart from helping others. This is a home for all, for the whole family. People can participate in the center's activities according to their own wish, for right understanding and good benefits. In this way, everybody can learn about meditation and doing good deeds by direct practice and experience.

Table (1) Population of Thabawa Nature Centre in Thanlyin

Sr. No.	Particular	Over 18 Years			Under 18 Years			Total		
		M	F	Total	M	F	Total	M	F	Total
1	Centre	1376	1589	2965	23	61	84	1399	1650	3049
2	Village	3464	3819	7283	503	837	1340	3967	4656	8623
Total population		5195	5053	10248	526	898	1424	5366	6306	11672

Source: Thabawa Nature Center, Thanlyin (2019)

According to table (1) Thabawa Nature Centre's total population is (11672). The number of male population is 5366 and the number of female population is 6306. As mentioned above, the number of female is more than the number of male. Among them, there are 518 monks

and 394 nuns, number of male yogis is (843), number of female yogis is (1140) and the number of volunteers is (70).

The following table (2) shows total number of over 60 aged yogis is in centre. Most of the yogis are between 60 and 70 years of age, amounting to (46%) and the second largest number of yogis is between 70 and 80 years (36%), between 80 and 90 is (16%) and over 90 years of age is (2%).

Table (2) Number of over 60 Year-Age Yogis in Centre

Sr. No.	Age	Male	Female	Total population	Percent
1	Over 90	6	17	23	2
2	80-90	46	103	149	16
3	70-80	117	222	339	36
4	60-70	195	236	431	46
	Total	364	578	942	100

Source: Thabawa Nature Center, Thanlyin (2019)

Empirical Analysis

400 households were surveyed among 2400 households in Thabawa Nature Center in Thanlyin Township, Yangon Region. Survey was carried out in selected area by using simple random sampling method and face to face interview. In the interview, some respondents are household heads as well as others are household members. Structured questionnaire is used to discover the demographic condition, economic condition, history of migration, job and income condition, influencing factors of migration and its impacts.

Background of the Respondents

To explore the demographic condition of the respondents, questions relating to migrants' gender, age, educational qualification, marital status, family size are asked to respondents. Table (3) shows the demographic conditions of the migrants in Thabawa Nature Center.

Table (3) Demographic condition of Migrants

Sr.No.	Indicators	Frequency	Percent
1	Gender		
	Male	179	44.7
	Female	221	55.3
	Total	**400**	**100**
2	Age(Year)		
	18-28	39	9.7
	29-39	106	26.5
	40-50	74	18.5
	Above 50	181	45.3
	Total	**400**	**100**
3	Race		
	Kachin	4	1.0
	Kayin	2	0.5
	Myanmar	369	92.2
	Mon	3	0.8
	Rakhine	8	2.0
	India	14	3.5
	Total	**400**	**100**
4	Religion		
	Buddish	395	98.7
	Christian	1	0.3
	Hindu	4	1.0
	Total	**400**	**100**
5	Marital status		
	Married	345	86.3
	Single	55	13.7
	Total	**400**	**100**
6	Educational qualification		
	Primary	155	38.7
	Middle school	150	37.5
	High School	58	14.5
	University Graduate	14	3.5
	Other	23	5.8
	Total	**400**	**100**
7	Family size		
	1-3	187	46.7
	4-6	123	30.8
	Above 6	90	22.5
	Total	**400**	**100**

Source: Survey Data (2019)

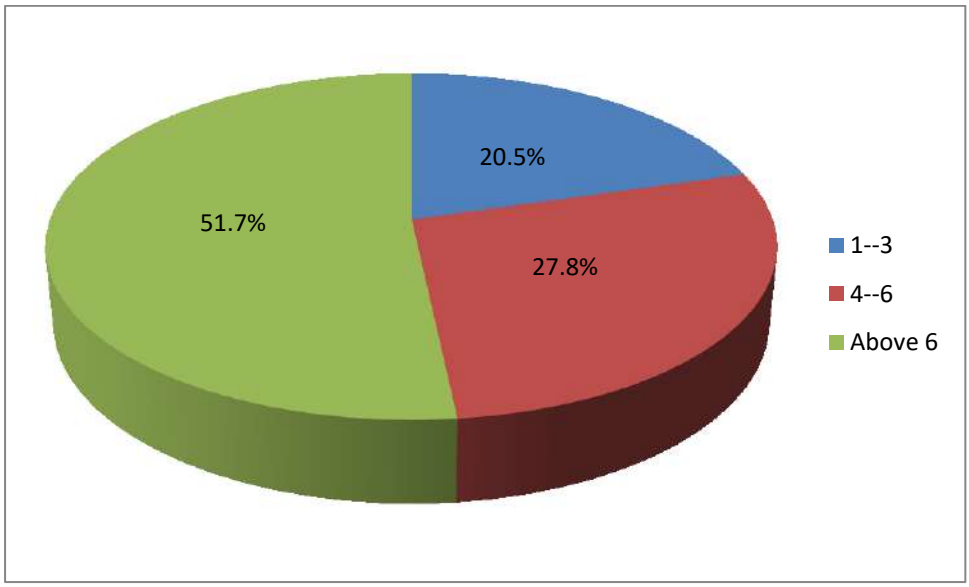
According to the survey, majority of the migrants from Thabawa Nature Center in Thanlyin Township are female covering (55.3%) of the total while mostly ages are above 50 years (45.3%) and second largest group is between 29 and 39 years (26.5%). The least percent of the migrants are age between 18 and 28 years (9.7%). Most respondents are Myanmar (92.2%) followed by India (3.5%), Rakhine (2%), Kachin (1%), Mon (0.8%) and Kayin (0.5%). Among migrants, (86.3%) married followed by (13.7%) of single. 38.7% of the migrants have primary education whereas middle education accounting for (37.5%). The percentage of high school and university graduates is very few ,amounting to (14.5%) and (3.5%) respectively , and other qualifications , (5.8%) which are included monastery

education etc. The family size of most migrants are between 1 and 3 (46.7%), 4 and 6 (30.8%) and above 6, (22.5%) respectively.

Years of the Migrants' Settlement

The following chart (1) shows the year of the migrants' settlement. According to the responses of the families, most migrants have moved to Thabawa Nature Center for over 6 years. This covers (51.7%) of the total followed by between 4 and 6 years is (27.8%) and between 1 and 3 years is (20.5%) respectively.

Chart (1) Years of Migrats' Settlement at Thabawa Nature Center



Source: Survey Data (2019)

Major Connection of Migration

The following table (4) shows the main networks of migrants.

Table (4) Major Connection of Migration

Sr. No.	Connection of migration	Frequency	Percentage
1	Relatives	212	53.0
2	Friends	184	46.0
3	Brokers	4	1.0
Total		400	100

Source: Survey Data (2019)

Owing to the Survey, most migrants moved to urban areas through the links of relatives (53%) followed by friends (46%) and brokers (1%) respectively. It is found that quite number of the migrants follow their relatives who have migrated to Yangon Region previously as their family thought that linking with relatives are more secure in migrating to Yangon. Those who contacted with brokers are generally the poor and they have low level of education.

Job Categories of the Migrants

Table (5) indicates that major jobs of migrants before they moved to Thabawa Nature Centre. People from Thanlyin are agricultural workers with (38.3%), casual laborers with (14.8%), trading (14.5%) and fishing (7.8%). After moving to Thabawa Nature Center, Thanlyin, agricultural and fishery workers decreased to (1.5%) and (0.2%) respectively. Factory workers, casual workers and traders increased by (11.2%), (20.3%) and (23.2%) respectively. Most of the migrants are working agricultural field before moving present place especially Thonegwa and Bokalay. Factory worker, trader, casual and carry increased nearly double. Other job categories of the migrants encompasses retail-sellers, construction worker, restaurant employees and brokers etc.

Table (5) Job Categories of the Migrant People

Sr. No.	Types of Jobs	Before		After	
		Frequency	Percent	Frequency	Percent
1	Agriculture	153	38.3	6	1.5
2	Fishery	31	7.8	1	0.2
3	Factory Workers	12	3.0	45	11.2
4	Trader	58	14.5	93	23.2
5	Own Business	11	2.8	29	7.2
6	Government Staff	23	5.8	16	4.0
7	Company Staff	18	4.5	24	6.0
8	Casual	59	14.8	81	20.3
9	Carry	4	1.0	31	7.8
10	Others	14	3.5	11	2.8
11	Jobless	17	4.3	63	15.8
Total		400	100	400	100

Source: Survey Data (2019)

Income Conditions of the Respondents

As presented in Table (6), income of most migrants before migration is fewer than 50000 and between 100000 and 200000, (27.7%) and (25.7%) respectively. After migration, most of the villagers' incomes have increased between 200000 and 300000 (24.8%). Most of them have changed their fields from agricultural to factory workers and carry. This is one of the positive effects due to migration.

Table (6) Income Conditions of Respondents

Sr. No.	Income(Kyats)	Before		After	
		Frequency	Percent	Frequency	Percent
1	Under 50,000	111	27.7	58	14.5
2	50,000-100,000	86	21.5	55	13.7
3	100,000-200,000	103	25.7	98	24.5
4	200,000-300,000	55	13.8	99	24.8
5	Above 300,000	45	11.3	90	22.5
Total		400	100	400	100

Source: Survey Data (2019)

Influencing Factors of Migration

In this survey, influencing factors of migration are classified as social factors and economic factors. All of these factors can be regarded as push and pull factors that causes migration internally. Under economic factors, there include job opportunity, better income, doing own business. Seeking for a job is a push factor and getting increase income and doing own business are pull factors. Social factors include religious worship, abnegation, living standard, natural disaster, health, education and other factors. Religious worship, getting physically and mentally safe, better healthcare and better education are pull factors. Abnegation and natural disaster are push factors.

According to the table (7), it is found that respondents highly agree all economic factors, which include job, income, to do own business. Among these reasons, the main reason for internal migration is seeking for jobs, (56.2%) followed by gaining more income generation, (16%) and to do own business, (14.8%). To achieve more income was the second major factor for those who had moved locally. Other factors include getting free land from Sayardaw, to get own house for expensive housing price in downtown Yangon etc.

Table (7) Economic Factors for Migration

Economic Factors	Frequency	Percent
Seeking Job	225	56.2
Income	64	16.0
Doing own-business	59	14.8
Others	52	13.0
Total	400	100

Source: Survey Data (2019)

Owing to the study, the social reasons for internal migration are religious worship, abnegation, physically and mentally safe, natural disaster, health, education and other factors. Most common reasons for migration are to improve physically and mentally safe, to avoid natural disaster and to get religious worship. In table (8), the major influencing factor is to improve physically and mentally safe with (35.7%) followed by natural disaster, (19.5%) and religious worship, (12.7%). In 2008, Cyclone Nagis affected Phyapon and Bokalay in Ayeyarwaddy Region and many people were displaced to Yangon region. Moreover, many people moved to improve their family health and education. At the same time, it is found that other influencing factors for internal migration include expensive housing price, marriage in that area, physical and mental relaxation etc.

Table (8) Social Factors for Migration

Social Factors	Frequency	Percent
Religious worship	51	12.7
Abnegation	1	0.3
Physically and mentally safe	143	35.7
Natural disaster	78	19.5
Better health care	42	10.5
Education opportunities	26	6.5
Others	59	14.8
Total	**400**	**100**

Source: Survey Data (2019)

Negative Impacts of Migration

Majority of the respondents highly agree on negative impacts such as insufficient electricity and water supply system, and environmental problems. This means that they have no access

to have clean environment and safe environment and do not have good infrastructures and job discrimination. Among the impacts, the main impacts of migration for both sex are not able to have electricity, (59.5%) followed by environmental problem, (18.7%) and water system problem, (8.2%) , no availability of good infrastructure, (0.5%) and job discrimination due to migration, (0.3%) respectively.

Table (9) Negative Impacts of Migration

Negative Impacts Causes Migration	Frequency	Percent
Insufficient electricity	238	59.5
Water system	33	8.2
Environmental Problem	75	18.7
Infrastructure	2	0.5
Job discrimination	1	0.3
Others	51	12.8
Total	400	100

Source: Survey Data (2019)

Positive Impacts of Migration

According to the survey data, the main positive impacts of migration are classified as increasing income, better job opportunities, better education and health care system, and more improve physically and mentally safe. Both increasing income and better job opportunities play as significant positive impacts in internal migration for respondents, amounting to (25.7%). The following largest positive impacts of migration are physically and mentally safe (17.3%) and better health care system (15.3%) respectively. Other positive impacts include getting free land, living at own houses, near Yangon city etc.

Table (10) Positive Impacts of Migration

Positive Impacts Causes Migration	Frequency	Percent
Increase income	103	25.7
Better job opportunities	103	25.7
Better education	20	5.0
Better healthcare system	61	15.3
Physically and mentally safe	69	17.3
Others	44	11.0
Total	400	100

Source: Survey Data (2019)

Findings and Suggestions

Most of the migrants are females and Buddhists with over 50 years of age. A number of people have finished their primary school and high school level education. Most of the migrants are families with between 1 and 3 members. Most of the respondents have migrated to Thabawa Nature Center for 4 to 6 years. Majority of the respondents face negative impacts that have no sufficient electricity and water supply system and environmental problem but with roads availability.

Majority of migrants are working in agricultural sector before moving in Thabawa Nature Centre. However, after moving to that area, they are working in private factories and in public sectors. This reduces workforce and production in agricultural sector. Majority of the migrants are engaging as traders, casual laborers, retirees and factory workers in private factories. It was also observed that most of the migrants in this Thabawa Nature Centre are willing to get better education and health care system for their children. Therefore, they migrated to place near urban area.

Positive effects include better job opportunities, increased income, better education and health care system; more improved living standard. Negative impacts consist of insufficient electricity, water supply system and environmental problem that are core negative effect due to migration in that area. Current migration of skilled and unskilled workforce from Thabawa Nature Center is due to the main reason of seeking job, income and natural disaster. Among these factors, seeking job is the largest factor, while central government should create to get better job opportunities throughout the country, local government should provide needed support for Thabawa Nature Centre in Thanlyin to improve their living standard and life.

Needs for Further Research

This study provides only some information influencing factors on migration and its impacts in Thabawa Nature Center in Thanlyin. This study cannot provide conclusive evidence regarding all migration issues, reasons and impacts in Myanmar. Therefore, further research should be conducted the below scope;

1. The impact of migration on gender equality and women's empowerment
2. The effect of internal migration on the use of reproductive and maternal health service
3. The impact of rural and urban migration on urban employment, incomes, housing and so on
4. The relationship between migration and development

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References

1. Burmeister, S., Andresen, M., Anthony, D. W., Cameron, C. M., Chapman, J., Eggert, M. K.& Burmeister, S. (2000). Archaeology and migration: approaches to an archaeological proof of migration. *Current Anthropology*, *41*(4), 539-567.
2. Chant, S. (1998). "Households, gender and rural-urban migration: reflections on linkages and considerations for policy". *Environment and Urbanization*, *10*(1), 5-22.
3. Dang,N.A(2003)."Internal Migration Policies in ESCAP region",Asia-Pacific Population Journal.
4. Guest,P (2003). "Bridging the Gap: Internal Migration in Asia". http://igcse-geography-lancaster.wikispaces.com/1.2+MIGRATION
5. International Organization for Migration,(2005). Internal migration and development: A global perspective. *IOM Migration Research Series No.19*.
6. Khadria, B. (2006). India: Skilled migration to developed countries, Labor migration to the Gulf. *Migración y Desarrollo*, (7), 4-37.
7. Maklakova, N. V., Khovanskaya, E. S., & Grigorieva, L. L. (2017). An investigation into self-translation. *Journal of History Culture and Art Research*, *6*(4), 1260-1267.
8. Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., & Taylor, J. E. (1993). Theories of international migration: A review and appraisal. *Population and development review*, 431-466.
9. Menon, R.(2005) " Migration Development and Poverty Reduction Asia, (ION, Bergen).
10. Ministry of Immigration and Population (2015). *The 2014 Myanmar Population and Housing Census*, Yangon Region census Report Volume 3-l

11. Mishra, P. B. Mishra, and Dixit, J. S (2014).“Internal Migration and Current Use of Modern Contraception Methods among Currently Married Women Age Group between(15-49) Years in India.”
12. Naba Raj Thapa,(2018) “The effect of Internal Migration on the use of Reproductive and Maternal Services in Nepal", DHS Working Paper No.140.
13. Nyi, Nyi. (2013). Levels, Trends and Patterns of Internal Migration in Myanmar.
14. Ochako, R. I., Askew, J., Okal, J., Oucho and Temmerman, M. (2016). “Modern Contraceptive Use among Migrant and Non-migrant Women in Kenya”.
15. Santelli, J. S., Abraido-Lanza, A. F., & Melnikas, A. J. (2009). Migration, acculturation, and sexual and reproductive health of Latino adolescents. *Journal of Adolescent Health*, *44*(1), 3-4.
16. Thida Htwe., Swe Swe Toe and Aye Aye Mon. (2019). “Internal Migration and the use of Modern Contraceptive of the 2015-2016 Myanmar Demographic and Health Survey”.
17. UNESCO Bangkok, (2016) “Overview of Internal Migration in Myanmar” UNESCO Bangkok.
18. World Bank (2011). *Domestic Migration in Two Regions of Myanmar*.
19. World Economic Forum, October 2017 “Migration and its Impact on Cities,”

Thailand's New Special Economic Zone Policy, and The Migrant Labour Market Situation in Mae Sot 1990-2019

Moe Thida Lwin[1]

Abstract

This paper is about migrant labour in Mae Sot, Thailand. The qualitative study is designed to analyze in the Mae Sot Special Economic Zone and the segmented migrant labor market. Push/pull theory is used to examine the external and internal factors of the labour market situation. The period of analysis is 1990-2019, which was a period of rapid development along the Thai-Myanmar border. This period led to the establishment of a Special Economic Zone in Mae Sot, in 2015. Political, economic and social aspects are the major external push factors from Myanmar. Internal factors found that Thailand's economic growth and local labour market demands sectors were pull factors. The higher paying jobs of the Special Economic Zone in Mae Sot were attractive, so migrant labourers came to Mae Sot to earn money. But in recent years, Myanmar's economic restructuring and labour demand has shifted, and migrant labourers are considering return. If this is the case, then the Mae Sot in Thailand may be confronted with a labour shortage. Nevertheless, it is predicted that the future trend of immigrant labourers in Mae Sot can continue and even lead to growth. The large supply of labour from Myanmar still benefits Thailand in terms of their "cheap labour cost." To maintain this migrant labour pool, factory owners should improve the labor skills and a measure of social security. This could sustain a longer term employment future in the labour market.

Keywords: Push and pull, Migrant Labour Market, Special Economic Zone, Thailand, Myanmar

Introduction

This paper analyzes the labour market in Mae Sot, Tak province, Thailand which in 2015 became a Special Economic Zone (SEZ) under Thai law. This happened in the context of labor migration, refugee flow, and population movement from neighboring Karen State, Myanmar, which was disrupted by decades of violent insurgency. To understand the nature of the labour market in Mae Sot SEZ, it is necessary to understand not just wage differentials, but also the political dynamics that refugee flight and war bring.

This paper uses "push pull theory, and historical-structural analysis to understand the phenomenon of industrial development in the Mae Sot area of the migrant labour market and how it impacts the Mae Sot Special Economic Zone. The strong push factors in Myanmar are

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poor economic activity and lack of job opportunities from the source country. Pull factors are economic opportunities, more jobs, and the promise of a better life in Thailand.[2]

The research question for this paper asks how labour migration from Myanmar to the Special Economic Zone in Mae Sot will affect the labour market.

Findings highlight the political, economic and social aspects behind the migrant labor situation. There were low income and wage, unstable occupation, unemployment, few job opportunity, inadequate income to sustain the cost of living. Most Myanmar economic development is centralized in urban areas while Thailand, expended more of its industrial to rural areas for the economic development. Moreover decades of civil wars and force labor were motivated to migrate cross the border town Mae Sot, Tak, Province, Thailand.

Internal factors reflected Thailand's economic growth and the local labor market needs for unskilled workers since Thailand began with industrializing in the 1970s. Factories were at first mostly in the greater Bangkok area, and labor demand was met by workers from rural Thailand, mostly from the north and northeast. But during the economic boom in the Middle East and East Asia in 1980s the Thai workers migrated to the Persian Gulf region. Industrial development and labor demand were no longer fulfilled by local labor supplies.

(a) Background of Mae Sot Special Economic Zone

"Establishment of the SEZ was a major priority, and will be launched in early 2016, Thailand's Deputy Prime Minister General Prawit Wongsuwon said.[3]

"First the main objective of the SEZ is to attract foreign direct investment (FDI) in manufacturing which will generate employment, improve living conditions through income distribution, improve border area security, and enhance Thailand's competitiveness with the ASEAN Economic Community (AEC) 2015 of the SEZ.

Second, Mae Sot is a vital gateway bringing trade, investment, and tourism to Yangon, Myanmar and a manufacturing base for the Myawaddy Economic Zone (EZ) in Myanmar, located just 10 kilometers away. There is a great possibility for establishing parallel projects with EZ projects in Myanmar that will help enhance bilateral trade and investment. Mae Sot

[2]In an integrated approach, Supang Chantavanich described the impact of transnational migration on the border community in Mae Sot by examining the economic, social, cultural, political/legal, and health impacts of the increasing labor migration (Supang 2008). Dennis Arnold also examines the political economy of Mae Sot, with an eye on local and state-level authorities and agencies that operate to maintain the Special Border Economic Zone, the legitimizing of cheap labor and labor conditions, and how workers have coped in the face of this (Arnold and Hewison 2005; Arnold 2007).

[3] Establishment of Special Economic Zones, National Bureau of Thailand, Special Reports (November 1, 2015) , the two priority special economic zones(SEZs) will be established in Mae Sot district in the northern province of Tak and in the eastern province of Sa Kaeo. Tak Shares its border with Myanmar, while Sa Kaeo is connected with Cambodia.

is a destination for low-skilled workers from Myanmar. These workers will be essential for labor-intensive industries, such as textiles, apparel, and leatherwear."

Geographically, Mae Sot also benefits from being on the ASEAN East West Economic Corridor (EWEC) which runs from Viet Nam and Myanmar, with potential for warehouse, distribution, and logistics centers.

Mae Sot today has the highest concentration of Myanmar in Thailand. The Myanmar population of Mae Sot, which includes ethnic Karen, Myanmar, and others is said to outnumber the Thai population two to one. But the exact number of Myanmar in Mae Sot is unclear. 121,062 residents were recorded in 2010[4], but an additional 106,000[5] migrant workers are estimated to be living in Mae Sot City; many are working in the country illegally. Mae Sot is a trade hub and situated in a border district of Tak province, roughly 500 km northwest of Bangkok. It is across the Moei River (Thaungyin River) from the township of Myawaddy, Myanmar. *(See Figure 1)* Myawaddy is a small border town with a population of 210,540[6] and one of three industrial zone projects in Myanmar's Karen State. Mae Sot and Myawaddy are connected by the "Thai-Myanmar Friendship Bridge", completed in 1997, and funded by the Thai government. The two towns are a border gate in the Greater Mekong Sub-regions (GMS) East West Economic Corridor (EWEC) connecting Da Nang in Viet Nam and Mawlamyine in Myanmar in the west, via Laos and Thailand. *(See Figure 2)* The East – West Economic Corridor aims to integrate physical infrastructure and link them to economic initiatives based on streamlined policies and procedures that facilitate linkages along the geographic corridor (ADB 2009).

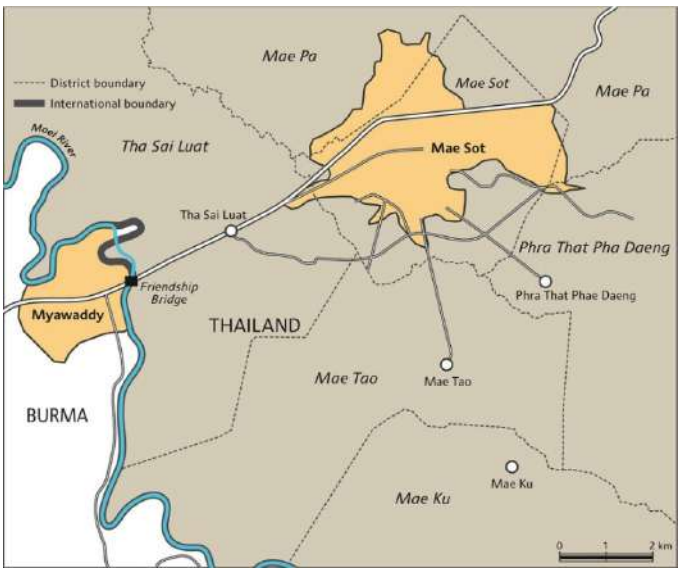


Figure 1: Mae Sot – Myawaddy

[4] Thailand City Population Census in 2010
[5] Mae Sot City Census 2010
[6] 2014 census of Myanmar

Geographically, Mae Sot is closer to Myawaddy (2014 population 195,624), eighteen kilometers away, than to the provincial capital of Tak (2007 population 98,493), eighty-six kilometers away- in other words, closer to Myanmar than other Thai communities. The Moei River is narrow, allowing Myanmar people to travel to and from Mae Sot illegally by across, or land by walking in the dry season.

There is a long history of cross-border movements of people and goods between Mae Sot and Myawaddy. Primarily an agriculture area, Mae Sot relied on economic trade with Myawaddy, and the two towns traditionally share a market and labour force. In the last thirty years, as a result of the Thai state's policies locating industry to the border area, Mae Sot has been transformed from a trade area to an industrial hub linked to Bangkok and other commercial centers by the transportation corridor in particular.

There are nine districts in Tak Province. The five border districts (amphur) of Mae Sot, Mae Ramat, Phrop Phra, Um Phang and Tha Song Yang are host to between 200,000-300,000 migrant labourers from Myanmar, according to the Mae Sot Labour Protection Department (interview, 20 July 2017). Mae Sot is the economic center of the five border districts, but Meuang Tak (City of Tak) is the provincial capital.[7]

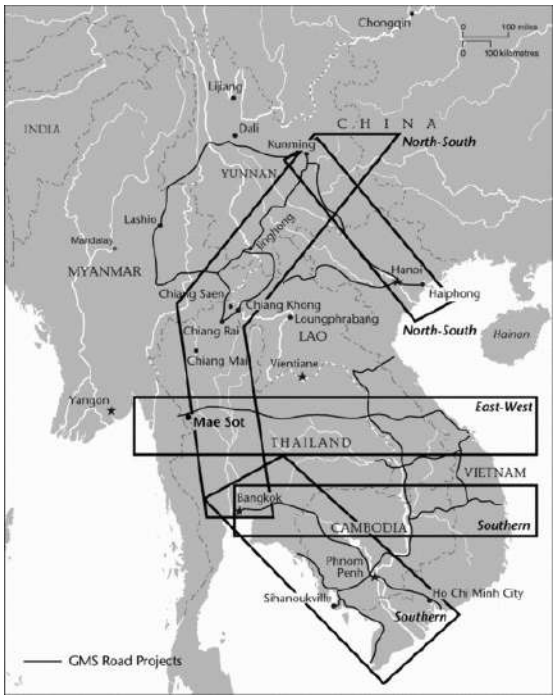


Figure 2: Greater Mekong Sub-region (GMS) and economic corridors

[7] **Mae Sot** (Thai: แม่สอด,) is a district in western Thailand that shares a border with Myanmar to the west. It is notable as a trade hub and for its substantial population of Burmese migrants and refugees. The town is part of Tak Province and is the main gateway between Thailand and Myanmar. As a result, it has gained notoriety for its trade in gems and teak, as well as black market services such as people trafficking and drugs. Neighboring districts are (from north clockwise): Mae Ramat, Mueang Tak, and Phop Phra. The Moei River serves as a natural border between Mae Sot and the Burmese town of Myawaddy. https://en.wikipedia.org/wiki/Mae_Sot_District.

Traditionally, Thailand's SEZ strategy focused on strengthening the general business environment in specific protected settings to compensate for existing constraints in the wider domestic economy. The border area at Mae Sot and Myawaddy has the potential for significant mutually beneficial development, utilizing the complementary factor endowments of the two countries. Thailand is increasingly concerned about the challenges of "middle-income trap" and losing competitiveness in labour-intensive activities because of rising wages and more intense competition from lower wage economies in key export industries such as garments. This led to a strategy of focusing on outward investment by Thai enterprises and the relocation of labour intensive activities, particularly to neighboring countries like Myanmar.

(b) Why Mae Sot is Important Today, and Growth in 1990-2019

Mae Sot is important today for two major economic activities: cross-border trade and industrialization.

Since the establishment of Mae Sot District (Amphor) in 1898, especially populated Mae Sot occupied the entire border area of Tak province, almost half of Tak's total area. Moreover, the Tak Chamber of Commerce and Tak Industrial Council, which are the key business associations located at Mae Sot District. Mae Sot also has own domestic airport. The airport which gained status as an international airport, connecting domestic and international flights in and out from Mae Sot to Yangon in 2017. Mae Sot is 447 kilometers from the major port of Yangon [8] which is slightly closer from Bangkok, it is 165 kilometers from the Port of Mawlamyine in Myanmar.

Mae Sot city is today undergoing an unprecedented boom, riding on growth from Myanmar's recently opened economy and a strategic position as a regional transport hub. Twenty new hotels sprung up, catering to Thai investors, according to the Tak Chamber of Commerce (TCC). The border region, several kilometers west from central Mae Sot, includes the **Rim Moei Market** that deals in imported goods and woodwork. The city is also a hub for black market, human trafficking, and narcotics. Border trade skyrocketed since 2012, and modern shopping malls and an International hospital recently opened its doors to locals, migrants, and the wealthiest visitors from Myanmar, especially the cities of Yangon, Mawlamyine, Mandalay, and Hpa-an. The Thai government built a second bridge across the Moei River in 2017 to facilitate even more trade. It is also intended to facilitate economic development along the East-West Economic Corridor (EWEC) initiated to promote development and integration of five Southeast Asian Countries Myanmar, Thailand, Laos, Cambodia and Viet Nam, and enhance the Natural Strategic Partnership between Thailand and Myanmar. The bridge officially opened in October 2019. In 2018 the border trade between the Thailand and

[8] **Yangon** (Burmese: ရန်ကုန်မြို့ Formerly known as **Rangoon**) is the capital of the Yangon Region of Myanmar. Yangon served as the capital of Myanmar until 2006, when the government relocated the capital to Nay pyi Taw in central Myanmar. With over 7 million people, Yangon is Myanmar's largest city and its most important commercial centre.

Myanmar is 190 million Thai Baht, 78 billion Thai Baht is through by Mae Sot district (Pinitwong, 2019).

The major goods exported through the Mae Sot border checkpoint to Myanmar are traditionally diesel and benzene oils, vegetable oil, motorcycles, woven cloth, fishing net, human drugs, and consumer goods. Major imported commodities to Thailand are traditionally wood, sea aquatic products, live cattle, and agricultural products. Cross-border trade between Thailand and Myanmar through the Mae Sot-Myawaddy checkpoint totaled more than 60 billion Thai Baht in the fiscal year ending in September 2015, a rise of 12.30% over the 2013-2014 year.[9]

The Thai Government is promoting the Mae Sot-Myawaddy development model as a border trade opportunity for the Thai private sector. The logistics system is under development from Mae Sot to Myawaddy. Mae Sot is viewed as a gateway to connect ASEAN to India and other countries at a lower cost than maritime transport.

More migrants from Myanmar arrived in the 1990s for mainly economic reasons. Migration to work in factories in the greater Bangkok area began for both ethnic and Myanmar people. Since 1992, Thailand officially recognized the arrival and departure of migrants from Myanmar into Thailand's labour market by establishing a system of work permits. During these periods, Thailand moved from low-end labour-intensive operations to more capital- or technology-intensive manufacturing. Now the Thai government seeks long term competitiveness for cross border labour migration policy.

From the early to mid-1990s, small-scale businesses were established, and export-oriented textile garment production was initiated in Mae Sot. Following the Asian financial crisis of 1997, bigger factories were put up and focused production in the border town of Mae Sot. The place is a rising industrial center for the textile and garment industry in Thailand. The garment industry aims to reduce production costs by hiring migrant labourers who are seen as desperate and therefore easily exploited; they often hire below the prevailing minimum wages. Probably more than 200,000 Myanmar migrant labours are employed on goods highly flexible work "contracts". In Mae Sot, the minimum wage is (see table 1).[10]

[9] source: Custom office data in 2015

[10] Thailand: Minimum wage rate set to change for 2016. The Permanent Secretary of the Labour Ministry announced in early June that Thailand's nationally set daily minimum wage, currently set at **300 Baht** (approximately US $9) in 2013, will cease at the end of 2015

Table 1: Tak Minimum Daily Wage (2010-2020)

Year	Daily Minimum Wage (Local Currency)	Daily Minimum Wage (US$)
2010	153 THB	5.10
2011	162 THB	5.40
2012	226 THB	7.53
2013-2016	300 THB	10.00
2017-2019	310 THB	10.33
2020	315 THB	10.50

Source: Ministry of Labour 2010-2020 (Thailand)

Thus the bigger story for Mae Sot is labour migration. The labour migration to Mae Sot started in late nineteenth century because of the trade opportunity and the abundance of agriculture land at the border area.[11]

Migration is the act or process of moving from one place to another with the intent of staying for a relatively long time or even permanently (Longman 1992). People move from one place to another to work or to settle. As basic factors, migration takes place in areas where migrants believe that their opportunity and life circumstances will be better. In Thailand, migrant labourers affected the country's economic growth and had success at the national and regional level. Migrant labourers contributed to Thailand's national output, and this is especially true for sectors such as agriculture, construction, and industry established in Mae Sot, particularly garment factories which take advantage of cheap Myanmar labour. This is why it is estimated that 2.3 million illegal and legal migrants lived in Thailand in 2019 (Thailand Migration Report, 2019).

Border town Myawaddy is attraction for the Thai people to establish the factory. Myawaddy is the Myanmar second largest trade zone, and border town on Mae Sot -Thailand. The industrial zone area in Myawaddy is 969 acres, and more than 40 business in this area, and a knitwear factory by Hong Kong based Fulltex company created more than 2,000 local jobs (Invest Myanmar, 2019). Thailand based factories were moved in Myawaddy economic zone before 2019, and hired local labour from Myanmar. Since late 2016, a total of US $ 28.45 million has been invested by foreign companies, and domestic companies invested MMK 31.9 billion, most of the sectors are tourism and real estate.

[11] Ibid

(d) The Birth of the Mae Sot Special Economic Zone in 2015

Mae Sot is officially the busiest border trading route between Thailand and Myanmar. Over the past decade, Mae Sot grew rapidly, due primarily to an abundance of low cost migrant labourers from neighboring country Myanmar.

Beginning in the 1990s this led to a strategy for relocating labour intensive activities, form the greater Bangkok area. In this context, there has been a renewed interest in the development of a SEZ at Mae Sot, particularly with the clustering of garment and textile factories.

Mae Sot emerged in recent years as a production base for labour-intensive industries, in particular, garments driven by global and domestic demand. From the early to mid-1990s, profit rates for garment and textile firms fell, like many other labour intensive industries and activities in Thailand. Manufacturers' efforts to upgrade into original design (ODM) or original brand manufacturing (OBM) did not generally succeed; and Thai-based regional trading companies did not materialize as they did in Taiwan and Hong Kong. This led to the relocation of many Bangkok garment producers seeking lower costs to Mae Sot. The key attraction was low wage labour from Myanmar, including Karen workers who crossed over-land daily from Karen State and workers from nearby Myanmar refugee camps in Thailand. Approximately 470 garment factories were located in Mae Sot, mostly from Bangkok, employing more than 20,000 (daily) migrant workers from Myanmar, in addition to a Thai-based labour force. An important factor for the relocation decisions of these firms was the very good road connecting Mae Sot to Bangkok, providing easy access to the domestic Thai market and through Bangkok Port and Laem Chabang Port to export markets. The garment factories are small- and medium-scale enterprises (SMEs), with 20 – 200 employees. The bigger factories (50 – 200 workers) are mostly from Hong Kong and Taiwan. The smaller factories (20 – 50 workers) are generally Thai owned.

In the 1990s, Mae Sot was included in the Thailand Board of Investment's Zone 3, which includes zones in the border peripheries which were granted tax privileges. It is also strategically located on the East-West Economic Corridor of the Greater Mekong Sub-region (See Figure 2). The export quota system and joint venture investments were instituted by the government, and the presence of cheap labor in Mae Sot lured investors from Hong Kong and Taiwan via the Chinese business networks. In 2002, a cabinet resolution under Thailand's Thaksin administration from its declared Mae Sot a Special Border Economic Zone, encouraging investment, industry, and trade. There were also calls for an expansion of infrastructure, tax and custom privileges, and relaxation of labor laws. Together with the border trade and the influx of cheap labor, further investment was lured to the area. However, the resolution did not involve structural change. Following this, in 2005, the Thaksin administration passed a bill designed to combine industrial estates and governmental agencies where the private sector was the investor while the government supported fundamental infrastructure.

Before 2003, cross-border trade was mostly unregulated, and little investment occurred on the Myanmar side of the border due to restrictive Myanmar trade policies. But in 2008, the Myanmar government reciprocated and established a border trade zone in Myawaddy, Myanmar, with storage facilities and land designated for factory and warehouse construction. In 2011-2012, intentional following reforms in Myanmar, the two governments collaborated in promoting Myawaddy-Mae Sot as an Economic Zone Business activities supporting cross-border trade. Since 2013, when the daily minimum wage in Mae Sot increased from 147 baht (2008) to 300 Baht (2013), some labour-intensive activities which did not require heavy capital investment were relocated back to Myanmar's side of the border, while higher-value operation remained in Mae Sot.

In 2011, the Thai cabinet approved a budget for hiring a team of expert planners to design a formal SEZ, and a government subcommittee focused on legal preparations finalized a draft royal decree to create a special entity to run the zone. This zone would cover three districts along the border: Mae Sot, was main area for border trade, investment, industry, and tourism. Phop Phra and Mae Ramat District, with their focused on agriculture and agro-industry.

In 2015, Thailand established five Special Economic Zones in ten border provinces. The aim was to build production bases connecting Association of Southeast Asian Nations (ASEAN) neighbors (i.e. Laos, Cambodia, Malaysia, and Myanmar) and promoting development of Thailand's provinces. The first-phase Special Economic Zones are in Tak, Mukdahan, Sa Kaeo, Trat, and Songkhla, and the second-phase SEZs are in Nong Kai, Narathiwat, Chiang Rai, Nakhon Pathom, and Kachanaburi. The SEZs are intended to promote regional economic development in border provinces by relaxing labour standards, tax incentives, lower tariffs, and facilitating movement of workers. Mae Sot is in the Tak SEZ and is one of the most important points for strengthening competitiveness on GMS corridor.

Transport infrastructure, shipment and distribution centers, duty-free areas, bonded warehouses, one-stop service facilities, single service inspection and customs checkpoints are parts of the special economic zone. This incentive offered by Thailand and Myanmar for doing business in the zones is generous. The maximum benefit granted by the Thai Board of Investment (BOI) includes corporate income tax (CIT) exemptions for the first eight years and 50% deductions for another five years. In addition, there is a double deduction of transportation cost, electricity, and power supplies for 10 years, and import duty exemptions for raw materials and essentials used in production for export for five years.

I. How and Why Mae Sot Grew- Push and Pulls

(a) The Pull Factors Leading to Migration to Mae Sot after 1990

The push and pull factors influencing Myanmar labour migrations to Thailand reflect the disparities in economic, political, and social development and are rooted in old traditions of trans-border relations between Karen and other ethnic groups.

Migration to work in Thailand was officially recognize since 1992, the arrival and departure of migrant from Myanmar into Thailand's labour market. Industrial development and labour

demand in Mae Sot grew rapidly since 2000, and labour market needs for low skilled labour grew in many sectors. Economic growth and the current labour shortage were pull factors and an opportunity for laborers from Myanmar. They have come seeking jobs and higher salaries in Mae Sot. The labourer typically sends back of their salaries to their families. Their daily minimum wages were about US$ 10 per person at Mae Sot factories, while in Myanmar their salary was about US$ 4 per day. At first, Thailand did not set any policy to manage migration. But pressure from Thai entrepreneurs forced the Thai Government to open the Thai labour market to migrants. The first permission to allow unskilled migrants from neighboring countries to work in Thailand was given in 1992 to four border provinces and expended to nine provinces in Mae Sot, Tak. In the 2000s Thailand had launched a long-term policy, aiming to recruit formal migrants and legalize migrant workers holding temporary work permits.

The factor owners implemented low-cost operations by procuring migrant labourers who came from Myanmar to earn money temporarily in Thailand. The knitting and garment unregistered home based small-scale sewing factories which were established after 1990. The factories were closed compounds, and employers only registered a fraction of their workers; small and middle size factories tended not to register their workforce at all.[12] The majority of knitting and garment factories in Mae Sot are subsidiaries of companies from central Thailand. The ownership is roughly half Thai and half foreign. The foreign owners came from China, Taiwan, Hong Kong, Japan and South Korea. Production is primarily for export but also contributes to domestic markets. Garment producers relocated factories from Bangkok to Mae Sot to seek lower cost labour, including Karen workers who cross daily and workers from nearby Karen dominated refugee camps.

Mae Sot border trade skyrocketed after 2010, and two modern shopping malls, TESCO Lotus and Robinson, opened for locals, migrants and tourists from Myanmar. The Technical Officer from Mae Sot's Custom Department wrote that Mae Sot was a quiet backwater town-unpaved road, few businesses before 1990, but today the streets and restaurants are bustling. The development of Mae Sot came with the influx of Myanmar labourers.

(b) Political, Social and Economic Push Factors from Myanmar

The migration of people from Myanmar to Thailand is mainly related to the economic, social, and political situation in Myanmar. For many decades, Myanmar faced a deteriorating economy, rampant inflation rate, limited employment and educational opportunities, and heavy taxation (ILO, 2007, p. 26). On top of that, the escalating commodity prices for basic necessities caused people to become caught in a cycle of debt. Limited job opportunities could not lift the people up from poverty (Awatsaya, Khaing, Therese & Sureeporn, 2008, p. 307).

[12] 2014 report, Migrant Workers in Thailand Garment Factories

Rural people from Myanmar's ethnic groups are often victims of forced migration and forced relocation due to development projects like dam building, gas pipe-lines installation, and large-scale agricultural projects.

Thus political instability and low wages within Myanmar are major push factors, so migrant workers from low-income and poor households look elsewhere for a better life. Myanmar's economy declined between 1962-1988, with uprisings in 1988 and again in 2007. But the Burma Socialist Program Party (မြန်မာ့ဆိုရှယ်လစ်လမ်းစဉ်ပါတီ), reformulated into the State Law and Order Reconciliation Council (SLORC), led to a better relationship with Thailand and an opening of its economy and borders to foreign investment. Strategic natural resources including hydroelectric power, teak, gems, natural gas and oil, particularly for China, and a source of cheap workers throughout Thailand, increased.

(c) Pull Factors from Thailand

Beginning in the early 1990s, the country moved from low-end, labour-intensive operations to more capital- or technology-intensive manufacturing industries. As a consequence, a large number of Thai workers sought work in the skilled labour market to support the country's rapid economic growth. This, in turn, created labour shortages at the low-skilled level. As a result, during the past decade, the private sector put pressure on the government to allow industry to employ migrant labour. (Supang 2007,2-10) In the mid-1990s, Thailand actively promoted the decentralization of both foreign and domestic industrial investment to rural, largely non-industrialized provinces, and away from Bangkok and its heavily industrialized suburbs. (ILO2006 p.28)

Thailand has become one of the most developed countries in the Greater Mekong Sub-region and offers more employment opportunities and higher wages than most of its neighbors. A high demand of low-skilled labourers for the labour-intensive industries attract migrant labourers, especially form Myanmar, due to their poverty stricken situation and limited options for gainful employment at home (IOM 2007).

The push and pull factors that characterized this labor migration pattern still exist despite recent developments at the national level. GDP per capita in 2013-14 USD $974. 69 in Karen State[13] was compared to $2,532 in Tak province Thailand[14]. Wages in Myanmar remained stagnant, while in January 2013, Thailand passed a new legal daily minimum wage of 300 baht (approximately $10)—a further incentive for migration from Myanmar to work in Thailand. Currently there are 2.5 to 3 million migrant workers in Thailand.

[13] Profile of Kayin State (Facts and Figures), Source: (1) Planning Department, General Administration Department, Settlement and Land Records Department, Myanmarand (2) Ministry of Agriculture and Irrigation, Settlement and Land Records Department, Myanmar and FAO,"Report on Myanmar Census of Agriculture, 2010" Consolidated Capacity Development Needs Assessment (CDNA) Report of Hpa-an, Myanmar, Mekong Institute, ThailandJuly 2014

[14] https://en.wikipedia.org/wiki/List_of_Thai_provinces_by_GPP

II. The Growth of Export-oriented Textile Manufacture after 1990: The International Context of Chinese expansion and Rising Labour Cost

The end of the Cold War led to turning points in the global economy. The opening and growth of China as a major producer for world markets and the rapid expansion of the SEZs located in southern China were particularly important. In the early 1990s, large capital investment flowed into the coastal regions of China, from Hong Kong and Taiwan, resulting in an unprecedented expansion of productive capacity across the Pearl and Yangtze River Deltas. The consequence was development of continental scale production networks which mobilized massive migrant labour flow from the countryside provinces to the industrial centers.

In newly industrializing economies in Asia and Latin America, transnational corporations out-sourced lower-cost global production. (Dicken 2003: Gereffi 2005). One result was an expansion of infrastructure projects in Chinese that depended on large scale labour migration. That generated enormous tensions in local economics over the consequences of economic integration and the social transformation of the resulting labour markets (Harvey 2003). These tensions emerged particularly in China's new industrial export economy by the late 1990s. The "China Price"- the lowest prices possible- was possible because of low-cost labour migrations to the Yangtze and Pearl River Deltas. The "lowest price" policy was driven by textile and garment production. But their effects rebounded recently in ways that threaten to destabilize social and economic conditions in China and in neighboring countries like Myanmar.

China embarked on a "triple policy" to weaken its dependence on the low "China Price products" and to reduce dependence of rural areas for migrant labour flows. First, low-wage assembly industries were being encouraged through subsidies, contracts, and infrastructural development to relocate to Western and Northern provinces of China from which migrant workers have traditionally come from. Second, low-wage assembly workers are also outsourced to low-cost production centers in southern Asia, particularly under the auspices of emerging large-scale Chinese manufacturers and networks. The third strategy of Chinese manufacturers was to encourage an upgrade in production and working conditions with the goal of branding Chinese goods for national and international markets**.** This policy is in effect in Myanmar in the context of rising Thai labour costs.

In this context, export-oriented textile garment production in Mae Sot began in the early and mid-1990s. The growth of industry in Mae Sot was also influenced by rising wages in Bangkok and central Thailand. In Mae Sot, there is an abundant reserve of Myanmar migrant labour paid a third to half of Bangkok wage, tax incentives[15], quality road infrastructure between Mae Sot and Bangkok-ports, loose to no enforcement of other labour, and occupational health, safety and environmental regulations.[16] Garment production is

[15] Royal Decree No.591, came into force on 10 September 2015, granted a reduction of the corporate tax rate to 10% for 10 years on income earned from manufacturing goods or services rendered and used in the SEZ to juristic entities with a place of business in the SEZ, regardless of where their head offices are situated.

[16] Occupational Safety, Health, and Environment Act, B.E.2554(2011)

concentrated on low-value added products where the global competition for low cost is tight and profit margins are small. These segments of the industry are often associated with nomadic buyers and producers who search for the lowest cost contracts and labour harmony in countries that offer attractive investment incentives, like tax holidays, quality infrastructure, and trade facilitation to lower total landed cost of the product. Mae Sot's supply of Myanmar migrant labour is a quintessential example of a garment-producing center.

One of the biggest factory in Mae Sot, SEZ is Top Form Brassiere Co., Ltd. Ii established the first factory in Mae Sot, Thailand in 1988, and exported globally. It is a Hong Kong based company and the factory product mainly for the USA market. Their capacity in Thailand accounts for over 50% of global capacity and today employs over 4,000 workers. Most of the employees came from Myanmar (Top Form International Limited).

Another manufacturer is Saha group garment factory which was established in 2007 at Mae Sot. In 2015 the group also began making plastic products in Mae Sot for export to Myanmar. The group got the benefit of a Myanmar workforce and one third of the plastics products sold in Myanmar are made in Thailand. The comparative level of the wages in Thailand and Myanmar is attractive. Moreover in Thailand, Mae Sot has lower wages than other district (see Table 2). This is why the factories were move to Mae Sot is extending export production to low-wage.

Table 2 Comparative wages of Myanmar and Thailand 2008- 2019

Country/Region	Daily Minimum wage 2008		Daily Minimum wage 2016-19	
	Local Currency	US$	Local Currency	US$
Thailand				
Bangkok	203.00 THB	6.42	310.00 THB	10.00
Chiang Mai	168.00 THB	5.31	308.00 THB	9.93
Khon Kaen	150.00 THB	4.74	308.00 THB	9.93
Tak/Mae Sot	147.00 THB	4.65	310.00 THB	10.33
Myanmar	500.00 MMK	0.50	4800 MMK	3.61

Source: (Lwin, 2018, August)

III. Discussion: Mae Sot SEZ and the Future

The paper is used "push and pull theory," and historical structural analysis to understand the phenomenon of industrial development in the Mae Sot area and migrant labor. That is how impact the Mae Sot Special Economic Zone. This discussion is focused on two parts: the context of continued Thai growth and the context of Myanmar ceasefire and peace.

(a) The context of continued Thai growth

The Thai Government gave the Mae Sot Special Economic Zone a high priority because of its economic potential.[17] Mae Sot, as an important border town, and reflects as much as 12.30% of Thailand's cross border trade bill in 2013-2014 year.[18] The annual report from Mae Sot customs said cross border trade in the 2015 fiscal year ended on September 30 at 66.8 billion Baht. A big value for Mae Sot SEZ is its proximity to a growing and newly trade-friendlier Myanmar, which makes it ideal for businesses to import raw materials from or export merchandise to Myanmar. In addition, labour-intensive industries operating in Mae Sot SEZ are now being facilitated by more lenient labour regulations. i.e., Thai have permission to employ foreign workers entering and exiting Thailand on a daily basis, and privileges include incentives like corporate income tax exemptions, import traffic exemptions and double taxation deductibles on expenses. The potential and privileges there will enable Mae Sot SEZ to become a new economic hub for investors in various labour-intensive industries.

One of the SEZ's advantages is an exemption on the use of migrant labour. So that the Mae Sot SEZ is a hub for labour intensive industries and the other side is to promote border area trade. SEZ policy encourages labour intensive industries. The migrant labour from Myanmar was essential for labour-intensive industries. This is the attraction of the migrant labours from neighboring countries to seek the job easily and earn money, especially from Myanmar. In addition SEZ established to support small factories along Thailand's borders. This is to provide economic opportunities not only for the Thais but also neighbors. The Thai government promoted Mae Sot as a migrant labour-based export processing zone. After 1997 Asian Economic Crisis; many garment factories in Bangkok were hard hit and closed down, and some relocated to Mae Sot in search of cheaper labour (Pearson Ruth, Kusakabe Kyoko, 2013). On the other hand geographically, Mae Sot also benefits from being on the west side of East West Economic Corridor (EWEC), with great potential for warehouse, distribution

[17] Mae Sot Special Economic Zone (Mae Sot SEZ) is a pilot SEZ that the government is giving a high priority because of its huge economic potential and the fact that it borders with Myanmar. Mae Sot's importance as a border town has risen over recent years because its export share of Thailand's total border trade rose 10 percent in 2014, versus just 3.7 percent reported in 2011.The greatest potential of Mae Sot SEZ is in its proximity to Myanmar, which makes it ideal for businesses wanting to import raw materials from, or export merchandises to Myanmar. In addition, labor-intensive industries operating in Mae Sot SEZ are now being facilitated by more lenient labor regulations, i.e., a permission to employ foreign workers entering and exiting Thailand on a daily basis, plus various tax privileges, e.g., a corporate income tax exemption, import tariff exemption and double taxation deductibles on expenses. Industries eligible for those privileges must be: 1) target industries of the Committee on the Special Economic Development Zone Policy, i.e., labor-intensive enterprises; and, 2) industries under the investment promotion program of the Board of Investment (BOI). Nevertheless, normal industries not eligible for BOI investment promotion privileges are still entitled to corporate income tax exemption from the Revenue Department. The potential and privileges there will enable Mae Sot SEZ to become a new economic hub for investors in various labor-intensive industries, especially Thai SMEs, seeking to expand into Myanmar, but are not ready to cope with investment risk abroad, and/or do not have strategic partners in any CLMV state. Three business types that could benefit from Mae Sot SEZ include 1) local traditional businesses; 2) businesses that can begin operations there immediately; and, 3) businesses with significant potential. (www.kasikornresearch.com)

[18] Percent reported in 2015

center, and logistic industries. In terms of low cost of labour, many industries which employ large numbers of laborers tended to build their factories in industrial areas far from Bangkok and finally gathered in Mae Sot ‘s SEZ.

The SEZ development ahead of the current policy reveals that Mae Sot has long been prepared for future expansion. Mae Sot is a vital gateway bringing trade, investment, and tourism to Yangon in Myanmar. In terms of labour, Mae Sot is a destination for low-skilled laborers from Myanmar. Location advantage of garment industry of Mae Sot SEZ is availability of Myanmar migrant labourers. Labour from Myanmar comprised 86% of the total number of employees in garment industries in Mae Sot SEZ (Kudo, 2009). The migrant labour plays a vital role in filling labour market demands in Thailand. Finally destination of Mae Sot’s SEZ exhibit important pull factors is higher wages and a demand for migrant labour to perform low-wages job.

(b) The Context of the Myanmar Ceasefire and Peace

The labour migration from Myanmar to Thailand started in the 1990s and continues until the present day. As Myanmar emerges from decades of centralized economy, international labor migration is increasingly viewed as a means of economic development at both the household and national level. In the past, poverty, under-development, political instability, and human rights abuses were factors pushing people to leave Myanmar. After half a century of isolation, Myanmar’s economy has grown substantially since 2011. Between 2014-2015 Myanmar’s economy grew at and estimated real rate of 8.7%, and World Bank estimated real GDP growth for the year at 6.5%. Poverty halved, falling from 48 percent to 25 percent between 2005-2017 (The World Bank In Myanmar, 2017). Changes will encourage displaced migrant labourers to reconsider returning to Myanmar.

The partial signing of the 2015 nationwide ceasefire agreement is regarded as a first step towards peace, but the situation in Myanmar in 2019 still remains fragile. The armed conflict in the north of the country continues to intensify, while fighting also occasionally flares upon Southeast Myanmar. Decades of armed conflict have produced over 640,000 internally displaced persons (IDPs), while over 96,000 refugees continue to reside in camps along the Thailand Myanmar border. In addition, land-grabbing is endemic across the country, contributing to further displacement and migration of the most vulnerable and marginalized people.

IV. Conclusion

The finding of the paper is, Mae Sot is a classic example of an export-led growth, as parts of the Thailand’s economy take advantages of cheap unskilled labour starting in the 1990s. Thai and other entrepreneurs in the garment industry and other labor-intensive activities have used day labor from Myanmar to reduce their wage bills in order to make much more profit. In 2016, these enterprises were overwhelmingly Thai firms using domestic inputs and sources of

finance to produce goods for the Thai market. Mae Sot SEZ is a mechanism for distributing development to the local area and connecting the Thai and Myanmar economies. Improving economies in neighboring countries are affecting the Thai labour market. Moreover neighboring country labor migration is one of the factors for the Labor Market at Mae Sot, SEZ. SEZ labor market is an economy function of the Mae Sot province with demand and supply of labor. In this market, labor demand is the firm's demand for labor and supply is the worker's supply of labor. The supply and demand of labor in the market is influenced by changes in the bargaining power.

Mae Sot has developed after 1990, because of the cheap labor from Myanmar. Cheap labor incentivizes the factory owners to hire the migrant workers from Myanmar. On the other hand the higher paying jobs in Mae Sot SEZ is an attractive to Myanmar's migrant labour. Especially owners from China have taken advantage of this to produce the low cost product and maximize the profit. The migrant workers came from Myanmar was the wages differential between Myanmar and Thailand. Myanmar daily wages is approximately USD $3.00 (MMK 4800) per day and Thailand daily wage is more than USD $ 10 per day. The range of minimum wages is the important factor of the migration. The migrants salary sent back was mainly spent for daily household expenditure because more than USD $ 5 wages differential of Thailand and Myanmar. The important task is future demands in Myanmar labour market. The same minimum wages with neighboring country can prevent the unskilled labour leaving the original country to host neighboring country. Many migrant laborers are ethnic minorities and people from poor divisions if they have chance to benefit from the economic development in their home town that they will not migrate.

Migrant Labor policy is an important component of a country's policy framework. Efforts at economic and social development. This is the government policy, aimed at improving the ability of people within the labor market of the country involved to meet the demands put upon them. This research shows that presently there are still a lot of uncertainties. The increased supply of labor from Myanmar is its strength of labor-intensive industry in Mae Sot. This strength arises from the opportunity granted Thailand by push factors from Myanmar. Current new labors regulations of migrant labour policy in Thailand are present a weakness. Additionally, the possibility for economic development in Myanmar presents a threat to this labor supply.

Mae Sot Special Economic Zone is intended to promote regional economic development in border provinces by relaxing labor standards, particularly trade without tariffs, and facilitating movement of workers. SEZ offers more employment opportunities and higher wages than any of its neighbors, and the high demand of low skilled labors for the labor-intensive industries attract the migrant labors, especially from Myanmar.

In summary the main point is the government cannot control the irregular migration of labor because of the border situation. The Mae Sot, SEZ is in border area of both Thailand and Myanmar. In terms of border situation how soon and at what speed changes in the migration patterns of Myanmar. Current trend is migrant labor is taking place in the SEZ labor market

that impact to development of Mae Sot, economy. Labor intensive industries could be increasingly dependent on migrant labor as a new generation.

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References

1. Asian Development Bank and (2009) East-West Economic Corridor(EWEC) Strategy and Action Plan. Draft for consideration by the 15th GMS Ministerial Meeting, May. http://www.adb.org/GMS/Economic -Corridor/EWEC-SAP. pdf (last accessed 10 September 2009)
2. Arnold, Dennis, and Kevin Hewison. (2006). Exploitation in Global Supply Chains: Burmese Migrant Workers in Mae Sot, Thailand. In Transnational Migration and Work in Asia, edited by K. Hewison and K. Young. London: Routledge.
3. Arnold D (2010). "Administration, border zones and spatial practices in the Mekong Subregion." Unpublished PhD Thesis, Department of Geography, University of North Carolina at Chapel Hill.
4. Arnold D (2007). Capital Expansion and Migrant Workers: Flexible Labor in the Thai– Burma Border Economy. Bangkok: Mahidol University
5. Arnold, D. and Pickles, J. (2011, November). Global Work, Surplus Labor, and the Precarious Economies of the border. Antipode, 43(5), 1598-1624.
6. Bank of Thailand, (2014). National Employment Statistics (Retrieved October 2014) http://www.bot.or.th/English/Statistics/Standard/SDDS/Pages/sdds.aspx
7. Charoenloet V (2002). Thailand and industrial restructuring: Government policies and the labour situation since 1997. The Journal of Comparative Asian Development I(2)
8. Chantavanich, S. and vungsiriphisal, P. (2012). Myanmar Migrants to Thailand: Economic - Analysis and Implications to Myanmar Development. In H. Lim & y. yamada (Eds.), Economic Reforms in Myanmar: Pathways and Prospects (pp. 212-280). bangkok: IDE-JETRO.
9. Dicken P (2003). Global shift: Reshaping the Global Economic Map in the 21st Century. 4th edn.Nwe York: The Guilford Press
10. Federation of Trade Unions-Burma (FTUB) (2008). Working Day and Night: The plight of Migrant child Workers in Mae Sot, Thailand: Bangkok: International Programme on the Elimination of Child Labour, International Labour Organization.

11. Gereffi G(2005). The global economy: Organization, governance and development. In N Smelser and R Swedberg(eds) The Handbook of Economic Sociology(pp 160-182). Princeton:Princeton University Press
12. Harvey D (2003). The New Imperialism. New York: Oxford University Press
13. Huguet, J. W.; Chamratrithirong, A.; Richter, K. 2011. “Thailand migration profile”, in J. Huguet and A. Chamratrithirong (eds): Thailand migration report (Bangkok, ILO).
14. Hue University Journal of Science: Economics and Development ISSN 2588-1205 Vol. 128, No. 5B, pp. 95–109
15. International Organization for Migration (IOM) Thailand. (2013a). Migrant Information Note, Issue #18, January 2013. IOM Thailand.
16. International Organization for Migration (IOM) Thailand. (2013b). Migrant Information Note, Issue #21, September 2013. IOM Thailand.
17. Kudo, T. (2009). ‘Border Area Development in the GMS: Turning the Periphery into the Center of Growth’. Research on Development Strategies for CLMV Countries. ERIA Research Project Report .
18. Migration Survey. 2008. Available at: http://service.nso.go.th/nso/nso_center/project/search_center/23project-en.htm [31 Jan. 2011].
19. Ministry of Labour, Migration and Population, Republic of the Union of Myanmar, (2013). မြန်မာနိုင်ငံလုပ်သားအင်အား၊ ကလေးလုပ်သား နှင့် ကျောင်းအပြီး လုပ်ငန်းခွင်ဝင်ရောက်မှုအကျူးအပြောင်း ဆန်းစစ်ခြင်းစစ်တမ်း။ ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော် အလုပ်သမား၊ အလုပ်အကိုင်နှင့် လူမှုဖုံလုံရေး ဝန်ကြီး ဌာန၊ အမိန့်ကြော်ငြာစာ အမှတ်၊ ၆၄/ ၂၀၁၃ ။ ၂၀၁၃ ဇူလိုင် လ ၁၂ ရက်
20. Ministry of Foreign Affairs of the Kingdom of Thailand, 2014. Report (2014).
21. Ministry of Labour, Thailand. (2012). Labour Protection Act. B.E. 2541 (1998). Available at:http:// www.labour.go.th/en/attachments/article/18/Labour_Protection_Act_BE1998.pdf [24 Oct. 2012]
22. Ministry of Labour . (2020). Retrieved from https://www.mol.go.th/en/minimum-wage/
23. Moe Thida Lwin (2018, August). "Migrant Labour Situation in Mae Sot Area". Payap University.
24. Moe Thida Lwin (2019), “Labour market in Mae Sot 1990-2017, and Thailand’s New Special Economic Zone Policy”
25. Pearson Ruth, Kusakabe Kyoko. (2013). Thailand's Hidden Workforce: Burmese Migrant Women Factory Workers. Journal of Social Issues in Southeast Asia, 371-374.
26. Pitch Pongsawat (2007) . Border Partial Citizenship, Border Towns, and Thai-Myanmar Cross-Border Development: Case Studies at the Thai Border Towns.‖ Unpublished PhD Thesis, Department of City and Regional Planning, University of California, Berkeley
27. Pungpond Rukumnuaykit.(2009). A Synthesis Report on Labour Migration Policits, Management and Immigration Pressure in Thailand. International Labour Organization/Janpan Project on Managing Cross border Movement of Labour in Southest Asia. Bangkok: ILO Regional Office for Asia and the Pacific.
28. Schrank, A (2001). Export processing zones: Free market islands or bridges to structural transformation? Development Policy Review 19 (2):223-242.
29. Shaung, S. (2017, October 7). Myawaddy-Mae Sot Temporary Border Crossing Permit Extended From One to Seven Days. Retrieved from Karen News: www.http://karennews.org
30. Tak Provincial Office. (2006). Tak 4 years (2005-2008) action plan. Tak Province office publication, Tak Provine-Department of Business Development, Ministry of Commerce; -

http://www.dbd.go.th/dbdweb_en/ewt_news.php?nid=3992&filename=indexNumber of workers in Thailand ‘s Garment Industry 2013

31. Takao TSUNEISHI(2007). Thailand’s Economic Cooperation with Neighboring Countries and its Effects on Economic Development with Thailand
32. Thai Labour Campaign,(2003). Interview with Federation of Thai Industries Tak Chapter, December 29, 30- 2003, FTI-Tak Office, Mae Sot, Tak Province Thailand.
33. Thai Labour Campaign,(2003). Interview with Kwuang Saijem, Tak Labour Protection Officer, December 30 -2003, Tak Labour Protection Office. Mae Sot, Tak Province Thaila
34. Thai Labour Campaign,(2004). Interviews with Burmese migrant workers, November 2003-January 2004. Mae Sot, Tak Province, Thailand.
35. The World Bank In Myanmar. (2017). Retrieved from www.worldbank.org: https://www.worldbank.org/en/country/myanmar/overview
36. Top Form International Limited. (n.d.). Top Form International Limited. Retrieved from www.topformbras.com
37. Toshihiro KUDO (October 2007). Border Industry in Myanmar: Turning the Periphery into the Center of Growth, IDE discussion paper No.122
38. Tsuneishi, T (2008). Development of border economic zones in Thailand: Expansion of border trade and formation of border economic zones. Discussion Paper No. 153. Institute of Developing Economies-JETRO. Chiba, Japan, May
39. Voravidh Charoenloet (2002). Thailand and industrial restructuring: Government policies and the labor situation since 1997. The Journal of Comparative Asian Development
40. Wage Committee announcement, 2012. Minimum wage rates. Available at: http://www.mol.go.th/employee/interesting_ information/4131 [20 Sep. 2012]. —. 2012.
41. Yongyuth Chalamwong, and Raphaella Prgsamatz. 2009. The Economic Role of Migration, Labour Migration in Thailand: Recent Trends and Implications for Development. IDRI Quartely Review 24(3):3-9