Impacts of Trade Openness on Myanmar's Economic Growth (1962~2019)

By

Khin Thida

THESIS

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

For the Degree of

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Committee in charge:

Professor Lee, Siwook, Supervisor

Professor Shadikhodjaev, Sherzod

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ABSTRACT

This paper examines Myanmar's economic growth rate by inflow of Trade Openness and the Vector Error Correction Model was applied. Purpose of this study is to see trade openness has long-term positive or negative effects on GDP growth rates. According to this study, in the long run, GDP growth rate is positively associated with Trade Openness. However, the relationship is not statistically significant. GDP growth rate and inflation are also negative long-term relationship. The results proved to be negative for inflation, and people were saving money in the banks because Myanmar's interest rates were so high compared to other countries. Therefore, this study suggest that Myanmar's government should change monetary policy like decreasing interest rate. Furthermore, government should adopt suitable tactical trade policies and implement important changes to ensure Myanmar's long-term economic prosperity. In addition, the findings of this research can be utilized to inform future research in order to develop sound trade liberalization policies that will help Myanmar prosper economically.

Key Words: GDP growth rate, Trade Openness, Inflation, Vector Error Correction Model (VECM), Myanmar

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IMPACTS OF TRADE OPENNESS ON MYANMAR'S ECONOMIC GROWTH (1962~2019)

1. INTRODUCTION

1.1 Background of the Study

Trade is a powerful tool for economic growth in many countries around the world. In addition, trade has always played an important part in the historical growth of Third World nations. Similarly, by employing a division of labor, international trade provides the effective distribution of resources, and enhances human welfare. Furthermore, trade can help a country to develop by boosting technological progress, importing technical know-how, increasing access to resources, and expanding markets as a result of specialization, while also encouraging fierce competition and attracting Foreign Direct Investment (FDI).

Myanmar is situated on the continental region of Southeast Asia, as well as on the active crossways that connect Southeast Asia, China, and India subcontinent and successful sub-regional economic nodal point on the road to international integration, with a potentially huge market. Myanmar dealt with surrounding countries of Southeast Asian and sold rice to European countries during the start of the sixteenth century, for the duration of the reign of the Burmese rulers and developed a laissez-faire economy through unrestricted trade when British seized the country in 1886.The government launched an import substitution industrialization to entice foreign investment after Revolutionary Council assumed control in 1962.

In the early 1850s, after British acquisition of Lower Burma, Upper Burma regulated overseas trade, whereas it pursued an open trade policy. In 1869, Inland waterway Suez opened, and Myanmar ensured some knowledge in international trade and the world's largest rice exporter. The overall trading trends in Southeast Asian countries and Myanmar were comparable at this period.

In 1957, U Nu encouraged private firms to participate actively in the domestic economy by giving this firms protection from nationalization for 10 years while prohibiting all foreign commercial operations. During the parliamentary democracy period, Myanmar's commerce industry boomed, with 11 cultivated merchandises accounting for around 44 percent of overall imports and exports contributing for an approximate 50 percent of GDP. In terms of export composition, rice goods turn into more important in postwar period than in the prewar period and was the most important foreign money earner, while forestry goods, primarily teak, reach in second. Due to diminishing unit value of exports, the trade surplus vanished or became negligible in 1957-58. Many studies have found that the government's trade policy on imports of manufacturing raw materials and equipment has encouraged establishment of small factories to avoid a relatively high tariffs on completed goods. These are intended for highly dependent import and import substitution.

When Revolutionary Council seized authority in 1962 and implemented the "Burmese Way to Socialism" as its administrative theory then followed a self-sufficient socialist system. Government ruled the trading sector such as a monopoly organized by state-owned enterprises. Exports were implicitly taxed by State Owned Economic Enterprises keeping national commodity purchase rates below international prices (SEE). Imports were controlled based on government goals and foreign exchange availability. Rice exports, on the other hand, declined precipitously, as a result, export income has dropped dramatically, as have imports, savings, investment, and GDP growth.

The government is reluctant to accept official development assistance (ODA) for import value. Lack of foreign currency has limited the import of consumer goods and created an informal market. Foreign trade in the private sector was carried out at market-competitive exchange rate. Myanmar's foreign trade orientation changed slightly in the early 1980s. The

country's commercial condition had deteriorated by 1967, resulting in three diverse economics system: the nominal authorized economic system and two black-market economies.

The Military government pursued an internal form and a policy of self-reliance that demanded a socialist economic system from 1962 to 1988 (Than, 1988). In 1988/89, Myanmar's GDP growth rate slowed to (-)11.4% due to political instability in the country (Than, 1992). In March 1989, leaders boldly stated that the government intended to transform the economy from socialist to free market capitalism. Therefore, Myanmar's economy revived in 1989/90, with a GDP growth rate of 3.6% that year and 5.6% in 1990/91. Despite these successes, GDP is still below the level reached in 1985/86. After 1988, outward economic policy was pursued by implementing economic reforms, regulating foreign direct investment flows, and relaxing international trade rules and regulations in Myanmar. According to the world bank data, Myanmar has been on the global trade openness ranking list since 2000, with an average value of 20.03% for Myanmar during that period, a minimum of 0.17% in 2009 and a maximum of 62.45% in 2017. The latest value from 2018 was 60.69%, and the global average value for that year was 94.27%, based on 170 countries. Myanmar's policymakers see trade is an instrument for economic growth and poverty alleviation, which has transformed the country's economy into a booming economy through increased trade openness.

Following the improvement of the country's human rights record and foreign relations in 2010, trade and other economic sanctions were eased. All country's development policies believe trade to be the engine since it may create jobs, raise revenue, grow the market, stimulate competition, and distribute information (Naing, 2014). Myanmar's export policy is to maximize the utilization of natural and human resources to enhance exports, expand and explore global markets. Myanmar's import policy is based on the country's required capital and raw materials for production. Priority will be given to other important commodities and products that support

public health and export promotion. In the context of trade openness, technology and capital accumulation can boost GDP growth rates in the long run.

Myanmar joined the General Agreement on Tariffs and Trade in 1948 then, beginning January 1, 1995, it became World Trade Organization (WTO)'s member. Because most of the fundamental factors for development, such as capital goods, raw materials, and technical know-how, are nearly exclusively imported due to insufficient domestic supply, trade is a huge role in economic development for developing countries like Myanmar. In many countries, increased domestic demand is accompanied by an increase in exports. Advanced technology must be handled in order to increase export capacity, and this fact in turn drives higher demand for imports. Trade liberalization policy has been vital for economic development in developing countries like Myanmar.

1.2 Statement of the Problem

Since Myanmar is one of the developing countries, there is weakness in the support of the trade sector and the country is facing low prices for export commodities. Since 2011, Myanmar has implemented different financial reforms aiming to reach a patch to development. A key component of this economic reform is the trade liberalization policy and employment. In particular, understanding the relationship between trade liberalization and employment is crucial since employment seems to be determined by trade. In practice, however, promoting job creation through trade liberalization is not easy. Indeed, it requires economic conditions, reforms, and labor dynamics. For example, since Myanmar is a major producer of agricultural products, it is necessary to boost technology to add value to exports and improve the packaging system. In this way, new job opportunities will arise for Myanmar citizens.

Myanmar's exported commodities are at low prices, while imported manufacturing and investment goods are at high prices. Therefore, Myanmar has a trade deficit situation.

Furthermore, in the 1990s, the US federal government imposed a wide range of sanctions on Myanmar through a variety of legislative and policy approaches, including various trade barriers, taxes and restrictions on financial transactions. International trade is critical to a country's economic growth. All countries that have experienced a "take-off" [1] have actively pursued export-oriented policies. Therefore, policy reforms need to be tailored to increase the productivity of the workforce and to make better use of trade opportunities, as well as to increase sector competitiveness in export markets.

The findings indicate Myanmar's economic growth and trade openness relationship is not well understood. The research attempts to determine if the inflow of Trade Openness has positive or negative effect on Myanmar's GDP growth rate applying the VECM model and can help the administration group in sustaining political solidity by improving poor system towards create laws and principles about trade policy, tax relief, and tariff barriers in order to achieve Myanmar's long-term economic growth. Myanmar's inflation is always rising for a variety of reasons, one of which being that individuals in Myanmar are more willing to keep surplus money in banks due to the country's high interest rate compared to other countries. As a result, the inflation and economic growth association rate might have a detrimental long-term influence on Myanmar's entire economy.

1.3 Objectives of Research and Questions

Objectives of Research:

This paper purposes to discover the effect of Trade Openness on Myanmar's economic growth and prospective growth in the country if trade openness occurs in the future.

[1] "A take-off is an industrial revolution that is directly linked to fundamental changes in production methods and has decisive repercussions in a relatively short period of time," according to Rostow.

Research Question

To what extent can trade openness influence Myanmar's economic growth?

1.4. Research Methodology

Quantitative approaches based on time series data were used in this study, which spanned 58 years from 1962 to 2019. The world bank and our world in data provided these data variables. Economic growth measurement by real gross domestic product is GDP. TOP denotes to Trade Openness in Myanmar. INF refers to the inflation of Myanmar. The correlogram test is used to decide whether or not the variables are stationary. In the instance of Myanmar, the Johansen co-integration test may be used to avoid erroneous outcomes, and VECM can be used to define GDP, TOP, and INF's relationship. Result of VECM methodological framework was estimated by using EViews software. Under the result and discussion section, data requirements are displayed.

1.4 Hypothesis

The following hypotheses for the relationship for long-run with the economic growth are generated based on the research objective and questions:

1) Trade Openness (TOP) on economic growth rate will have positive effects.

2) Inflation on economic growth rate will have positive effects.

1.6 Structure of the Paper

The study's introduction and background are presented in the first section. The literature review will be in section two, and the data and methodology will be explained in section three. The statistical interpretation, results, and discussion are described in section four. Policy

recommendations and a conclusion will be included in section five. Finally, in the concluding part, references are provided.

2. LITERATURE REVIEW

2.1. Empirical Review

Trade can aid a country to develop by enhancing elements including technological advancement, the importation of technical know-how, increasing access to resources, expanding markets, and attracting foreign direct investment (FDI). Trade openness has been demonstrated in several studies to have a favorable impact on economic indicators such as GDP and inflation. For a few reasons, in general, there is a non-negative correlation trade openness and GDP growth.

Rodriguez and Rodrik (2000) argued the correlation between openness and growth is still an unsettled subject. The endogeneity of the relationship is one of the most difficult aspects of assessing the effect. In order to deal with this problem, Lee and Rigobon (2004)'s paper applied the identification through heteroscedasticity methodology to assess the influence of openness on growth while correctly adjusting for the effect of growth on openness. The findings revealed that, while tiny, openness on growth has a positive influence. Despite similarly significant result of growth on openness, this result holds.

Kaltani and Norman Loayza (2005) combined proxies for financial depth ,educational investment, inflation stabilization, public structure, governance, and labor marketplace flexibility. Easy access to present some panel evidence to prove that the impact of openness improvement be influenced by on a variety of fundamental features. As a result, if certain complementing improvements are made, openness's growth effects are positive and economically significant.

According to Romalis (2007)'s paper, openness to international trade has a causal effect on growth. This situation accomplishes this utilizing tariff barriers created by the US as tools to improve openness in developing countries. Other countries' trade expands as the result of a significant trading partner's trade liberalization. Expansion of trade produced by market expansion seems to be accelerating significantly in the growth rate of emerging countries. The elimination of the current developing global tariffs increases the trade-to-GDP ratio of developing countries by one-third and the annual growth rate of 0.6 to 1.6 percent. Moreover, lessons on the effect of trade on growth have often been hampered by a genetic problem. Other factors that directly affect growth, such as growth and the quality of organizations, may play a role in trade openness.

Additionally, Cheveia (2014) used the VECM to study Mozambique's total factor productivity and trade liberalization relationship in a time series from 1980 to 2010. In Mozambique, the impact of this study is questionable, depends on additional changes, such as human capital, and its relations.

Moreover, Grier and Tullock (1989) found that in OECD nations, there is negative association inflation and growth. Barro (1996) explained that monetary policy and economic growth associationship, concluded higher inflation associated with slower economic growth. In addition, negative effect of rising inflation on outcomes is quantifiable. There is no proof that there is an expectant association in the middle of inflation and growth of any range. Accordance with the findings, the estimations isolate the way of causation from inflation to growth rather than other way around.

Anaman (2004) found that Brunei's export had a substantial influence on long-term economic growth. Brunei's rates of annual economic growth are subjective by global oil prices, and thus the value of its oil exports. Brunei's growth may be driven by issues other than oil prices and exports.

Hussin and Saidin (2012) described economic growth as an expansion of goods and services in a country, which could increase consumption. They say that economic growth really increases the production and realization over time. Economic growth acting a vital role in the well-being and prosperity of millions of people around the world.

Boldeanu and Constantinescu (2015) mentioned that economic growth is defined as driving GDP growth, but what influences the increase of each component is quite varied. Moreover, Sofilda, et al. (2015) also mentioned that the country's increased amount of exports and imports makes it more engaged in international trade transactions. The value added in terms of exports and imports is highly reliant on the technology used by industry to produce goods and services. In general, export value is low in developing countries, despite significant transaction volumes. This is due to developing countries can only export raw materials, which have a low economic value, rather than importing goods and services with a high economic value.

Researchers provide several different definitions for economic growth. A macroeconomic factor is a phenomenon, pattern, or condition that arises from or is associated with a major element of an economy rather than a specific population. A huge economic, environmental, or geopolitical event that has a large impact on a regional or national economy could be the characteristic. There are numerous links between the growth rate and macroeconomic factors such as foreign investment (FDI), inflation, GDP, unemployment, interest rate, population growth, government expenditure, exports, imports, unemployment, and so on. States, companies, and consumers all pay attention to such economic success indicators. Macroeconomic factors might be favorable, unfavorable, or neutral. Inflation and unemployment, in particular, are direct consequences of the population's standard of living.

Barro (2015) notes that inflation has fallen sharply and has had little effect on economic growth. In terms of the impact on inflation and unemployment growth, inflation and growth

are positive, and unemployment and growth are negative. However, Singh (2018) concluded that the impact of inflation has a little impact on GDP and unemployment, and the link is negative in India, according to a longitudinal study conducted from 2011 to 2018. The research study's clear conclusion is that inflation has a negligible impact on GDP and unemployment, with a negative association. As a result, it is argued that inflation plays a significant influence in India's macroeconomic parameters, but only in terms of GDP and unemployment. Rapid technological progress, economic cycle recessions, seasonal elements in some industries such as change in tastes, and climate conditions that alter demand for particular products and services, individual attitudes, and motivation to work and look for work all contribute to unemployment.

Shrikant Krupasindhu Panigrahi et al. (2020) looked examined the long-term association between unemployment, interest rate and inflation rates and economic growth in ASEAN-5 countries from 1995 to 2018, and found that interest, unemployment. All rates had a substantial long-term impact on GDP.

On the other hand, Xurmatovich (2020) analyzed the effect of net export, unemployment, inflation and investment on Austrian's gross domestic product. There are many of factors influencing to change of GDP directly or indirectly. Since, it is hard to take all of them into account when measuring GDP, the most influential factors, economists use, are probably unemployment, inflation, investment, exports and imports rates. However not always theory perfectly illustrates reality, so it would be important to see the impact of unemployment rate to GDP in the case of Austria. In 2018, research provided in journal "Austrian Facts" demonstrated increase on unemployment rate during the years between 2014 and 2016, interestingly, GDP illustrated almost proportional growth. However, it would be wrong decision to conclude that unemployment rate has positive effect on real GDP, since increase on unemployment rate does not directly perform that number of people who had a job decreased,

it only provides in-formation about what part of labor force which are unemployed. In fact, number of employed people might be increased which caused GDP also to increase, since more people work will cause boom on general consumption. However, because of another factor population, unit increase on workers were significantly small than overall population growth, thus on percentages, unemployment increased.

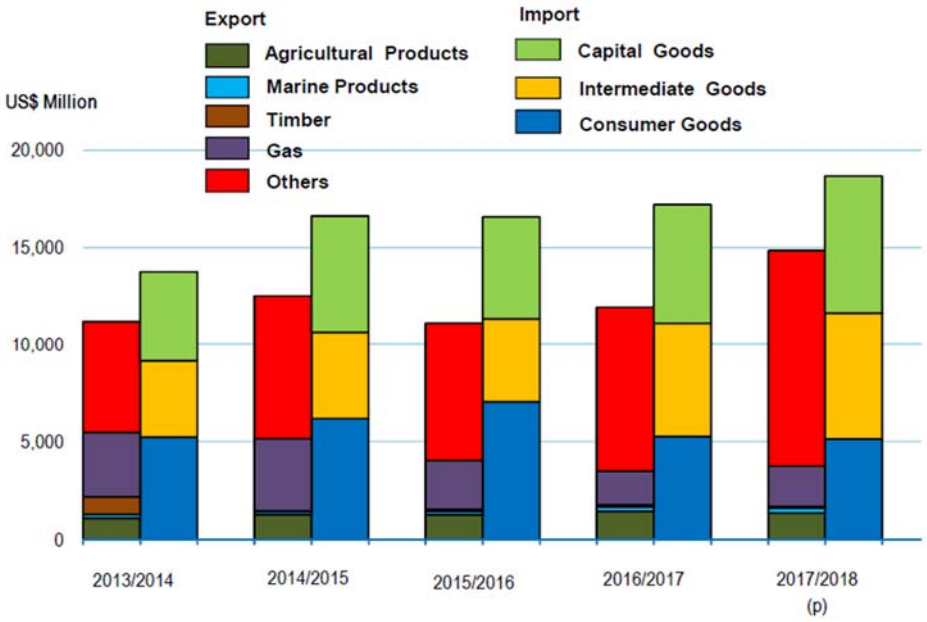
2.2. Trade Openness and Myanmar

Myanmar is one of Asia and the Pacific's 13 least developed countries (LDCs). This country boasts a young workforce, is wealthy in natural resources, and It is close to some of the most active economies in the world, such as China and India. The country is projected to realize its tremendous potential and accelerate economic development with the right policy mix, a better business environment, and more stable political structure.

As Myanmar resumes trade and investment relations with other countries in the region and the world, policy makers and trade leaders will prerequisite a variety of facts and figures from observers and researchers. Unfortunately, it is not easy because the country's existing economic, trade, and investment data is incomplete and not always reliable.

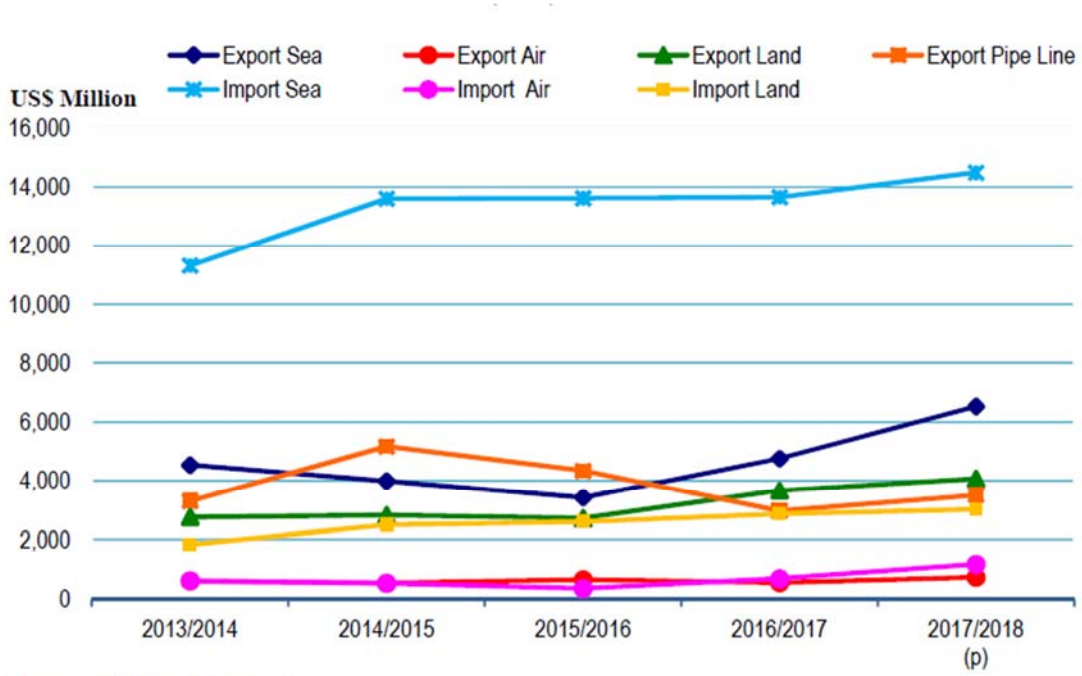
According to Myanmar Central Statistical Organization data in 2018, the MINISTRY OF PLANNING AND FINANCE (2018), Myanmar's value of trade, exports and imports by air, sea, land, and pipe line, and the direction of exports and imports by major countries are following.

Figure (1) Value of Trade



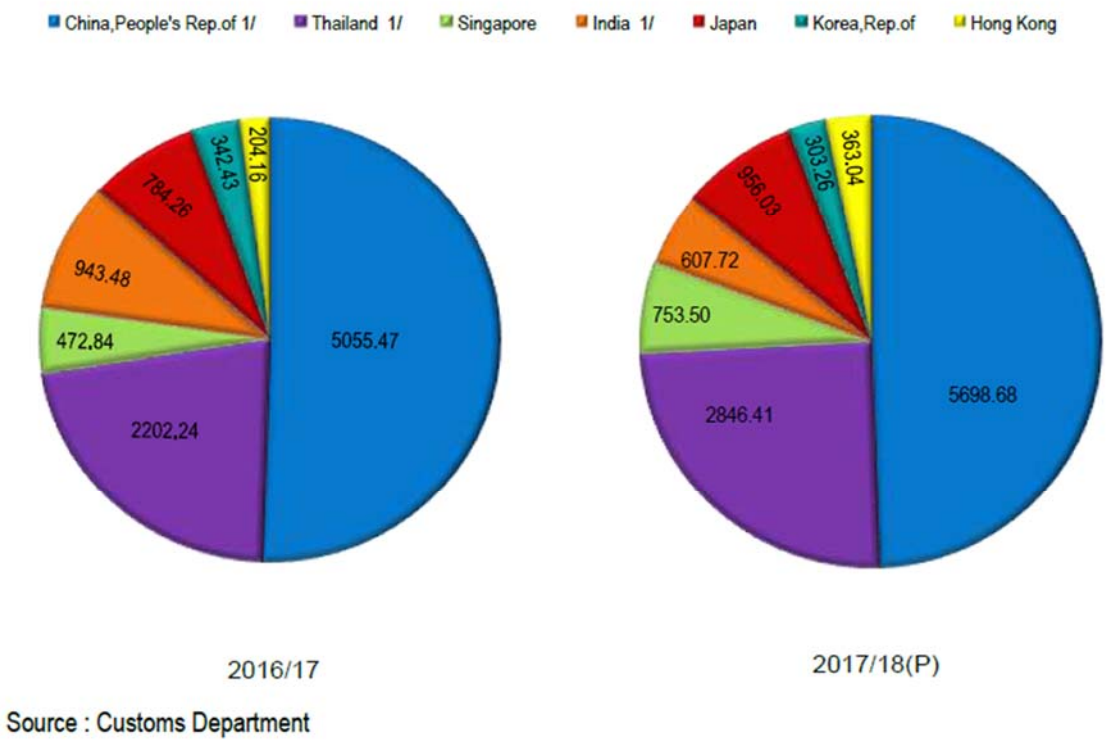
Source : Customs Department

Figure (2) export and import by air, sea, land, and pipeline



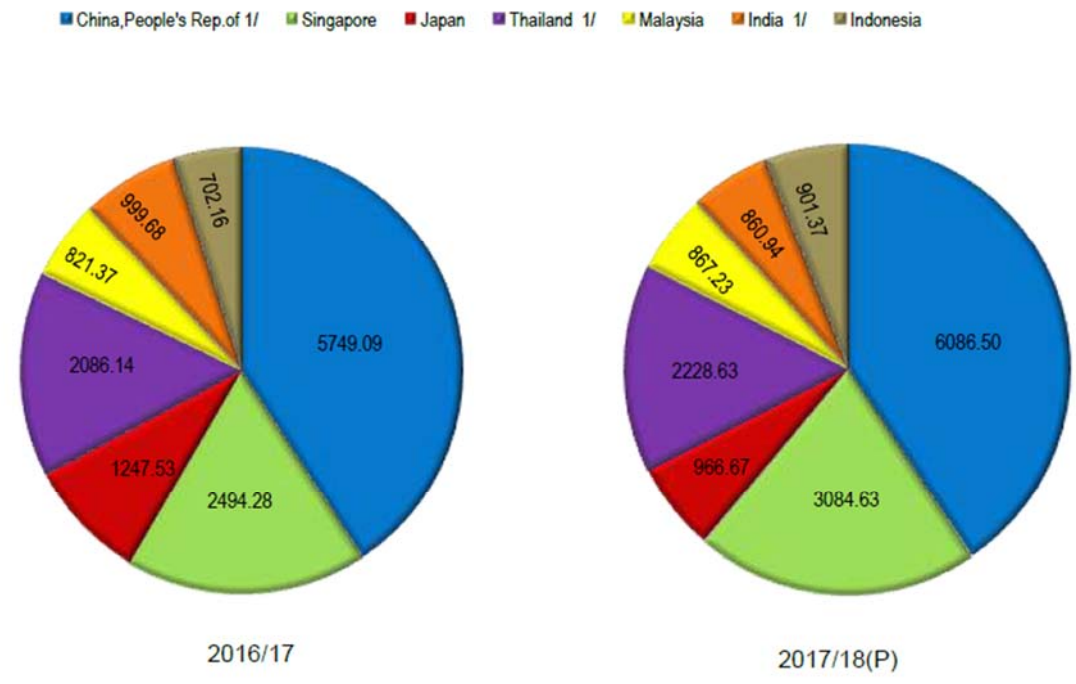
Source : Customs Department

Figure (3) Direction of export by major countries



Source : Customs Department

Figure (4) Direction of import by major countries



Source : Customs Department

Although it is difficult to analyze the flow of trade in Myanmar over time, the lack of data and some credibility issues underscores the importance of trade for Myanmar's economy, even with trade data.

2.2.1. The Market-Oriented Period's Trade Flow and Structure

Myanmar's economy can be used to assess Myanmar's foreign trade is important and can be measured by the level of trade openness that attracts foreign trade. The collapse of the legislative system in 1962 resulted in a resurgence of foreign trade. The government developed an economic plan with the help of some enlightened socialist scholars, in part through Dr. Hla Myint's strong views on free trade. However, the plan was rejected. Myanmar looked strong before 1988. Adheres to a self-reliant development policy.

All manufacturing and distribution methods were state-owned, and foreign trade come to be a government control. From 1964-65 to 1970-71, when foreign trade converted a state domination in 1962, volume and value of exports fell sharply. The changes in Myanmar's trade policy and structure from the 1990s are illustrated with relevant data to compare with real-time policies.

After gaining political power in 1988, the State Law and Order Restoration Council (SLORC) implemented a market-oriented economy and focused abroad. Economic reforms are a top priority for the SLORC government. This includes promoting private investment and entrepreneurship. These include opening up the economy to FDI and boosting exports. Foreign trade was liberalized in 1989, allowing for private participation as well as an "open" attitude toward foreign direct investment and foreign trading businesses.

Tin Maung Maung Than (2007); State control on both local and overseas trade is gone. Exporters and importers were allowed to trade privately. Registration allowed Encouraging investment and exports are important steps in the progress of trade.

“Import first, export later” policy is implemented by government, which allows overseas trade to import goods aimed at consignment sales. The government established three main values to monitor trade strategy in 1996: Trade-related actions had better: 1) be in the best interests of the Nation and the societies; 2) It must not be a financial load for the people. 3) Focus on sustainable benefits. Due to changing economic and political situation, the pattern of " export later, import first " has changed later and SEEs controls some exports, such as precious stones and minerals, forestry, and petroleum products. Imports are subject to the importation of this group controlled all same products. The certified exchange rate applies only to the public sector. The private sector has no opportunities of accepting foreign currency at the certified rate. At the certified exchange rate, it is hard to maintain regular foreign export and import, and business relationships. The open-door policy, on the other hand, resulted in major changes, with trade volumes with adjacent nations increasing.

2.2.2. The Democratic Public Government Period’s Trade Flow (2011-2015)

The new democratic government has implemented a number of reforms in all areas of the economy, containing trade, then adopted trade policy freely. The government has introduced competition laws and regulations to expose up the economy more easily and to integrate the external economy and to integrate into the global economy. Amend the intellectual property rights laws of the Consumer Protection Act.

The government has set four main goals to boost trade. 1) To provide trade of domestic and foreign for the economic progress of the country. 2) To increase economic effectiveness of government and private commercial housing; 3) To rise the country's foreign exchange incomes through export promotion, and 4) Encourage cooperatives and private entrepreneurs to get involved in trade. The government has legalized border trade by setting entry points and building customs and banking facilities.

Imports have been steadily rising over time, and since 2012-13 the trade volume has been in deficit annually. Exports rose sharply, but trade and export sanctions led to trade deficit long-term. Imports are now gradually rising, and the export and import's balance has been in deficit since January 2018, but it reached from 2016-17 takes narrowed slightly. During those years, Myanmar continued to be capital and intermediate goods' importer. Imports are less than two years' worth of imports and are still in deficit.

2.2.3. The Democratic Public Government Period's Trade Flow (2015 onwards)

The National League for Democracy became nation's initial civilian government after the November 2015 elections. Further, economic liberalization and a successful political transition have boosted Myanmar's investment and trade. The government's export promotion policy is to expand overseas to stimulate the export of goods through the operative use of natural and human resources.

2.2.4. Trade policy in Myanmar

In 1998, the government liberalized trade under a market-oriented economy and reduced trade and investment and announced that export upgrade and import substitution were cornerstone of its trade strategy but changed export standards and rules in 1998-99. Democratic administration implemented an open-door policy to expand economic potential after the 2010 election and Myanmar has transcended free export and import then has a robust aspiration to have free and fair trade all over the world. Myanmar has implemented mutual trade policies and tested international trade policies.

Myanmar has maintained membership in various international economic forums, despite its years of international isolation, primarily in the area of trade and regional integration. Myanmar established the General Agreement on Customs and Trade (GATT) in 1947, in addition to the International Monetary Fund and the World Bank (see 2012 for details on

current relations with member states). It is a member of the founding members of the World Trade Organization (WTO) in 1995. Myanmar fully accepted ASEAN membership in 1997. It was upgraded in 2010 by 44 countries and upgraded in 2010 by Anukoonwattaka, Economic, and Mikic (2016).

Myanmar participated of Association of Southeast Asian Nations. It is a participant of all other agreements, including the Investment (AIA), the ASEAN Economic Community (AEC), goods (ATIGA) and Services (AFAS). These agreements have great potential to boost Myanmar's foreign trade and investment, as they are Myanmar's main trading partners (the five powers: Australia, China, India, Japan, New Zealand and the Republic of Korea). From 2007 to 2009, these priority trade agreements accounted for more than 88% of Myanmar's exports and 94% of its imports. In addition, Myanmar is still negotiating with the Bay of Bengal Initiative on Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) the original rules of its free trade agreement.

Many restrictions and procedures have been simplified by the government in order to promote trade. The government has made significant adjustments to the trade sector's policies. They are as follows:

- In September 2011, the export tax was cut from 10% to 7%.
- For six months up to 14 February 2012, exports of seven agricultural commodities (rice, beans, maize, sesame, rubber, fisheries goods, and animal products) are exempt from the commercial tax. Only 2% of the value of these export commodities is subject to income tax.
- Exports of value-added items made of wood, bamboo, and rattan are exempt from commercial tax for the next five and a half months, until February 14, 2012. Only 2% of the value of these export commodities is subject to income tax.

- For a six-month period, from August 19, 2011, to February 18, 2012, the income tax on CMP exports was decreased from 10% to 2%.
- Licenses for import and export are now issued in two or three days.
- The monopoly on palm oil imports has been lifted.
- Automobiles can now be imported by service sector exporters, importers, and foreign exchange earners.
- A one-year extension of the property tax rate cut from 50% to 15% was granted till August 11, 2012.
- For six months, from August 19, 2011, to February 18, 2012, the income tax on foreign currency salary paid to nationals in the country and abroad was decreased from 10% to 2%.
- In September 2011, the withholding tax (paid on local purchases) was reduced to 2%.

Myanmar policy reforms by the government have been underway in Myanmar. It is also important to know how these impact the country's economic growth, as essential trade balances affect the country's economic growth.

3. DATA AND METHODOLOGY

3.1. Data

During the period 1962-2019, the current study takes to examine trade openness and GDP growth rate relationship in Myanmar, which eventually effects economic growth (fifty-eight years' analysis).

The variables described below are considered the main determinants of economic growth in Myanmar. This research would develop an empirical model using a quantitative method. As for the dependent variable, it would be (Ln_GDP) economic growth to GDP growth

(annual%) in Myanmar and would be derived from World Bank indicators. As for the independent variables, (Ln_TOP) Trade Openness and (Ln_INF) inflation would be analyzed. (Ln_TOP) Trade Openness derives from our world's data and the others are from World Bank indicators. For the estimation of our model, we applied the VECM model and used the EViews software package.

TABLE 1: LIST OF VARIABLES

Variable	**Description**	**Predicted Effect**
LnGDP	GDP growth (annual %)	Dependent Variable
LnTOP	Trade Openness	Independent Variables (+)
LnINF	Inflation, GDP deflator (annual%)	(+)

Following the previous studies, the most important factors of economic growth and their indices have been chosen as follows.

Growth in GDP (annual %)

The market price and the annual percentage GDP growth rate are calculated in constant local currency. These figures are always in the constant 2010 US dollar range. GDP is subtracted from the gross non-productive value added by all producers in the economy. It is estimated not to consider the loss of productive assets or natural resources.

Trade Openness

Trade openness can be measured by the summation of a country's exports and imports as a share of that country's GDP (in %).

Inflation, Deflator of GDP (annual%)

Inflation can be measured by GDP implicit deflator annual growth rate displays the rate of price variation in the economy as a total. The GDP implied deflator is the proportion of GDP in current local currency to GDP in constant local currency.

3.1.1. Gross Domestic Product and Trade Openness

Gross Domestic Product has directly relationship to trade openness because GDP equals summation of consumption, government expenditure and export and then deduct import. If exports are larger than imports, GDP will increase. if imports are larger than exports, GDP will decrease. GDP growth rate rises or falls in response to GDP increase or decrease too. A positive trade balance arises when a country's exports exceed its imports. A trade surplus occurs when domestic producers sell to foreigners in excess, resulting in an increase in GDP. As a result of the trade deficit, GDP could increase if domestic consumers consume more foreign products.

Moreover, Sofilda et al. (2015) also mentioned that the country's increased amount of exports and imports makes it more engaged in international trade transactions. The value added in terms of exports and imports is highly reliant on the technology used by industry to produce goods and services. In general, export value is low in developing countries, despite significant transaction volumes. This is because developing countries can only export raw materials, which have a low economic value, rather than importing goods and services with a high economic value.

Anaman (2004) found that Brunei's export growth had a substantial effect on long-term economic growth. Brunei's annual economic growth is driven by global oil prices, and the value of its oil exports may be influenced by factors other than oil prices and exports.

3.1.2. Gross Domestic Product and Inflation

Regarding inflation and unemployment's effects on the growth rate, in fact, inflation and growth rate are positive, and unemployment and growth rate are negative. However, Singh (2018) concludes that the impact of inflation inconsequentially affects GDP and unemployment, and the correlation is negative in India's longitudinal study for the period 2011-2018. The research study's clear conclusion is that inflation has a negligible impact on GDP and unemployment, with a negative association. As a result, it is stated that, with the exception of GDP and unemployment, inflation plays a substantial influence in India's macroeconomic parameters.

3.2. Methodology

This study uses annual data for Myanmar from 1962 to 2019. To see if the variables were stationary, we employed the Correlogram test. The Johansen co-integration test was used to avoid erroneous results, and the Vector Error Correction Model was investigated associationship (existing or not) among GDP, TOP, and INF in Myanmar. Following is the model used in our study:

$$\mathbf{Y = \beta 0 + \beta 1\ (TOP) + \beta 2\ (INF) + \mu}$$

Here:

Y = GDP Growth Rate (real)

TOP = Trade Openness

INF = Inflation

β = Coefficients of the independent variables

3.2.1. Selection of Lags Optimal and Test of Johansen Co-integration

Selection of lag is a very critical matter that can drastically alter the outcome. When the number of lag changes, result fluctuates and then touching the result. When the number of lag fluctuates, result fluctuates as well, impacting the decision. The previous assessment of all variables applied to forecast the upcoming value of dependent variables is referred to as "lag value. "Akaike Information Criterion , Schwarz – Bayesian , HannahQuinn , Likelihood Ratio test , and Final Prediction Error " were used to find the best lag. (Calculated using EViews 10)

Two series are co-integrated in economic theory if their long-run features are similar. Separate series may not be stable and differ from one another for short time, however in the long run, they converge to equilibrium. As a result, co-integration emphasizes the presence of a long-run balance to which the system eventually diverges. The co-integration Johansen test can determine the variables can change together or not over time. In general, if above two variables have co-integrated, they have a long-run relationship, and the Vector Error Correction Model can be used in investigation.

3.2.2. Vector Error Correction Model (VECM)

Vector Error Correction model by computing the error amendment term if the variables are co-integrated. The sign of the error must not be positive and lower than the critical value. Any short-term association among variables will improve the long-term stability of the association between independent and dependent factor variables. We can't apply the VECM model if the variables haven't co-integrated, but we can check with unconstrained Vector Autoregression (VAR).

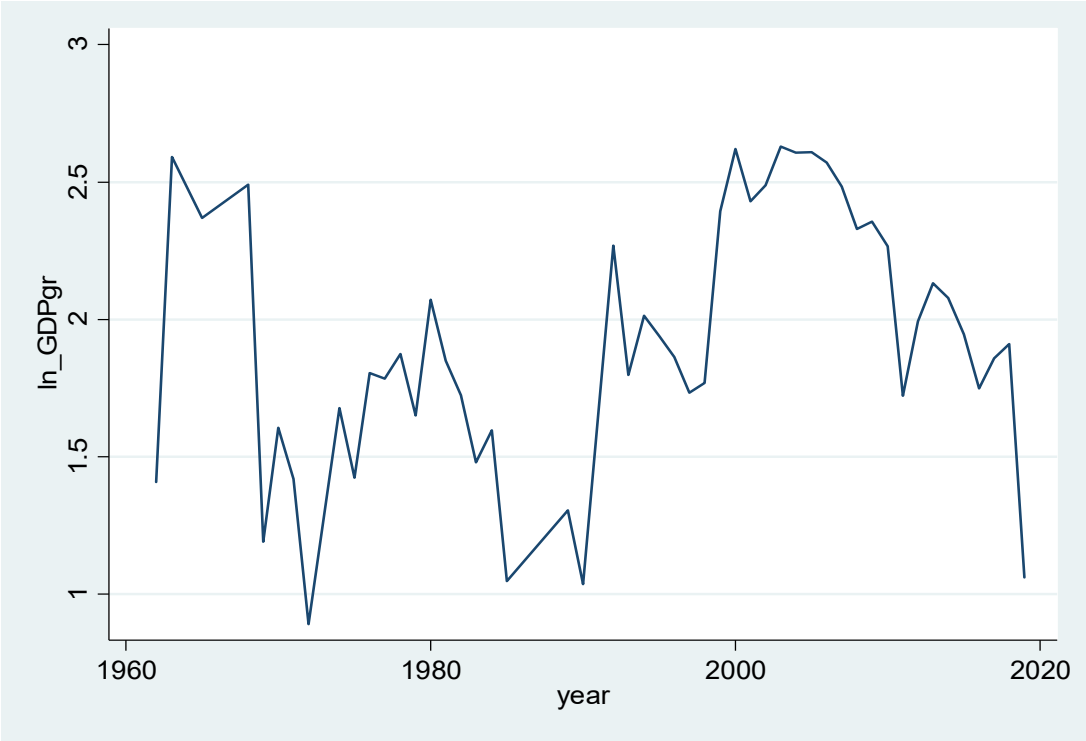
4. DESCRIPTIVE ANALYSIS, RESULTS AND DISCUSSION

4.1. Descriptive Analysis

4.1.1. Yearly trend in GDP, Trade Openness, and Inflation

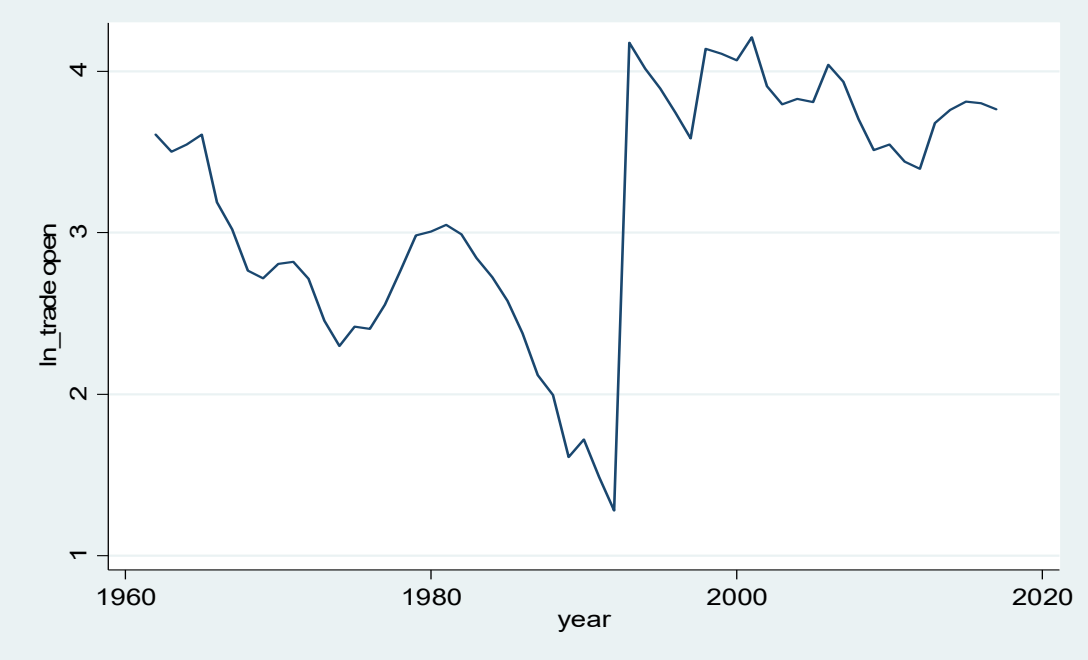
From 1962 to 2019, the Myanmar economic growth rate had a lot of fluctuations from 1962 to 1988, but after 1988, it had a progressive trend excluding in 2018 and 2019 (Figure 5). There was sharply fall in 1970, 1988, and 2011 because of the political transition period.

Figure (5) Myanmar's GDP Growth Rate (1962-2019)



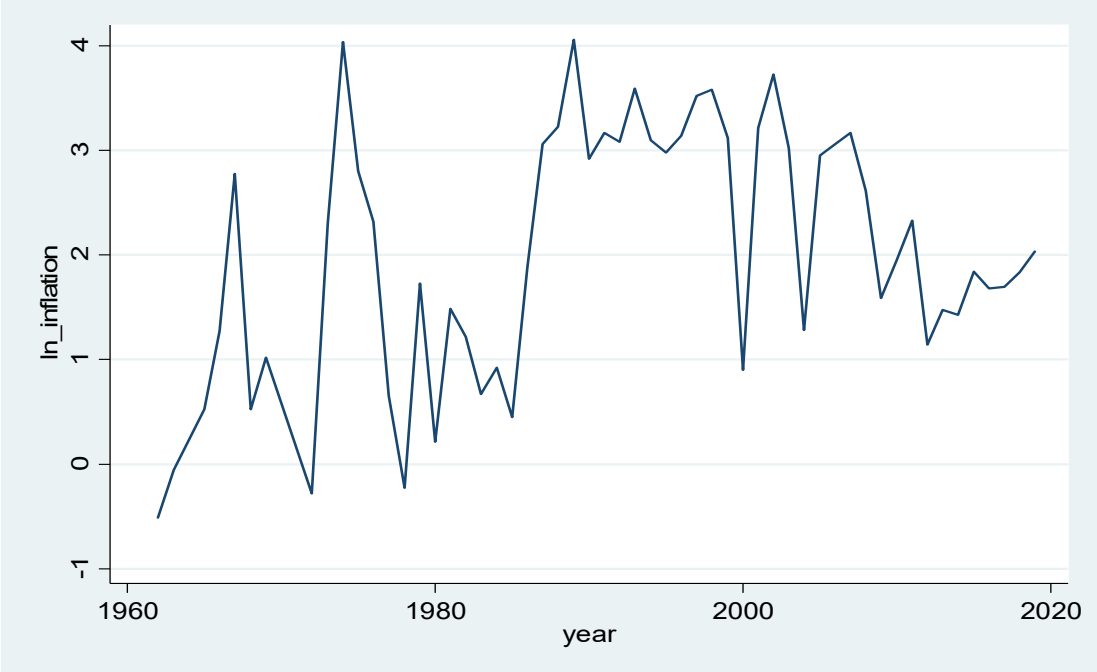
According to the trade openness data trend illustrated in Figure 6, trade openness dramatically decreased between 1992 and 1997 because of the Asian financial crisis, and after this year, trade openness increased again in 2015 and then decreased again.

Figure (6) Trade openness in Myanmar (1962-2019)



According to the inflation data as shown in Figure 7, Myanmar's inflation was not stable because Myanmar has been plagued by unstable political and economic conditions for a long time.

Figure (7) Inflation condition in Myanmar (1962-2019)



4.1.2. Summary Statistics

Table 2 shows the summary statistics for all variables in Descriptive Analysis.

Table 2: Summary Statistics

Variables	LN_GDPGR_	LN_TRADE_OPEN	LN_INFLATION
Mean	1.954196	3.300883	1.948017
Median	1.906500	3.565649	1.782140
Maximum	2.627852	4.210706	4.054988
Minimum	0.890292	1.278344	-0.509414
Std. Dev	0.466439	0.725019	1.274824
Skewness	-0.324386	-0.927086	-0.153287
Kurtosis	2.375682	3.180645	1.886706
Jarque-Bera	1.553798	6.651951	2.555705
Probability	0.459830	0.035937	0.278635
Sum	89.89304	151.8406	89.60877
Sum Sq. Dev	9.790425	23.65437	73.13290
Observations	46	46	46

The sample data for Myanmar spans 58 years of observation, from 1962 to 2019. GDP growth rate is the variable of dependent, and trade openness is the major independent variable.

4.2. Results and Discussion

This study analyzed three steps to develop a VECM model. They are:

(1) lag selection

(2) Johansen test of cointegration and

(3) VECM model

4.2.1. Lag selection

With three endogenous variables, we build the VAR system (GDP, TOP, and INF). This research use VAR with a 4-lag order. Table (3) summarizes the outcomes of VAR. Table 3 shows the outcomes of the lag length criteria test, which was conducted using a 4-variable VAR method with a maximum lag number of 4.

Lag exists a critical issue that can drastically alter the outcome. While the lag number fluctuates, the result fluctuates also, influencing the decision. "Akaike Information Criterion (AIC), Schwarz-Bayesian (SBIC), Hannah-Quinn (HQIC), Likelihood Ratio test (LR), and Final Prediction Error (FPE)" were used to find the optimal lag. We have to choose lag 1 and star* means this is an optimal lag.1lag has been recommended. One lag is asked to meet four criteria.

$\hat{R}$ is 72%, which is not high, and the F-statistic is not significant. R-squared remains 72%, meaning that 72% of the difference in GDP is due to TOP and INF's changes. The last 28% are because of errors in terms. Actually, our data fits well.

Table (3) Vector Autoregression Estimates

Estimates of Vector Autoregression

Date: 06/13/21 Time: 12:00

Sample (adjusted): 15 56

Included observations: 34 after adjustments

Standard errors in ( ) & t-statistics in [ ]

	Ln_GDP	Ln_TOP	Ln_INF
Ln_GDP (-1)	0.724656	0.163067	-0.574738
	(0.21176)	(0.16511)	(0.76895)

	[3.42213]	[0.98763]	[-0.74743]
Ln_GDP (-2)	0.046548	-0.180372	0.817757
	(0.19932)	(0.15541)	(0.72380)
	[0.23353]	[-1.16059]	[1.12981]
Ln_TOP (-1)	0.072243	0.943765	0.932756
	(0.12390)	(0.09661)	(0.44993)
	[0.58307]	[9.76899]	[2.07313]
Ln_TOP (-2)	-0.051843	-0.007794	0.026960
	(0.08204)	(0.06397)	(0.29793)
	[-0.63189]	[-0.12183]	[0.09049]
Ln_INF (-1)	0.065742	-0.023118	0.148201
	(0.05425)	(0.04230)	(0.19700)
	[1.21183]	[-0.54653]	[0.75229]
Ln_INF (-2)	0.044022	0.014763	0.180328
	(0.04597)	(0.03585)	(0.16694)
	[0.95758]	[0.41185]	[1.08020]
c	0.144222	0.271714	-2.612590
	(0.28522)	(0.22239)	(1.03573)
	[0.50565]	[1.22178]	[-2.52247]

R-squared	0.728893	0.909566	0.546802
Adj. R-squared	0.668647	0.889470	0.446092
Sum sq. resids	1.328756	0.807830	17.52162
S.E. equation	0.221840	0.172973	0.805574
F-statistic	12.09861	45.26021	5.429438
Log likelihood	6.872089	15.33209	-36.97419
Akaike AIC	0.007524	-0.490123	2.586717
Schwarz SC	0.321775	-0.175872	2.900968
Mean dependent	2.042517	3.512358	1.997238
S.D. dependent	0.385385	0.520281	1.082396

Determinant resid covariance	
(dof adj.)	0.000790
Determinant resid covariance	0.000396
Log likelihood	-11.53519
Akaike information criterion	1.913834
Schwarz criterion	2.856587
Number of coefficients	21

Table (4) Test for Lag Length Criteria for Myanmar

VAR Lag Order Selection Criteria

Endogenous variables: Ln_GDP Ln_TOP Ln_INF

Exogenous variables: c

Date: 06/13/21 Time: 12:04

Sample: 1 58

Included observations: 30

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-56.95910	NA	0.010930	3.997274	4.137393	4.042099
1	**-14.23068**	**74.06261***	**0.001159***	**1.748712***	**2.309191***	**1.928014***
2	-8.782811	8.353394	0.001501	1.985521	2.966359	2.299299
3	-5.156185	4.835501	0.002264	2.343746	3.744943	2.792001
4	1.295207	7.311577	0.002979	2.513653	4.335209	3.096385

* Shows lag order designated by the principle

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

4.2.2. The Johansen test of cointegration

Requirement for this step is that non-stationary variables are at the level, but they will come to be stationary once we convert all of the variables to first differences.

In table (5), Correlogram of D(gdp)

Null: the variable is stationary.

Alt: variable is not stationary.

We cannot accept the null hypothesis and can accept the alternative hypothesis since the p-value is very small, less than 5%, indicating that the variable is not stationary.

Table (5) Correlogram of D(gdp)

Date: 06/13/21 Time: 12:32

Sample: 1 58

Included observations: 50

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |*** |	. |*** |	1	0.456	0.456	11.057	0.001
. |*** |	. |** |	2	0.412	0.257	20.252	0.000
. |*** |	. |*. |	3	0.388	0.177	28.578	0.000
. |** |	. | . |	4	0.263	-0.019	32.476	0.000
. |** |	. |*. |	5	0.338	0.161	39.081	0.000
. |*. |	.*| . |	6	0.157	-0.135	40.539	0.000
. |*. |	. | . |	7	0.161	0.009	42.111	0.000
. |*. |	. | . |	8	0.177	0.041	44.040	0.000
. | . |	.*| . |	9	-0.026	-0.194	44.084	0.000
. | . |	. | . |	10	0.033	-0.009	44.155	0.000
. | . |	. | . |	11	-0.040	-0.040	44.262	0.000
. | . |	. | . |	12	-0.036	0.019	44.352	0.000
. | . |	. |*. |	13	0.043	0.090	44.485	0.000
. | . |	. | . |	14	-0.054	-0.002	44.695	0.000
.*| . |	.*| . |	15	-0.116	-0.173	45.690	0.000
.*| . |	.*| . |	16	-0.192	-0.157	48.521	0.000
**| . |	.*| . |	17	-0.221	-0.068	52.373	0.000
.*| . |	. | . |	18	-0.121	0.062	53.571	0.000

.*| . |	. | . |	19	-0.182	-0.000	56.338	0.000
**| . |	.*| . |	20	-0.226	-0.099	60.752	0.000
.*| . |	. |*. |	21	-0.086	0.146	61.422	0.000
.*| . |	. | . |	22	-0.186	-0.059	64.633	0.000
.*| . |	. |*. |	23	-0.101	0.074	65.620	0.000
.*| . |	.*| . |	24	-0.156	-0.083	68.057	0.000

In table (6), Correlogram of D(gdp) 1st difference-

Null: variable is stationary.

Alt: variable is not a stationary.

We can accept the null hypothesis and cannot accept the alternative hypothesis since p-value is high, implying that the variable is stationary in the first difference.

Table (6) Correlogram of D(gdp) 1st difference

Date: 06/13/21 Time: 12:34

Sample: 1 58

Included observations: 44

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.*| . |	.*| . |	1	-0.153	-0.153	1.0999	0.294
. | . |	. | . |	2	-0.039	-0.063	1.1716	0.557
. |*. |	. |*. |	3	0.121	0.108	1.8931	0.595
. | . |	. |*. |	4	0.072	0.110	2.1570	0.707
. | . |	. | . |	5	-0.038	0.001	2.2324	0.816
**| . |	**| . |	6	-0.232	-0.259	5.0969	0.531

. | . |	.*| . |	7	-0.065	-0.191	5.3268	0.620
. | . |	. | . |	8	0.048	-0.010	5.4563	0.708
**| . |	.*| . |	9	-0.218	-0.156	8.1974	0.514
. |*. |	. |*. |	10	0.090	0.117	8.6748	0.563
.*| . |	.*| . |	11	-0.098	-0.085	9.2620	0.598
. | . |	.*| . |	12	-0.058	-0.137	9.4746	0.662
. |*. |	. | . |	13	0.091	-0.001	10.013	0.693
. | . |	. |*. |	14	0.061	0.075	10.265	0.743
. | . |	. | . |	15	-0.047	-0.062	10.418	0.793
. | . |	. | . |	16	0.015	-0.012	10.434	0.843
. | . |	.*| . |	17	-0.014	-0.102	10.448	0.884
. |*. |	. | . |	18	0.080	-0.046	10.952	0.896
. | . |	. | . |	19	-0.013	0.074	10.966	0.925
.*| . |	.*| . |	20	-0.149	-0.149	12.848	0.884

In table (7), Corregloram of Ln_TOP

Null: variable is stationary.

Alt: variable is not stationary.

We cannot accept the null hypothesis and cannot reject the alternative hypothesis since the p-value is very small, less than 5%, indicating that variable is not stationary.

Table (7) Corregloram of Ln_TOP

Date: 06/13/21 Time: 12:37

Sample: 1 58

Included observations: 56

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |****** |	. |****** |	1	0.829	0.829	40.603	0.000
. |***** |	. | . |	2	0.681	-0.023	68.458	0.000
. |**** |	. | . |	3	0.555	-0.011	87.335	0.000
. |*** |	.*| . |	4	0.423	-0.094	98.519	0.000
. |*** |	. |*. |	5	0.357	0.123	106.65	0.000
. |** |	.*| . |	6	0.253	-0.165	110.81	0.000
. |*. |	. | . |	7	0.174	0.018	112.82	0.000
. |*. |	. | . |	8	0.113	-0.030	113.69	0.000
. | . |	. | . |	9	0.042	-0.046	113.81	0.000
. | . |	. | . |	10	0.013	0.034	113.82	0.000
. | . |	. |*. |	11	0.014	0.091	113.83	0.000
. | . |	. | . |	12	0.028	0.036	113.89	0.000
. | . |	. | . |	13	0.052	0.026	114.10	0.000
. | . |	. | . |	14	0.052	-0.038	114.30	0.000
. | . |	. | . |	15	0.042	-0.033	114.44	0.000
. | . |	. | . |	16	0.022	-0.056	114.48	0.000
. | . |	. | . |	17	-0.009	-0.043	114.48	0.000
. | . |	.*| . |	18	-0.046	-0.073	114.67	0.000
.*| . |	. | . |	19	-0.089	-0.047	115.36	0.000
.*| . |	. | . |	20	-0.122	-0.009	116.72	0.000
.*| . |	. | . |	21	-0.161	-0.049	119.13	0.000
**| . |	.*| . |	22	-0.209	-0.068	123.29	0.000

**| . |	.*| . |	23	-0.268	-0.112	130.37	0.000
***| . |	.*| . |	24	-0.348	-0.160	142.64	0.000

The Correlogram of D (Ln_TOP)-P-value in table (8), is high, greater than 5%, and we can accept the null hypothesis or accept alternative hypothesis, indicating that the variable is stable.

Table (8) Correlogram of D(TOP) - 1st difference

Date: 06/13/21 Time: 12:43

Sample: 1 58

Included observations: 55

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.*| . |	.*| . |	1	-0.066	-0.066	0.2537	0.614
.*| . |	.*| . |	2	-0.074	-0.079	0.5774	0.749
. | . |	. | . |	3	0.020	0.009	0.6009	0.896
.*| . |	.*| . |	4	-0.181	-0.186	2.6059	0.626
. |*. |	. |*. |	5	0.141	0.124	3.8593	0.570
.*| . |	.*| . |	6	-0.069	-0.090	4.1647	0.654
. | . |	. | . |	7	-0.061	-0.043	4.4102	0.732
. | . |	. | . |	8	0.033	-0.024	4.4821	0.811
.*| . |	.*| . |	9	-0.147	-0.115	5.9511	0.745
.*| . |	.*| . |	10	-0.098	-0.166	6.6267	0.760
. | . |	.*| . |	11	-0.035	-0.083	6.7142	0.822
. | . |	. | . |	12	-0.014	-0.046	6.7285	0.875

. | . |	. | . |	13	0.071	-0.004	7.1026	0.897
. | . |	. | . |	14	0.031	0.010	7.1763	0.928
. | . |	. | . |	15	0.017	0.015	7.1992	0.952
. | . |	. | . |	16	0.008	-0.021	7.2039	0.969
. | . |	. | . |	17	0.016	0.011	7.2254	0.980
. | . |	. | . |	18	0.015	-0.016	7.2447	0.988
. | . |	.*| . |	19	-0.033	-0.070	7.3414	0.992
. | . |	. | . |	20	0.051	0.016	7.5782	0.994
. | . |	. | . |	21	0.023	0.011	7.6265	0.997
. | . |	. | . |	22	0.034	0.049	7.7354	0.998
. | . |	. |*. |	23	0.060	0.082	8.0907	0.998
. | . |	. | . |	24	-0.034	0.035	8.2080	0.999

Table 9 shows that the P-value for the Correlogram of D (Ln INF) is very small, less than 5%, allowing us to cannot accept the null and cannot reject the alternative, indicating variable is not stationary.

Table (9) Correlogram of D(INF)-

Date: 06/13/21 Time: 12:45

Sample: 1 58

Included observations: 55

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |**** |	. |**** |	1	0.506	0.506	14.838	0.000

. |** |	. | . |	2	0.274	0.024	19.269	0.000
. |** |	. |** |	3	0.337	0.255	26.114	0.000
. |** |	. | . |	4	0.272	0.009	30.648	0.000
. |** |	. | . |	5	0.218	0.067	33.625	0.000
. |*. |	. | . |	6	0.206	0.026	36.344	0.000
. |*. |	. | . |	7	0.119	-0.064	37.271	0.000
. |*. |	. | . |	8	0.085	-0.002	37.755	0.000
. | . |	. | . |	9	0.057	-0.050	37.979	0.000
. | . |	. | . |	10	0.030	-0.007	38.040	0.000
.*| . |	**| . |	11	-0.197	-0.325	40.792	0.000
. | . |	. |** |	12	-0.050	0.241	40.974	0.000
. | . |	.*| . |	13	0.011	-0.075	40.983	0.000
. | . |	. |** |	14	0.062	0.297	41.273	0.000
. |*. |	. | . |	15	0.102	-0.018	42.084	0.000
. | . |	. | . |	16	0.008	-0.031	42.089	0.000
. | . |	. | . |	17	-0.030	-0.037	42.161	0.001
. | . |	.*| . |	18	-0.017	-0.139	42.186	0.001
.*| . |	. | . |	19	-0.072	-0.031	42.631	0.001
. | . |	.*| . |	20	-0.063	-0.126	42.991	0.002
.*| . |	.*| . |	21	-0.145	-0.067	44.927	0.002
.*| . |	. | . |	22	-0.069	-0.040	45.384	0.002
.*| . |	. | . |	23	-0.124	-0.019	46.886	0.002
**| . |	.*| . |	24	-0.219	-0.124	51.736	0.001

Table (10) expresses that the p-value for the Correlogram of D (Ln TOP) is high, greater than 5%, and we can accept the null hypothesis or accept the alternative hypothesis, which means that the variable is stationary.

Table (10) Correlogram of D(INF)- 1st difference

Date: 06/13/21 Time: 12:46

Sample: 1 58

Included observations: 52

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.*| . |	.*| . |	1	-0.183	-0.183	1.8430	0.175
.*| . |	.*| . |	2	-0.134	-0.174	2.8566	0.240
.*| . |	.*| . |	3	-0.104	-0.175	3.4735	0.324
. | . |	.*| . |	4	-0.046	-0.145	3.5966	0.463
. | . |	.*| . |	5	0.031	-0.069	3.6542	0.600
. | . |	.*| . |	6	-0.034	-0.108	3.7259	0.714
. | . |	.*| . |	7	-0.014	-0.091	3.7374	0.809
. |*. |	. |*. |	8	0.139	0.088	4.9646	0.761
. | . |	. | . |	9	-0.009	0.018	4.9704	0.837
. |*. |	. |*. |	10	0.087	0.139	5.4756	0.857
***| . |	***| . |	11	-0.405	-0.362	16.728	0.116
. |*. |	. |*. |	12	0.177	0.080	18.939	0.090
. | . |	.*| . |	13	-0.017	-0.123	18.961	0.124
. |*. |	. |*. |	14	0.128	0.114	20.174	0.125
. | . |	. | . |	15	0.055	0.052	20.405	0.157

. | . |	. | . |	16	-0.046	0.042	20.574	0.195
. | . |	. | . |	17	-0.023	-0.010	20.617	0.244
. | . |	. | . |	18	-0.033	-0.044	20.707	0.294
. | . |	. |*. |	19	-0.008	0.101	20.713	0.353
. |*. |	. |*. |	20	0.099	0.081	21.573	0.364
.*| . |	. | . |	21	-0.169	-0.064	24.163	0.285
. |*. |	. | . |	22	0.146	-0.061	26.161	0.245
. | . |	. |*. |	23	-0.020	0.075	26.200	0.292
. | . |	. | . |	24	0.062	0.023	26.585	0.324

In summary, our three variables are non-stationary at the level, but they become stationary when we convert them all to first difference. That means all our three variables are incorporated into the same sequence, we can now simply perform the Jonhansen cointegration test because the precondition has been met.

Table (11): The Jonhansen test of cointegration Author's calculation in Eviews 10

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.338271	17.85993	24.27596	0.2594
At most 1	0.102502	3.821369	12.32090	0.7365
At most 2	0.004239	0.144444	4.129906	0.7537

Trace test shows no cointegration at the 0.05 level

* Denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.338271	14.03856	17.79730	0.1684
At most 1	0.102502	3.676925	11.22480	0.6802
At most 2	0.004239	0.144444	4.129906	0.7537

The Johansen co-integration test approach is used to calculate co-integration rank. For the rank of co-integration, there exist two probability estimators. Table 11 summarizes the findings.

To explore the hypothesis that if a trace statistic is more than the critical value, the null hypothesis cannot be accepted. We can accept the null hypothesis as the trace statistic is less than the critical value. Three variables have a long-term relationship and are co-integrated. We cannot accept the null hypothesis if the max-eigen statistic is bigger than crucial threshold. We can accept the null hypothesis because the Max-eigen statistic is less than the crucial threshold. Three variables have a long-term relationship and are cointegrated.

Factors are not co-intgrated (r=0) against the alternative of one or more cointegrating vectors (r>0), we have to see at the value of λTRACE. Column 3 of the foremost part of Table 11 shows the value of λTRACE equivalent for each number of the co-integrating vector: λTRACE (0) = 17.85, λTRACE (1) =3.82, λTRACE (2) = 0.14, and since the value of λTRACE (0,1,2) does not exceed the critical value (24.27, 12.32, 4.12) at the 95% significance level, we

can accept the null hypothesis of two co-integrating vectors and cannot reject the null hypothesis.

Column 3 of the following part of Table 11 shows the values of λMAX (0), λMAX(1), and λMAX(2) are 14.03, 3.67 and 0.14, respectively. The null hypothesis test r1, r2, r3 can be accepted at the 95% level, because the value of λMAX(1,2,3) is less than the 5% critical value of (17.7, 11.2, 4.12). This advises that the amount of co-integration vectors are all three. Therefore, our three variables are co-integrated in this system. If the variables are co-integrated or have a long-term correlation, we can run a restricted VAR, also known as a VECM model. We can't run the VECM model if the variables aren't co-integrated, thus we have to use unrestricted VAR instead. In the following part, we'll look at the long-run relationship between TOP and INF and Myanmar's GDP growth rate from 1962 to 2019. As a result, we can use the VECM Model to estimate.

4.2.3. Estimation Long-run Coefficients of VECM

Table (12): Estimation Long − run Coefficients of VECM

Dependent variable is ln_gdp

Variables	Coefficient	Std. Error	t − Statistics
Ln_TOP	1.918345	0.67675	2.83464
Ln_INF	-1.524444	0.35964	-4.23877
Error Correction	-0.069759	(0.02866)	(02.43363)

Source: Author's calculation in E-view 10

When two co-integrating vectors are calculated using the VECM model, coefficients can be displayed as long-run relationship. The findings suggest trade openness takes a long-term positive influence on Myanmar's GDP growth rate, although the effect is insignificant

because the statistics test are bigger than 2. Inflation has a long-term negative influence on GDP growth, such that for every 1% increase in INF, GDP falls by 1.52 percent due to a negative sign. To validate the long and short term associations of the variables, they must not be positive and cannot be insignificant. This method is rapidity of correction term that converges to the long-run equilibrium, and it has a non-positive signal, indicating it does so. ECM term is non-positive -0.069759 and significant at a 1% significance level, according to findings. As a result, this study can conclude that the estimated model for our study has both long-run and short-run associations.

4.2.4 Estimation Short Run Coefficients of VECM

Table (13): Result of the VECM Model (Short Run)

Dependent Variable: D(LN_GDP)

Method: Least Squares (Gauss-Newton / Marquardt steps)

Date: 06/13/21 Time: 16:50

Sample (adjusted): 9 57

Included observations: 36 after adjustments

D(LN_GDP) = C (1) * (LN_GDP (-1) + 1.91834544858*LN_TOP (-1) -
1.52444439359*LN_INF (-1) - 5.5688226943) + C (2) *D (LN_GDP (
-1)) + C (3) *D (LN_TOP (-1)) + C (4) *D (LN_INF (-1)) + C (5)

	Coefficient	Std. Error	t-Statistic	Prob.
C (1)	**-0.065968**	0.028140	-2.344261	0.0256
C (2)	-0.196171	0.130663	-1.501352	0.1434
C (3)	0.073333	0.074935	0.978622	0.3353
C (4)	-0.032074	0.042336	-0.757610	0.4544

C (5)	-0.014617	0.038255	-0.382096	0.7050

R-squared	0.271401	Mean dependent var	0.004141
Adjusted R-squared	0.177388	S.D. dependent var	0.243461
S.E. of regression	0.220815	Akaike info criterion	-0.054741
Sum squared resid	1.511531	Schwarz criterion	0.165192
Log likelihood	5.985344	Hannan-Quinn criter.	0.022021
F-statistic	2.886848	Durbin-Watson stat	1.730870
Prob(F-statistic)	0.038471		

The C1 error correction term accelerates adjustment toward equilibrium, and there are two tests for long run and short run causality.

(1) long run causality

If C1 is negative and significant, then we can say that there is a long run causality running from TOP and INF to GDP. Therefore, there is a long-run causality running from TOP and INF to GDP.

(2) short run causality

Null: C3=0

Alternative: C3≠0

Test the Wald test for short-run causality. The results are followed.

Table (14) Result of Wald Test (Short Run) for ln_TOP to Ln_GDP

Statistics	**Value**	**df**	**Probability**
F-statistic	**0.957701**	**(1,31)**	**0.3353**
Chi-square	**0.957701**	**1**	**0.3278**
Null Hypothesis: C (3) = 0			

Null Hypothesis Summary			
Normalized Restriction (= 0)	**Value**	**Std Err.**	
C (3)	**0.073333**	**0.074935**	

Restrictions are linear in coefficients.

H0: There do not have short run causality between LnTOP (all lags) and LnGDP.

H1: There have a short run causality LnTOP between (all lags) and LnGDP.

The p-value is greater than 0.05 the level, according to the results as do not have short-run causation. LnTOP's (all lags) effect on LnGDP is statistically insignificant.

Table (15): Result of Wald Test (Short Run) for Ln_INF to Ln_GDP

Statistics	**Value**	**df**	**Probability**
F-statistic	**0.573974**	**(1,31)**	**0.4544**
Chi-square	**0.573974**	**1**	**0.4487**
Null Hypothesis: C (4) = 0			
Null Hypothesis Summary			
Normalized Restriction (= 0)	**Value**	**Std Err.**	
C (4)	**-0.032074**	**0.042336**	

Restrictions are linear in coefficients.

H0: There do not have short-run causality between Ln_INF (all lags) and Ln_GDP.

H1: There have short-run causality between Ln_INF (all lags) and Ln_GDP.

The probability value is more than the 0.05 threshold value, according to results. There is no short-run causation, and Ln INF's (all lags) effect on LGDP is negative insignificant. In conclusion, there is long-run causality between TOP and INF and GDP, but no short-run causality.

4.2.5. Tests for Diagnostics

Diagnostic tests were employed to verify the model's constancy, serial correlation normality and heteroscedasticity in this study. The LM test examines the serial correlation of model's residuals, while the heteroskedasticity test examines the model's heteroskedasticity. It was used to see how stable the model was. Table-16 shows the results of these tests.

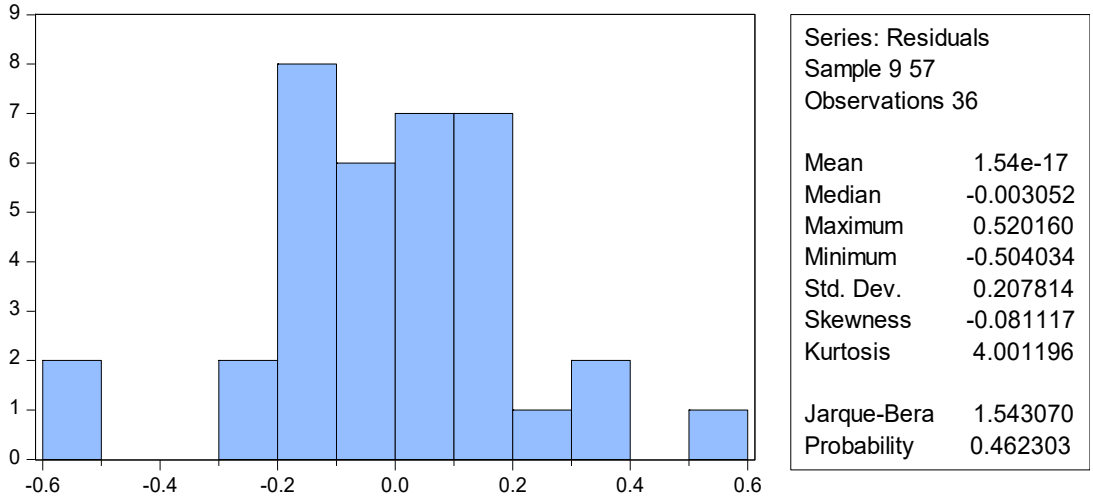
Table (16) Tests of Diagnostic

Breusch − Godfrey Serial Correlation LM Test	
Obs ∗ R^2	.7174 (p-value)
Normality Test	
Jarque-Bera	.46203(p-value)
Heteroskedasticity test: ARCH	
Obs* R^2	0.3963(p-value)

Using the Breusch-Godfrey LM test, we can determine whether our model is serially correlated or not. We can't reject the null hypothesis because the probability value is more than 5%. As a result, there is no serial correlation between residuals. That is an excellent model. The probability is 0.7174, which is higher than 0.05. As a result, the model is serially uncorrelated. The Heteroskedasticity test is then used to determine whether or not our variables are of constant variance. The probability value is 0.3963, which is larger than 5%. As a result, the residuals are homoscedastic (constant variance).

Figure (8) shows how we determine whether our data is regularly distributed. The residual is normally distributed because the probability value is bigger than 0.05.

Figure (8) Normal Distribution Test



5. POLICIES RCOMMENDAIONS AND CONCLUTION

5.1. Policies recommendations

The evidence showing an open policy attitude is superior to an inward-looking policy stance in terms of long-run economic growth should not be taken to mean that no government involvement is required. Individual country studies show that policymakers in some economies, for instance South Korea, actively intervened to encourage exports when they transitioned from policies that encouraged import substitution and toward an outward-oriented policy strategy. Some authors argue that they were successful despite these interventionist operations since liberalizing policies predominated, but then it is possible that a few of these government actions really contributed to higher growth rates. Individual country and cross-country studies lead to the conclusion that, on balance, wider economic openness is preferable for growth than an overall inner economic approach, but that some guidelines may cause rigid economic problems may be suitable at times and in exceptional conditions.

The statistical result that rises in trade and growth are often completely associated in a statistically meaningful way as well includes the causativeness issue. Trade policy changes, other non-trade policy measures, or circumstances not related to policy actions of the

government could all contribute to an increase in exports. As previously stated, the increase in exports could be an outcome relatively a cause of economic growth. Furthermore, using exports as a measure of openness takes disadvantage of existence an element of GDP, which is standard measurement of economic growth.

The majority of the country's studies have focused on government policies that extend far beyond strictly specified trade obstacles for international trade. Actually, developing countries have frequently advised that lowering trade barriers is a better strategy to achieve greater, more sustainable growth rates than increasing trade restrictions. However, experts offering such counsel frequently stress the importance of a steady and nondiscriminatory exchange rate scheme, as well as sound policies and corruption-free economic policy management, in order for trade freely be long-run in effect. Various national studies appear to corroborate this kind of plan guidance, but cross-country statistical analyses do not contradict it. However, following criticisms of these second prove that we should be wary of assigning to some extent single economic strategy, such as pull down trade obstacles, as adequate government manner to boost economic growth.

5.2. Conclusion

Using the VECM model, this research examines whether trade openness has a positive or negative effect on economic growth in Myanmar from 1962 to 2019. LnGDP is the dependent, whereas Ln TOP and Ln INF are the independent variables. The variables are all stationary. There is a positive relationship between trade openness and Myanmar's gross domestic product growth rate, but it is not significant in the long run. As a result, we are unable to dismiss the research's principal hypothesis. The TOP variable demonstrates no short run causation in the short run analysis. This is related to Myanmar's current trade deficit. Exports are lower than imports in Myanmar, rejecting the null hypothesis of this study. Our export

policy should also be changed. It is critical for the government and policymakers to create efficient and effective trade liberalization policies.

Furthermore, inflation has long-term negative relationship with the growth of GDP. However, there is no causation between Ln INF (all lags) and Ln GDP in the short run. This is connected to Myanmar's economic status. This result proves that inflation is negative because if Myanmar gets economic growth, people will save money in the bank. Why do they save money in bank? Because Myanmar’s interest rate is quite high compared with the other countries, and therefore, inflation will decrease, and the null hypothesis of this study can be rejected. If this situation persists for a long time, it may have a severe influence on Myanmar's entire economy. As a result, the findings of this study revealed that inflation and economic growth rate had a negative relationship in the long run. We should also alter our monetary policy, such as by lowering interest rates. Furthermore, the new administration should implement proper strategic policies to improve trade flows and implement important changes in order for Myanmar to succeed supportable economic growth. The findings of this research can be applied to inform future study in order to develop sound trade liberalization policies that would help Myanmar's economy grow.

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APPENDIX

Table (1)

Table - Jonhansen test of cointegration

Date: 06/13/21 Time: 14:31

Sample (adjusted): 15 56

Included observations: 34 after adjustments

Trend assumption: No deterministic trend

Series: LN_GDP LN_TOP LN_INF

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None	0.338271	17.85993	24.27596	0.2594
At most 1	0.102502	3.821369	12.32090	0.7365
At most 2	0.004239	0.144444	4.129906	0.7537

Trace test indicates no cointegration at the 0.05 level

* Denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.338271	14.03856	17.79730	0.1684
At most 1	0.102502	3.676925	11.22480	0.6802
At most 2	0.004239	0.144444	4.129906	0.7537

Max-eigenvalue test indicates no cointegration at the 0.05 level

* Denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

LN_GDP	LN_TOP	LN_INF
-0.789965	-0.211479	1.137637
-3.193413	1.854722	-0.266498
-2.378513	1.855615	-0.385677

Unrestricted Adjustment Coefficients (alpha):

D(LN_GDP)	0.100942	0.043273	-0.003646
D(LN_TOP)	-0.017783	0.005845	-0.010141
D(LN_INF)	-0.473136	0.146979	0.006434

1 Cointegrating Equation(s):		Log likelihood	-18.72762

Normalized cointegrating coefficients (standard error in parentheses)

LN_GDP	LN_TOP	LN_INF
1.000000	0.267707	-1.440111
	(0.26110)	(0.39167)

Adjustment coefficients (standard error in parentheses)

D(LN_GDP)	-0.079741
	(0.02932)
D(LN_TOP)	0.014048
	(0.02290)
D(LN_INF)	0.373761
	(0.11703)

2	CointegratingLog		
Equation(s):		likelihood	-16.88916

Normalized cointegrating coefficients (standard error in parentheses)

LN_GDP	LN_TOP	LN_INF
1.000000	0.000000	-0.959419
		(0.09870)
0.000000	1.000000	-1.795589
		(0.18646)

Adjustment coefficients (standard error in parentheses)

D(LN_GDP)	-0.217931	0.058913
	(0.11931)	(0.06771)

D(LN_TOP)	-0.004616	0.014601
	(0.09530)	(0.05408)
D(LN_INF)	-0.095605	0.372665
	(0.47930)	(0.27198)

Table (2)

Vector Error Correction Estimates

Date: 06/13/21 Time: 16:06

Sample (adjusted): 15 56

Included observations: 34 after adjustments

Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1
LN_GDP(-1)	1.000000
LN_TOP (-1)	1.918345
	(0.67675)
	[2.83464]
LN_INF(-1)	-1.524444
	(0.35964)
	[-4.23877]
C	-5.568823

Error Correction:	D(LN_GDP)	D(LN_TOP)	D(LN_INF)

CointEq1	-0.069759	-0.005605	0.433367
	(0.02866)	(0.02217)	(0.10007)
	[-2.43363]	[-0.25282]	[4.33053]
D(LN_GDP(-1))	-0.077865	0.148375	-0.881070
	(0.18943)	(0.14651)	(0.66131)
	[-0.41106]	[1.01271]	[-1.33230]
D(LN_TOP(-1))	0.091906	-0.007734	0.004918
	(0.07804)	(0.06036)	(0.27245)
	[1.17769]	[-0.12814]	[0.01805]
D(LN_INF(-1))	-0.027139	-0.030721	-0.175083
	(0.04372)	(0.03382)	(0.15265)
	[-0.62068]	[-0.90841]	[-1.14697]
C	-0.022275	-0.008227	-0.164144
	(0.03945)	(0.03052)	(0.13774)
	[-0.56458]	[-0.26960]	[-1.19170]
R-squared	0.239206	0.102929	0.458456
Adj. R-squared	0.134269	-0.020804	0.383760
Sum sq. resids	1.444117	0.863926	17.60110
S.E. equation	0.223153	0.172599	0.779060
F-statistic	2.279519	0.831862	6.137643
Log likelihood	5.456755	14.19078	-37.05113
Akaike AIC	-0.026868	-0.540634	2.473596

Schwarz SC	0.197597	-0.316169	2.698060
Mean dependent	-0.009333	-0.007436	-0.124984
S.D. dependent	0.239834	0.170832	0.992421

Determinant resid covariance (dof adj.)	0.000790
Determinant resid covariance	0.000490
Log likelihood	-15.18500
Akaike information criterion	1.952059
Schwarz criterion	2.760132
Number of coefficients	18

Table (3) Result of Wald Test (Short Run) for LFDI to LGDP

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
t-statistic	0.978622	31	0.3353
F-statistic	0.957701	(1, 31)	0.3353
Chi-square	0.957701	1	0.3278

Null Hypothesis: C (3) = 0

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C (3)	0.073333	0.074935

Restrictions are linear in coefficients.

Table (4) Wald Test Result (Short Run) for LnINF to LnGDP

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
t-statistic	-0.757610	31	0.4544
F-statistic	0.573974	(1, 31)	0.4544
Chi-square	0.573974	1	0.4487

Null Hypothesis: C (4) = 0

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C (4)	-0.032074	0.042336

Restrictions are linear in coefficients.

Table (5)

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.272586	Prob. F (2,29)	0.7633
Obs*R-squared	0.664277	Prob. Chi-Square (2)	**0.7174**

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 06/13/21 Time: 18:18

Sample: 9 57

Included observations: 36

Presample and interior missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C (1)	-0.001439	0.031437	-0.045782	0.9638
C (2)	-0.063034	0.162897	-0.386954	0.7016
C (3)	-0.009171	0.078586	-0.116704	0.9079
C (4)	0.003107	0.044383	0.069995	0.9447
C (5)	-0.003115	0.039489	-0.078872	0.9377
RESID (-1)	0.168839	0.272543	0.619496	0.5404
RESID (-2)	-0.110093	0.224748	-0.489849	0.6279

R-squared	0.018452	Mean dependent var	1.54E-17
Adjusted R-squared	-0.184627	S.D. dependent var	0.207814
S.E. of regression	0.226186	Akaike info criterion	0.037745
Sum squared resid	1.483640	Schwarz criterion	0.345652
Log likelihood	6.320584	Hannan-Quinn criter.	0.145213
F-statistic	0.090862	Durbin-Watson stat	1.875250
Prob(F-statistic)	0.996779		

Table (6)

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.014414	Prob. F (6,29)	0.4354
Obs*R-squared	6.244954	Prob. Chi-Square (6)	**0.3963**
Scaled explained SS	6.948835	Prob. Chi-Square (6)	0.3256

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 06/13/21 Time: 19:14

Sample: 9 57

Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.153265	0.094516	1.621583	0.1157
LN_GDP (-1)	0.013225	0.055090	0.240060	0.8120
LN_TOP (-1)	0.022253	0.039886	0.557899	0.5812
LN_INF (-1)	0.019285	0.017585	1.096663	0.2818
LN_GDP (-2)	-0.093504	0.049340	-1.895117	0.0681
LN_TOP (-2)	-0.003469	0.026522	-0.130798	0.8968
LN_INF (-2)	-0.023035	0.015072	-1.528338	0.1373

R-squared	0.173471	Mean dependent var	0.041987
Adjusted R-squared	0.002465	S.D. dependent var	0.073770
S.E. of regression	0.073679	Akaike info criterion	-2.205536

Sum squared resid	0.157429	Schwarz criterion	-1.897629
Log likelihood	46.69964	Hannan-Quinn criter.	-2.098068
F-statistic	1.014414	Durbin-Watson stat	1.882329
Prob(F-statistic)	0.435411		