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亞為例

International Trade and Economic Growth--Evidences
from
St. Vincent and the Grenadines and St. Lucia

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國際貿易與經濟增長--聖文森和格林納丁以及聖盧西亞為例

International Trade and Economic Growth--Evidences from
the St. Vincent and the Grenadines and St. Lucia

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Abstract



International trade is very important for the economic growth and development of countries. However, many countries cannot agree on whether or not international trade should be import-led growth or export-led growth. This is because many studies have conflicting results. This study observes two countries, St. Vincent and the Grenadines and St. Lucia, for the period from 1991 to 2021 with similar economic histories and policies to determine what effect international trade has. The study uses Augmented Dickey-Fuller (ADF) and Phillips Peron (PP) to test for stationary and implements an ARDL bounds test only for St. Vincent and the Grenadines since the series were both integrates order $I(0)$ and $I(1)$. The series for St. Lucia integrates order $I(0)$ which requires no further testing; this indicates that there is a long-run relationship between GDP growth rate and its explanatory variables. The cointegration results for St. Vincent and the Grenadines show that there is a long-run relationship between the GDP growth rate and its explanatory variables.

For St. Vincent and the Grenadines, the OLS results show that the growth rate of exports of goods and services is statistically significant at 5% significance level. While the growth rate of imports of goods and services is positively impacting GDP, it is not statistically significant. The OLS results for St. Lucia show that the growth rate for imports of goods and services shows that exports are not statistically significant while imports of goods and services are statistically significant at 5% significant level. Even though both countries share a similar economic structure, they both respond differently to international trade. St. Vincent and the Grenadines is export-led, while St. Lucia is import-led.

Keywords: International trade, Economic growth, Export-led growth hypothesis, Import substitution industrialization, St. Vincent and the Grenadines, St. Lucia

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Chapter 1 Introduction

1.1 The Problematic Situation and Motivation

Gross Domestic Product (GDP) is a measure of a country's economic growth. It is formulated using a popular equation by Kuznets (1937). The equation includes components such as consumption, government, investment, and net exports, which represent international trade. Through international trade, nations can leverage each other's comparative advantages and specialize in the production of certain goods and services, from raw materials to completed products. This has made international trade a vital component of the global economy, linking countries and companies around the world. Countries have strived to achieve high levels of economic growth, but success or failure depends on various factors and the uniqueness of each country.

Trade policy can be traced back as far as the 16th century, when governments used mercantilism to restrict imports and increase exports of gold and silver. With international trade being the most important strategic factor, mercantilism was designed to encourage the production and trade of private entrepreneurs who benefitted from and contributed to the strengthening, prosperity, and power of nation-states (Allen, 1991). The idea of free trade and the proposal for the removal of trade restrictions were introduced in the works of Smith (1776) and continued through Ricardo (1817), and Mill (1848). These classical economists supported free trade, contending that in order to maximize global welfare, nations should specialize in manufacturing items in which they have a comparative advantage and participate in voluntary exchange with other nations. However, there has been ongoing discussion regarding the suitability of various trade policies for fostering economic development and progress. The developmentalism school of economics favored tariffs and import substitution policies in the 1950s and 1960s. However,

neoclassical schools of thought began to surface in the 1970s and advocated export promotion measures as a means of boosting the economy.



Despite ongoing debates regarding trade policies, economists have not been able to come to a consensus on which approach is best for promoting economic growth and development. The appropriateness of import substitution versus export promotion policies for international trade remains a contentious issue among economists. Proponents of import substitution argued that developing countries can reduce their dependence on industrialized countries and that import substitution is a necessary step in a country's development for economic growth (Prebisch, 1950; Myrdal, 1968; Furtado, 1971). However, there have been mixed reports. Countries like Argentina and Brazil experienced low economic growth after implementing import substitution in the mid-20th century.

While these policies were somewhat successful in encouraging industrialization, they were not without problems and limits. Brazil's reliance on protected local sectors, in particular, resulted in inefficiencies, corruption, and a lack of competition, undermining the country's economic growth and development over time. Brazil also had a number of economic issues throughout the 1980s and 1990s, including hyperinflation and debt defaults, which hampered the country's economic growth and development. Argentina had a number of economic issues by the 1950s, including rising inflation, dwindling exports, and growing debt. Because of the country's reliance on protected domestic sectors, there was a lack of competition and innovation, and many of these industries eventually became inefficient and unproductive. Argentina underwent a succession of economic crises in the 1980s and 1990s, including hyperinflation and debt defaults, which hampered the country's economic growth and development.



Therefore, due to the limitations of import substitution on economic growth, export promotion was considered. There has been support for export promotion in academics (Krugman, 1979; Bhagwati, 1988; Baldwin, 1989; Krueger, 1997). Export promotion may encourage businesses to expand their product offerings and enter new markets. This can lessen the economy's reliance on a narrow range of exports and raise its resilience to external shocks. Export-oriented industries, which are more labor-intensive than other sectors of the economy, can produce new employment. This can aid in the reduction of unemployment and poverty, resulting in enhanced economic growth. Export-oriented businesses can boost their productivity. These businesses are more likely to be inventive, to invest in new technology and equipment, and to educate their employees to meet worldwide standards. This can boost the economy's total productivity, resulting in enhanced economic growth.

According to various researchers and countries, both export promotion and import substitution have supporters as to why they work. One of the difficulties in assessing the impact of import substitution and export promotion policies on economic growth is that it is frequently difficult to separate the effects of these policies from other factors that may influence economic growth, such as changes in global trade patterns, technological innovation, and political stability.

The supporters of export promotion believed that the inward-oriented policies of import substitution were a misguided strategy that led to stagnation and distortion of the economy, and restricted free trade (Stiglitz, 2003; Krueger, 1997). In Latin America, import substitution proved to be an ineffective strategy. Import substitution had contributed to the debt crisis in the region by leading to overindebtedness and an unsustainable balance of payments (Diaz-Alejandro, 1985). To move beyond the limitations of import

substitution, countries should concentrate on building a competitive export sector. One important driver of economic growth and development is the convergence in manufacturing productivity between rich and poor nations. By improving productivity in manufacturing, poorer countries can boost their economic performance and narrow the gap with wealthier nations. Rodrik (2013) discussed this limitation by agreeing that poorer countries tend to grow faster than richer countries, however, he acknowledged that this was true in the manufacturing industry and not necessarily true in other industries.

As part of the globalized world, Caribbean countries, like most developed countries, engage in international trade. Prior to the nineteenth century, there was not a major push toward industrialization in many Caribbean countries. Studies on how international trade impacts the Caribbean region have been limited, with the exception of a few studies such as Brown (2015) and Kemp-Benedict et al. (2018). Since the impact of international trade on economic growth has been a topic that has attracted much discussion, this paper aimed to draw much-needed attention to the Caribbean.

1.2 Research Objectives

International trade opens up new markets for products and services all over the world, benefiting consumers by lowering prices and increasing variety and availability. Both the exporting country's and the importing country's GDP will be significantly impacted by this. However, researchers continue to argue over the best trade policy for boosting economic growth. Some think that removing protectionism and increasing exports is the best approach to generating economic growth, while others argue that restricting imports can contribute to economic growth. Caribbean countries are open to international trade but implement forms of protectionism. There has been limited research on how international trade impacts economic growth in Caribbean countries; however, Brown

(2015) and Kemp-Benedict et al. (2018) have attempted to investigate the linkage between economic growth and international trade. Any research that supports import substitution or export promotion in the Caribbean is not known prior to this study. Therefore, this study aims to examine how international trade impacts economic growth in Caribbean countries with evidence from St. Vincent and the Grenadines and St. Lucia.

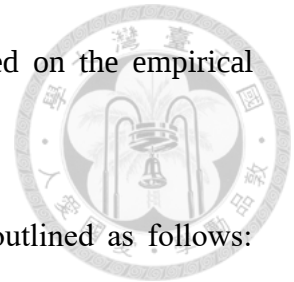
The economies of St. Vincent and the Grenadines and St. Lucia were historically based on the plantation model, which focused on mass-producing a few crops such as sugar and cotton for export to the United Kingdom, their metropole (Best & Levitt, 1969). This continued until their independence in 1979, during which time they were primarily exporters of agricultural products. However, following their independence, both countries became part of the Caribbean Community (CARICOM), with shared or similar trade policies. As a result, they were free to implement their own policies and pursue reforms in the area of international trade. Developing a competitive export sector has become a key goal for both countries in order to overcome their economic limitations and drive growth. By leveraging their unique strengths and resources, they aim to expand their access to international markets and promote sustained economic growth.

The primary purpose of this research is to investigate the influence of international trade on economic growth in developing Caribbean nations using data from St. Vincent and the Grenadines and St. Lucia from 1991 to 2021.

The specific objectives of this research paper are to:

1. To understand the relationship between exports and economic growth for both countries
2. To evaluate the relationship between imports and economic growth for both countries.

3. To provide policy recommendations for the countries based on the empirical results.



To achieve the above research objectives, this research paper is outlined as follows: Chapter 2 provides an overview of the history of St. Vincent and the Grenadines and St. Lucia, along with a look at the trade policies employed in recent history. Chapter 3 presents a review of literature covering the theoretical foundation of international trade and economic growth while presenting empirical results from previous studies. Chapter 4 describes the econometric methodology and sources of the data used to conduct the research. Chapter 5 presents the empirical results and analysis. Chapter 6 summarizes the main findings of the study, identifies limitations, and provides recommendations.

Chapter 2 Overview of St. Vincent and the Grenadines and St. Lucia

The economic history and trade policies of St. Vincent and the Grenadines and St. Lucia play an important role in understanding the current situation of both countries. Understanding economic history and trade policies can provide insight into their successes and challenges.

2.1 History of Economic Activities: St. Vincent and the Grenadines

During the colonial period, St. Vincent and the Grenadines had an agriculturally based system, with sugar and cotton as the principal crops. The country also had a small fishing industry and a few small-scale industries, along with rum production. However, the colonial period became marked by exploitation and underdevelopment, with the blessings of monetary growth more often than not accruing to Great Britain, which had colonial rule for most of the 18th century until independence in 1979. In the early twentieth century, the country's financial system became dominated by agriculture, specifically banana manufacturing. However, the banana industry faced massive challenges in the 1900s, with the loss of preferential admission to the European markets and growing opposition from other international locations. This brought about a decline in banana manufacturing and exports, which had a large impact on the country's economy.

After gaining independence from Britain in 1979, there has been a push to embark on an economic improvement strategy that emphasizes the agricultural sector. This approach was based totally on the comparative advantage in agriculture, especially in the production of bananas and different tropical crops. In the 1980s and early 1990s, the agricultural sector was the mainstay of the economy, accounting for a large part of exports and employment for the majority of the population. However, this reliance on agriculture proved to be unsustainable in modern economies. The foremost export crop, banana,

faced declining prices due to increased competition from other countries and changes in European Union trade policies. In addition, natural disasters, which include hurricanes and tropical storms, were detrimental to the economy.



In response, the government of St. Vincent and the Grenadines shifted its concentration to the tourism sector in the 2000s. They recognized the potential that the beaches, mountains, and coral reefs could offer to attract visitors. There were regulations implemented to promote tourism, which led to the creation of the Tourism Authority in 2009. The Tourism Authority was charged with overseeing the construction of a new tourism sector, which included the improvement of advertising campaigns to promote the country to the world. Tourism became a major contributor to the economy, which proved successful. As can be seen in Figure 2.1, it shows the increase in tourism visitors expenditure. According to the International Monetary Fund (2022), tourism contributed 26% of St. Vincent and the Grenadines' GDP in 2019 and supported 23% of total employment in the country.

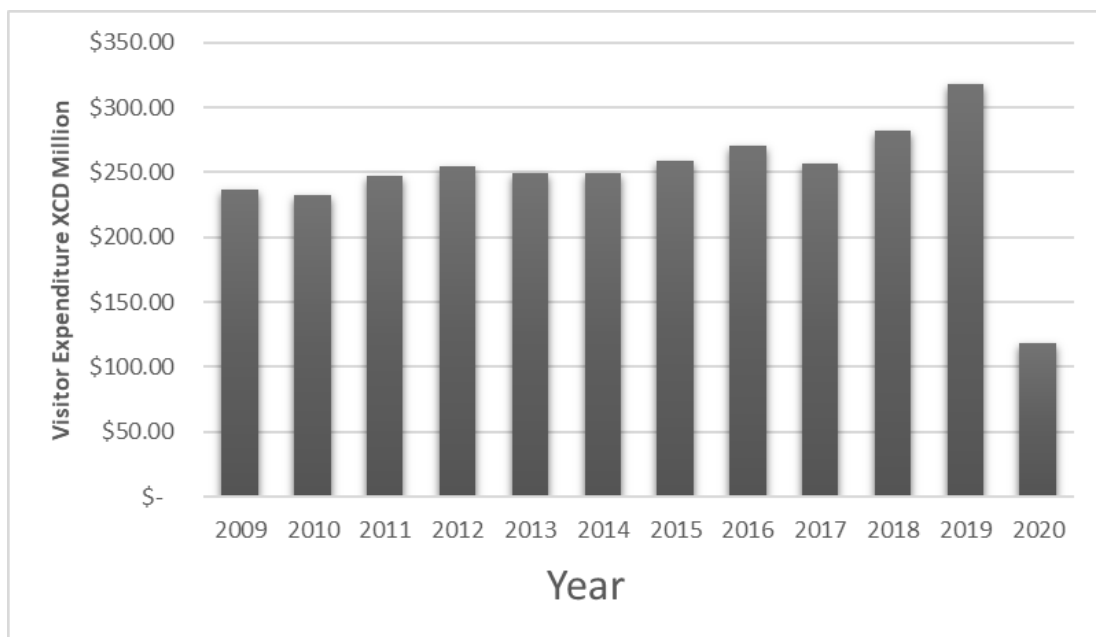


Figure 2.1: Tourism Visitor Expenditure Eastern Caribbean Dollars XCD Million, 2009 - 2020

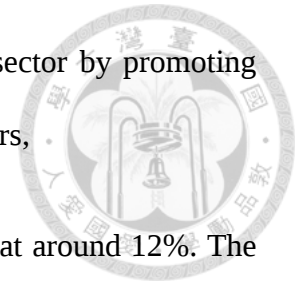
Source: Eastern Caribbean Central Bank

2.2 History of Economic Activities: St. Lucia

St. Lucia is a small Caribbean Island nation that has undergone economic transformation over the last century. Before the arrival of European colonists, the indigenous people of St. Lucia practiced subsistence agriculture and fishing. However, the arrival of Europeans within the 17th century resulted in the establishment of sugar plantations with the purpose of exploitation to be shipped out to Great Britain. Early in the twentieth century, declining prices and competition from other Caribbean nations contributed to the decline of the sugar industry. As a result, St. Lucia shifted its agricultural manufacturing to bananas and coconuts, which became its primary products for export. Since its independence from the United Kingdom in 1979, Saint Lucia has implemented economic policies aimed at promoting growth and reducing deficits. These policies include the provision of services where the economy has diversified, encouraging foreign investment, and supporting small and medium enterprises.

Over the years, the services sector has grown to be the largest contributor to the GDP, contributing over 70% over the last decade. The financial sector plays a crucial role with the establishment of an offshore banking system and the growing insurance industry. The government had made great efforts to attract foreign investment in the form of multinational service providers, retailers, and hotel companies. All of this cannot be sustained without careful regulation of the financial sector. The industry sector contributes over 14% to the GDP. Food and beverage manufacturing has been the major contributor to the industry sector. The government has implemented incentives to attract investment in the manufacturing and retail sectors, such as tax incentives and grants. The agricultural sector, which was the dominant sector in pre-independence and early post-independence, has contributed far less than expected, with around 2%. Though there are

still considerable efforts being made to revitalize the agricultural sector by promoting sustainable farming and providing education and assistance to farmers,



Tourism has also contributed a significant portion to the economy, at around 12%. The natural beauty and cultural heritage attract tourists to the shore every year. This cannot be done without careful promotion and marketing to ensure that visitors' numbers keep increasing.

2.3 The Trade Policies in St. Lucia and St. Vincent and the Grenadines

St. Vincent and the Grenadines and St. Lucia's trade policies are based on the same agreements and foundations as they are both members of the Caribbean Community (CARICOM). They have undergone significant changes since gaining independence from Britain in the mid- to late-1900s. In the early years, the governments focused on promoting agriculture as the primary sector for economic development. The country's governments implemented policies to support small farmers and increase production. These policies included subsidies, preferential treatment in international markets, and investment in rural infrastructure. In addition, St. Vincent and the Grenadines and St. Lucia have pursued trade liberalization policies to enhance their export competitiveness and attract foreign investment. They are members of several regional and international trade agreements, including the Caribbean Community, the Organization of Eastern Caribbean States (OECS), and the World Trade Organization (WTO). These agreements provide St. Vincent and the Grenadines and St. Lucia with preferential access to regional and international markets, as well as technical assistance and capacity building. There are policies in place to ensure the attraction of foreign investment. This is done through the investment promotion agencies in both countries, Invest SVG and Export St. Lucia. This is done in such a way that investment can be facilitated and support given to current

investors. These countries have implemented policies to improve their trade infrastructure, including investment in ports and airports and the implementation of a national single window for trade. The trade policies implemented over the years can be broken into various groups, such as multilateral agreements, customs unions, free trade agreements, and preferential trade agreements.

Both St. Vincent and the Grenadines and St. Lucia became members of the WTO in 1995 and signed the WTO multilateral agreement on trade in goods in 1996. This agreement covers various aspects of international trade, including tariffs and non-tariff barriers and trade liberalization assistance. The aim of the WTO agreement was to create fair and open globalization by promoting free trade and reducing trade barriers. Equal treatment among all members of the WTO was one of the promises the agreement proposed. The Most Favored Nation principle requires all members to be treated equally in terms of trade, and the National Treatment principle requires foreign products to be treated as if they were locally made products. All members are also required to comply with the standards, regulations, and intellectual property rights set by the WTO in order to participate in the global system.

The CSME (Caribbean Single Market and Economy) is an initiative by the Caribbean Community to promote economic integration and cooperation among its member states, including St. Vincent and the Grenadines and St. Lucia. The CSME was established in 2006 with the aim of creating a single market and economy for the Caribbean region. One of the key features of the CSME is the Common External Tariff (CET), which is a uniform tariff applied to goods imported from non-CARICOM countries. The CET is designed to promote intra-regional trade by eliminating the need for CARICOM member states to compete against each other with varying tariff rates. Instead, they collectively negotiate

and enforce a uniform tariff rate for goods imported from outside the region. The CET is currently set so that imports of most goods manufactured in the CARICOM can be exempted from import tariffs, with the exception of a few goods, such as aerated beverages, which attract varying tariffs depending on which CARICOM country they were made in. The CSME and its CET are important international trade policies for Caribbean countries as they promote economic integration and cooperation among CARICOM member states, and provide a framework for regional trade and economic development.

The European Union (EU) and the African, Caribbean, and Pacific Group of States (ACP) first established an agreement called the Lome Convention (signed in 1975), which was signed to facilitate the preferential trade of agricultural goods such as bananas. After this agreement was nullified, the Cotonou Agreement emerged, which lasted for twenty years. In 2002, EU and ACP countries launched negotiations for the new CARIFORUM-European Community agreement, which was officially established in 2008. The agreement aims to promote trade and development between the two regions by reducing barriers to trade and increasing cooperation. The CARICOM-EU EPA covers a wide range of areas, including trade in goods and services, investment, intellectual property rights, government procurement, and competition policy. The agreement provides for the gradual liberalization of trade in goods between the two regions, with the eventual elimination of tariffs on most goods traded between the two regions.

The provisions for sustainable development, improvement of labor standards, and human rights protection were also included in the agreement. The agreement also establishes a regional investment promotion agency and a regional competition strategy to promote CARICOM regional integration. The CARICOM-EU EPA strengthens Caribbean-

European economic relations. The deal is expected to boost CARICOM's economic growth and offer new prospects for European businesses and investors. However, some critics have raised concerns about the agreement's potential impact on small and vulnerable economies in the CARICOM region and called for a fair distribution of the agreement's benefits. There are other preferential trade agreements signed with several countries, including Columbia, Costa Rica, the Dominican Republic, and Venezuela. These agreements aim to reduce trade barriers and promote economic cooperation between countries.

Chapter 3 Literature Review



Economic growth is an important conversation topic, with international trade being one of its main drivers. There are a number of studies that have covered the relationship that this research aims to achieve. Therefore, existing research will examine the impact of international trade on economic growth, with a focus on the following areas: the theoretical foundation of economic growth, empirical evidence, and policy implications.

3.1 Theoretical Foundations of Economic Growth

Economic growth refers to an increase in the production of goods and services in an economy over a period of time and is typically measured by an increase in gross domestic product (GDP) or gross national product (GNP). It is an important indicator of a country's economic performance; therefore, it is considered a key goal of economic policy since it can tell how well a country is doing. It can be driven by a variety of factors, such as increased productivity, investment in physical and human capital, technological advancements, and favorable economic policies. Adam Smith is considered as the father of modern economics with his publication of *The Wealth of Nations*, where he argued that free markets, driven by self-interest and competition, contribute mostly to increased economic activity. He placed an emphasis on the importance of specialization and the division of labor, which were geared towards increasing productivity and reducing costs. This, he believed, could lead to greater wealth and a better standard of living.

Ricardo (1817) built upon Smith's economic growth theory by introducing the concept of comparative advantage in international trade. In his book *"Principles of Political Economy and Taxation,"* Ricardo argued that countries should specialize in producing goods in which they have a comparative advantage by producing goods at a lower

opportunity cost than other countries and trade with other countries to maximize global output and welfare. He explained why countries can benefit from trade even if one country is more efficient than another in producing all goods.



Smith's theory of economic growth was developed by Mill (1848), who added the idea of decreasing returns to labor and capital. According to Mill (1848), diminishing returns would eventually occur as an economy expanded and more labor and capital were added to the production process. At this point, the marginal output of the additional labor or capital would start to fall. He also stressed the role that innovation and technical advancement play in supporting economic prosperity. Later debates on the theory of economic growth were influenced by Mill's views on the importance of education, research and development, and investments in human capital. He maintained that trade restrictions like tariffs and quotas limit competition, lower efficiency, and raise consumer costs while also impeding economic growth. According to Mill (1848), free trade encourages innovation, specialization, and technical advancement, which raises economic growth and living standards (Baum, 1999).

Marshall (1890) introduced the concept of marginal analysis, which refers to the additional benefit or cost of producing one more unit of a good or service. His argument is that economic growth is driven by technological progress, which leads to higher productivity and efficiency in the production process, so more of one unit of input can push output further. When adding more input, there is a chance the quality of output will be diminished, as mentioned by Mill. Marshall emphasized the role of market forces, such as supply and demand, in determining prices and the efficient allocation of resources. According to Guillebaud (1942), Marshall believed that countries that have a competitive advantage should specialize since this was a benefit of free trade.

According to Müller et al. (2002), Karl Marx created his own theory of economic expansion by criticizing the work of traditional economists. Ultimately, he thought, capitalism would crumble because it was essentially unstable. He argued that capitalism produced surplus value by abusing working-class labor. The capitalist class subsequently grabbed this surplus value, which resulted in economic inequality and, ultimately, an overproduction catastrophe. Because the workers wouldn't have enough money to pay for the goods and services they were producing, Marx predicted that this crisis would cause the capitalist system to collapse and open the door for a socialist revolution (Müller et al., 2002).

The economic growth theory of Malthus (1798) focuses on the connection between population expansion and economic development rather than on economic growth in the sense of rising per capita income. Malthus (1798) predicted that as resources became scarcer and competition for them increased, population growth would eventually surpass resource growth and result in a decrease in living standards. He suggested that reducing population expansion or boosting resource production were the only ways to avert this situation. Malthus's idea had a big influence on economic growth theory, especially when it came to the creation of hypotheses about population expansion, resource limitations, and technological advancement.

Most modern economies follow the growth theory that was laid down by Harrod (1939). In his article, a mathematical model (rate of growth of GDP = savings ratio/capital output ratio) is used to analyze the determinants of economic growth. He argued that the rate of economic growth is determined by the amount of saving and investment in an economy. He also introduced the concept of the natural rate of growth, which is the rate at which an economy can grow without causing inflation or a balance of payments problem. Harrod's

model emphasized the importance of maintaining a high level of investment to achieve sustained economic growth.



3.2 International Trade and Economic Growth Theories

Before the works of Smith (1776), there was an economic theory of mercantilism that suggested that international trade was a zero-sum game, which meant that a country gained when it exported but lost when it imported (Wolla & Esenther, 2017). Smith (1776) showed that trade can in fact be a positive sum game for both exporting and importing countries since it permits the sale of domestically produced goods and increases the variety of commodities available to importing countries, which leads to positive economic growth.

3.2.1 Absolute Advantage Theory

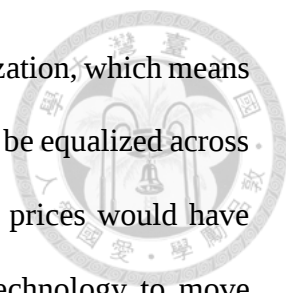
Smith (1776) argued that countries should specialize in the production of goods in which they have an absolute advantage, which refers to the ability to produce goods more efficiently than any other country. The core of absolute advantage in international trade is that a country that holds an absolute advantage in cost at the beginning of the trade transaction will seek to maintain that advantage just like any business would in their domestic markets (Shaikh, 1980a, 1980b, & 1980c). Countries that practice free trade are capable of producing and exporting products and services in which they have a distinct competitive edge while importing goods and services in which they do not. Though absolute advantage seems to be the origin of free trade, modern economic texts have discarded the absolute advantage theory in favor of the comparative advantage theory of Ricardo (Schumacher, 2012).

3.2.2 Comparative Advantage Theory

The theory of comparative advantage suggests that countries should specialize in producing and exporting goods in which they have a comparative advantage, meaning they can produce goods at a lower opportunity cost than any other country. The idea behind the comparative theory is that a country benefits from international trade by exporting goods in which it has the largest productivity comparative advantage and buying goods in which it has the smallest comparative advantage. Unlike absolute advantage, which focuses on the use of labor as the main input, comparative advantage incorporates other inputs like technology. Maneschi (1998) suggested that comparative advantage has served as the foundation for all advances in the theory of international trade.

3.2.3 Heckscher-Ohlin Model

David Ricardo fell short in helping countries understand what factors can determine their comparative advantage and how those factors can affect international trade to increase their national income. Then came the Heckscher-Ohlin (HO) model, which is an extension of the theory of comparative advantage that incorporates differences in factor endowments between countries to explain patterns of international trade. The HO model is a trade theory that explains how countries trade goods with one another based on differences in their resources, particularly labor and capital. It assumes that countries have different endowments of labor and capital and that these differences are the primary reason for trade. Countries with a comparative advantage in producing goods that require abundant factors of production will export those goods, while countries with a comparative advantage in producing goods that require scarce factors of production will import those goods (Jones, 2008).



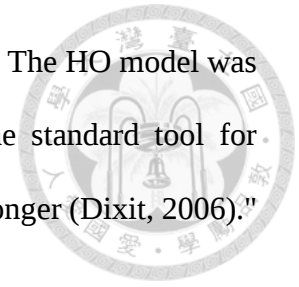
The HO model also predicts that trade will result in factor price equalization, which means that the prices of factors of production, such as wages and profits, will be equalized across countries as a result of trade. Free trade in conjunction with factor prices would have caused income distribution within countries that share the same technology to move towards income equality (Ohlin, 1933). This occurs because trade allows countries to specialize in the production of goods that uses their abundant factors of production more intensively, thereby increasing the demand for those factors and raising their prices. Overall, the HO model differs from the theory of comparative advantage by incorporating the role of factor endowments in determining a country's pattern of trade and predicting the effects of trade on factor prices (Morrow, 2010).

3.2.4 Neoclassical

The HO model was, however, questioned by some neoclassical economists. Samuelson (1948) critiqued the model's assumptions and argued that its predictions were difficult to test empirically. Samuelson argued that the model's predictions about the effects of trade on factor prices were ambiguous and depended on certain assumptions that were unrealistic. He also suggested that the model's assumptions, such as constant returns to scale, perfect competition, and factor price equalization, were not realistic and that the model did not take into account important factors such as economies of scale and imperfect competition. Furthermore, he argued that the model's predictions were not consistent with empirical evidence, particularly in terms of the relationship between factor prices and trade.

Samuelson (1953) introduced the concept of the factor price equalization theorem, in which he suggested that trade could lead to a convergence of factor prices across countries. However, he also acknowledged the importance of the HO model in providing a

theoretical framework for understanding international trade patterns. The HO model was then modified into the Heckscher-Ohlin-Samuelson model as "the standard tool for thinking about international trade for the following two decades or longer (Dixit, 2006)."



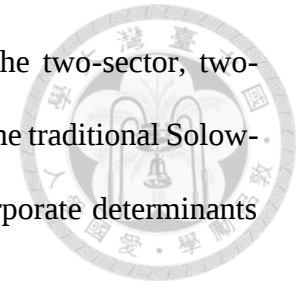
3.2.5 Exogenous Growth

Exogenous growth followed the neoclassical approach to economic growth, mainly pioneered by Solow (1956) and Swan (1956). These models were based on the exogenous forces that were assumed to only affect growth in an economy: capital, labor, and technology. This approach to economic growth suggested that internal influences had no effect on economic growth and hence neglected to incorporate endogenous components in the model to predict economic growth. Knight et al. (1993) tested the neoclassical approach to economic growth and found that those exogenous factors had a positive influence on economic growth. They used a series of panel data sets based on various countries. The Solow-Swan model was also tested in the fast-growing economy of China by Li et al. (1998) and it was found that the assumption of the neoclassical approach was proven as their study provided a "fairly good" analysis of the model.

This theory further implied that if people no longer have the ability to save, then growth will no longer be propelled. As a focus of economic growth, Harrod & Domar (1939) asserted that saving was the main driver of economic growth, with those savings being invested in the economy. However, for those savings to have a beneficial impact on economic growth, the investment must be productive.

Since the exogenous growth theory depends on savings, Cesaratto (1999) looked at the problems that can be derived. They discovered that the savings rate had no effect on the growth rate, resulting in a stationary state because the absence of exogenous circumstances would depress capital's marginal productivity. Farmer & Lahiri (2006)

mentioned a simplified economic model where they argued that the two-sector, two-country model (Ak model) provides a better description of data than the traditional Solow-Swan model. As a result, various economic models appear to incorporate determinants other than capital, labor, and technology.

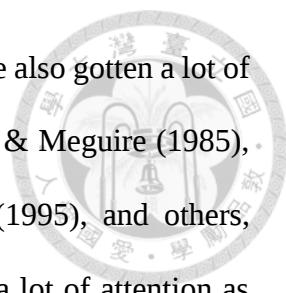


3.2.6 Endogenous Growth / New Growth Theory

To account for the cause of the growth rate, other factors were introduced into this theory of economic growth. The champions of the endogenous theory were Romer (1986), Lucas (1988), and Barro (1990). Their contributions have resulted in advanced economic growth models that include technology as an endogenous factor rather than an exogenous factor as in neoclassical theories. Grossman & Helpman (1994) found that national and regional growth rates were correlated with a variety of economic, social, and political variables, including many that are affected by government policies. Romer (1986) mentioned that the growth rate of the world's technological leaders was rising over time, not falling, which contradicts that of neoclassical models.

Grossman & Helpman (1991) studied the endogenous growth of trading countries, which resulted in international spillovers. They found that trade generates an externality that coexists with the externality of domestic innovation. The openness of a nation to trade plays a critical role in technological progress and hence growth because opening an economy tends to increase the standard of living and quality of life for people, allowing them to buy more products and services from elsewhere. Even though in this study of trade the economy grows slowly, it shows that other factors contribute to the development and growth of an economy.

Chirwa & Odhiambo (2018) mentioned that some of the key determinants of the endogenous growth model include knowledge, human capital, and research and



development. Economic policies and macroeconomic conditions have also gotten a lot of attention as economic performance drivers. According to Kormendi & Meguire (1985), Grier & Tullock (1989), Fischer (1993), Barro & Sala-i-Martin (1995), and others, economic policies and macroeconomic conditions have also gotten a lot of attention as economic performance drivers because they can provide the groundwork for economic growth. Economic policies may have a wide-ranging influence on an economy through investing in human resources and infrastructure, as well as upgrading political and legal institutions. Macroeconomic considerations are seen as necessary but not sufficient for economic growth (Fischer, 1993). Although both exogenous and endogenous factors can account for economic growth, Chirwa & Odhiambo (2018) concluded that there is no obvious agreement on which factors are mainly responsible for economic growth.

3.3 The Export Led Growth Hypothesis

Since its inception in the 1970s, the export-led growth hypothesis (ELGH) has been a hot topic of debate in the field of international trade theory. The theory contends that encouraging exports and participating in free trade can accelerate a nation's economic progress. The ELGH is founded on the idea that rising exports will boost income and employment, which will fuel economic growth. A sizable body of research has developed over time in an effort to comprehend the theoretical foundations of the ELGH and its implications for economic policy.

When Lewis (1954) introduced his dual economy idea, he proposed the distinction between two sectors within an economy: the capitalist sector and the subsistence sector. The dual economy would see the transformation from a hugely agriculturally based economy to a more industrialized economy (Kemp-Benedict et al., 2018). Even though Lewis (1954) argued that developing countries could benefit from exporting

manufactured goods to industrialized countries to achieve sustained economic growth, Demas (1965) suggested that due to their sizes, small economies are faced with limited capacity, which poses a challenge and could only realize partial transformation. Best (1968) argued that agrarian developing countries were not fully capable or destined for export but to serve the purpose of fulfillment to the metropolitan economies. Regardless of the purpose or intent for small developing countries to be used to supplement the metropole, these countries in fact had a thriving export economy, exporting minerals and other agrarian-based crops (Girvan & Girvan, 1970).

The surplus of labor mentioned by Lewis (1954) was transferred from the primary sector to the secondary sector. As the secondary sector was being created in those developing countries, the manufactured goods that could not be consumed in the domestic market needed to be exported, which was termed a vent for surplus theory by Myint (1958) (Findlay & Lundahl, 1994). This created the propulsion of export orientation since labor then became more specialized and thus supported an increase in national income and the price level (Lal, 1992). The surplus that was created can be exported as much as is demanded by foreign importers.

One of the main arguments for export expansion is that it increases efficiency, which in turn increases productivity and further creates revenue, which leads to economic growth (Aktar et al., 2008). Esfahani (1991) pointed out that the external repercussions of the export orientation, which include the movement of more qualified managers and workers to rival industries, increase productivity. Helpman & Krugman (1985) argued that export-led growth can lead to productivity gains in the exporting sector. The reason is that export-oriented firms are subject to greater competitive pressures, which incentivizes them to invest in productivity-enhancing technologies and processes. This, in turn, can spill over

to the rest of the economy, raising overall productivity levels. Additionally, exporting can provide access to larger markets, which can create economies of scale and further boost productivity. They also argue that when firms are able to achieve economies of scale through increased production and exportation, this can lead to lower production costs and increased productivity, which in turn can drive economic growth.

To stay competitive in international markets, exporting companies may make investments in R&D, embrace new technology, and increase their operational effectiveness. According to Fukuyama (1992), technological advancement and innovation are crucial for export-led growth. Porter (1985) stressed the value of industrial modernization and technological innovation in fostering export-led growth. They claimed that by modernizing their industries and raising company productivity through the use of new technologies, improved management techniques, and investments in education and training, countries may experience prolonged export success.

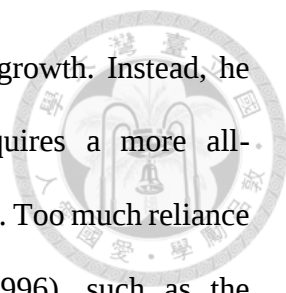
3.3.1 Critique of Export Led

There are objections to the export-led growth theory, regardless of all the evidence in favor of it. Export-led growth may result in a dependence on a small number of export products or markets, making emerging nations more susceptible to outside economic shocks. Prebisch (1950) argued that over time, the terms of trade between exporters of primary commodities and industrialized nations tended to deteriorate, which resulted in a general fall in the price of primary commodities relative to the price of manufactured goods. Due to this, developing nations found it challenging to obtain the foreign currency required to buy capital goods and technology, which created a vicious cycle of dependency on the export of basic commodities. The potential dangers of an overreliance on exports and the significance of industrial strategies to support diversification and

technological advancement have also been highlighted by Stiglitz (2002) and Chang (2002). Chang made the case in his book "Kicking Away the Ladder" that industrialized nations supported free trade and deregulation after gaining economic dominance while using protectionism and subsidies to safeguard their indigenous sectors throughout their own times of modernization. Furthermore, he contended that this tactic kept developing nations from implementing the same policies to advance their own industrialization, maintaining the current state of inequality (Chang, 2002). The prices of primary commodities they export tend to decline in relation to the prices of manufactured goods they import, developing countries pursuing export-led growth frequently experience unfavorable terms of trade. In emerging nations, this tendency may make poverty and inequality worse (Stiglitz & Stiglitz, 2002).

Export-led growth can have a number of detrimental effects on developing nations, including a worsening of income inequality, increased vulnerability to shocks from the outside, and less government capacity to invest in public goods (Blecker, 2001). A "race to the bottom" in terms of salaries and labor standards might result from export-oriented growth policies, he added, as nations try to entice investment by providing the lowest feasible manufacturing costs. In the end, Blecker stated that governments should place more emphasis on increasing local demand and investing in infrastructure, education, and human capital development rather than fostering economic development through export-led growth, which is dangerous and unsustainable.

The export-led growth paradigm was touted as a cure-all for economic development by Wade (1990). He maintained that a combination of government action, targeted protectionism, and deliberate foreign investment led to the development of East Asian economies. Although exports were essential to the growth of these economies, he argued



that it was misguided to focus solely on exports as the engine of growth. Instead, he argued that sustained and inclusive economic development requires a more all-encompassing strategy that includes focused government intervention. Too much reliance on exports has both advantages and disadvantages (Winters, 1996), such as the susceptibility to outside shocks and the possibility of a negative effect on the national economy. In order to create sustained economic growth, Winters underlined the significance of maintaining a balance between exports and local consumption. Even though export-led growth may have some advantages, it is insufficient as a strategy for long-term economic expansion. It was argued that in order for nations to achieve long-term prosperity and development, they must also concentrate on supporting domestic industries and advancing their own technological skills. Winters (1996) also emphasized the possible drawbacks of export-led growth, such as economic inequality and environmental deterioration.

3.3.2 Empirical of Export Led

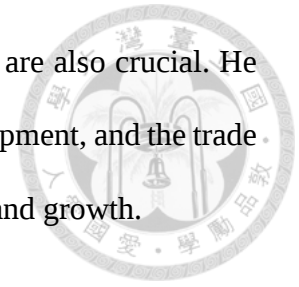
A number of studies have examined the relationship between international trade and economic growth. The export-led theory of growth, which suggests that economic growth is achieved through the promotion of exports, was the main focus of many of these studies. According to Irwin (2021), Taiwan was one of the first developing countries to adopt an export-oriented strategy. The policy changes were not driven by an economic crisis or political leadership, and they did not have a large export sector. However, Taiwan came out on top by simply eliminating the overvalued exchange rate. Many other countries followed export promotion strategies. Despite the number of attempts at export promotion, the results are inconsistent with findings on the effect of exports on economic growth. While some studies, such as Balassa (1978) and Edwards (1989), found a positive relationship between exports and economic growth, others, such as Bhagwati &

Srinivasan (1975) and Chowdhury & Mavrotas (2006), found a negative relationship. Research carried out recently by Balistreri et al. (2015) and Hsiao & Hsiao (2019) indicated that export-led growth would be an effective way to improve economic growth in developing countries.

One of the first to empirically investigate the relationship between exports and economic growth was Michael (1977). He used a cross-country analysis of a sample of 41 countries in his empirical research to investigate the relationship between exports and economic growth. His study's findings, which indicated a large and positive association between exports and economic growth, presented the possibility that export promotion initiatives would be successful in promoting economic growth. Additionally, he found that in developing countries, there were more significant results than in developed countries. Although he discovered a positive correlation between exports and economic growth, he cautioned that this did not prove causation because other factors might also be at work. He stated that the relationship between exports and growth might not be constant across every country and might be influenced by things like economic structure, policy environment, and economic development.

Using data from 1960 to 1972 for a group of 11 countries, Balassa (1978) conducted an empirical analysis of the relationship between exports and economic growth. In order to account for potential export endogeneity, he used a two-stage least squares (2SLS) method, and he found evidence that the export-led growth theory is correct. He discovered, in particular, that a rise in the exports-to-GDP ratio was connected to a statistically significant rise in the rate of economic growth. He came to the conclusion that exports and economic growth did indeed correlate positively, though not in a straightforward causal manner. Balassa argued that while exports are a vital part of economic growth,

other elements like domestic investment and governmental policies are also crucial. He also points out that the degree of industrialization, the stage of development, and the trade policies of a country can all affect the relationship between exports and growth.



According to Krueger (1978), export orientation and economic growth are positively correlated. She discovered, in particular, that nations with more outward-looking trade policies tended to see faster growth rates in exports, GDP, and productivity than those with more inward-looking policies. She also discovered that nations with liberalized trade policies typically had faster growth in exports and GDP than nations without liberalized trade policies. It was less evident how liberalization and productivity development related to one another. The export-led growth theory received empirical support from Krueger's study, which also made the case for the potential economic benefits of trade policies that are focused outward. The precise relationship between trade policy and economic development, however, may vary depending on the nation and setting where liberalization is sought. She said that while short-term costs of liberalization, such as those associated with industry adjustments, would exist, long-term gains in enhanced production and efficiency might offset these drawbacks.

Jung & Marshall (1985) employed Granger causality tests to look into the causal linkages between exports and economic growth in a study of 37 emerging nations. In some nations, they discovered evidence of the Granger causality of exports and economic growth in both directions, indicating a two-way relationship between exports and growth. In contrast, they discovered proof of a single-direction causal relationship connecting exports and economic growth in four nations, indicating that exports sparked economic expansion. The remaining nations did not exhibit a discernible link between exports and economic expansion. Overall, the study's findings indicate that there is no conclusive

evidence to support the idea that exports are usually a major element in fostering economic growth and that the relationship between exports and economic growth differs across countries.



Using ordinary least squares regression (OLS), Kavoussi (1984) examined the relationship between rising exports and economic growth for a sample of 73 developing nations between 1960 and 1978. The study's conclusion that export expansion has a positive and statistically significant impact on economic growth supports the export-led growth theory. A causal relationship between export growth and economic expansion was also found in the study, indicating a feedback relationship between the two variables.

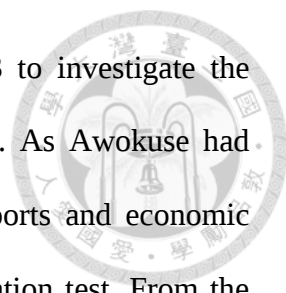
Feder (1983) discovered a positive and significant correlation between exports and economic growth. According to the data, a 1% increase in exports as a share of GDP corresponds to a 0.29 percent increase in GDP growth. A two-way causal association between exports and economic growth was also found in the study, suggesting that exports can both promote and stimulate economic growth. Feder also examined the effects of different export subcategories and found that exports of manufactured goods have a greater effect on economic growth than exports of raw materials.

Ram (1987) used cross-sectional and time-series data from two periods (1960 to 1972 and 1973 to 1982) to examine the relationship between exports and economic growth in a sample of 88 emerging countries. The study found a statistically significant relationship between exports and economic growth, both in the short and long term. This led him to find that exports have a greater long-term positive impact on economic growth than negative effects. Additionally, nations with higher levels of human capital show that they have a stronger relationship between exports and economic growth.

Alam (2003) evaluated the connection between manufactured products, imports of capital goods, and economic growth in Mexico and Brazil using data from a time series ranging from 1965 to 1998. The study found that economic growth in both countries was positively and statistically significantly impacted by manufactured exports. This was proven using a vector error correction model (VECM). It was found that capital goods imports helped Mexico's economy grow, but not Brazil's. The paper suggests that developing countries should prioritize manufacturing exports and capital goods imports to boost economic growth.

Using the Johansen cointegration test and the Granger causality test, Awokuse (2003) examined the long-run relationship between exports and economic growth in Canada using time series data from 1961 to 1999. The study found evidence of a long-term relationship between exports and economic growth in Canada, suggesting that high economic growth is caused by higher exports. The Granger causality test showed that there was a causal relationship in Canada for the time period. This demonstrates that a unidirectional causal relationship has proven that export-led growth is true for Canada.

Brown (2015) conducted an empirical analysis based on the Caribbean region using the autoregressive distributed lag (ARDL) limits test method to assess the viability of the export-led development hypothesis for Jamaica and several other Latin American and Caribbean countries. According to the study, some countries, like Jamaica, support the export-led growth hypothesis but not others. The findings demonstrate that the relationship between exports and economic growth is complicated and depends on elements that are unique to each country, such as the degree of economic development, the makeup of the economy, and the degree of trade openness.



Nath & Mamun (2005) used time-series data from 1976 to 2003 to investigate the relationship between exports and economic growth in Bangladesh. As Awokuse had previously mentioned, they examined the connection between exports and economic growth using the Granger causality test and the Johansen cointegration test. From the results, it was shown that there is a relationship between exports and economic growth; more exports cause economic growth to increase over time. The Granger causality test results show that exports and economic growth are causally related in both directions, pointing to the possibility of a feedback loop between the two variables. Therefore, it is proposed that export-led growth is a workable plan for Bangladesh to attain long-term economic growth.

3.4 Import Substitution Hypothesis

Similar to the export-led growth theory, the protectionism policy is supported by a number of studies under the import-led growth hypothesis. Imports are regarded as an economic leakage because they can move income from one nation to another, making it difficult to assess economic progress. Prebisch (1950) stated that, in contrast to industrialized nations, the terms of trade of countries that produce primary goods tend to decrease over time. He thus advocated for the adoption of import substitution industrialization (ISI) as a development strategy to support indigenous companies and lessen dependency on imports from abroad. In the 1950s and 1960s, his theories had a significant impact on the economic strategies of numerous developing nations.

Nurkse (1961) endorsed the import-led theory as a strategy for fostering economic growth in emerging nations. He suggested that a shortage of capital was the main obstacle to economic progress in emerging nations. He contended that poor nations could not accumulate the necessary savings to invest in productive capacity, which prevented them

from generating economic progress. This created a vicious circle of poverty, he claimed. He also maintained that, in order to escape this vicious cycle, developing nations needed to industrialize. He understood, however, that in order for underdeveloped countries to be able to industrialize, industrialization required significant sums of money that were not readily available domestically. Nurkse contended that export-led growth, in which developing nations would sell basic commodities and utilize the proceeds to acquire capital goods, was the only means of financing these capital imports.

Grossman & Helpman (1991) offer theoretical backing for import-led growth by developing a model. The model demonstrated that importing intermediate items to be used in the manufacture of exports can boost a nation's economic growth since it boosts production efficiency and advances technology. According to the model, open-to-trade nations may see faster growth rates than closed nations. These nations import intermediary goods. These imports of foreign technology and capital can raise the productivity of the home industry, especially in light of the development of technology.

Chapter 4 Methodology and Data



The study seeks to understand how international trade affects economic growth in these two countries. This chapter describes the empirical model, variables, data sources, and econometric methods utilized to analyze the data.

4.1 The Model Specification

Based on the previously mentioned theoretical and empirical arguments, the empirical model is based on a linear multiple regression model, which was used to investigate the relationship between economic growth and international trade. The model specification includes both the dependent variable and the independent variables used in the analysis.

The model is based on the classical Cobb Douglas production function:

$$Y_t = A_t K_t^\alpha L_t^\beta \quad (1)$$

where Y_t denotes the aggregate production at time t , A_t , K_t , L_t , are the level of total factor productivity, capital, and labor force respectively. For this study, the aggregate production (Y) equals the growth rate of GDP (GDP), the labor force growth rate (LF) is used as a proxy for the labor force ($L = LF$), and the foreign direct investment growth rate (FDI) is used as a proxy for capital ($K = FDI$). Therefore, the Cobb Douglas function can

$$\text{be written to suit this study as: } GDP_t = A_t FDI^\alpha LF^\beta \quad (2)$$

To interpret the impact of international trade, it is assumed that total factor productivity (A_t) can be transformed into a function of the growth rate of exports of goods & services (EX), the growth rate of imports of goods & services (IM):

$$A_t = f(EX_t, IM_t, C_t) = EX_t^\delta IM_t^\gamma C_t \quad (3)$$

where C_t is other exogenous variables. This type of model was used by Sandri et al. (2016) to look at the effects of trade in goods and services on economic growth in Jordan.

The empirical model takes the form of a production function specified as by combining equation (2) and equation (3), to obtain:

$$GDP_t = C_t EX_t^\delta IM_t^\gamma FDI_t^\alpha LF_t^\beta \quad (4)$$

where δ, γ, α , and β are elasticities of production with respect to EX_t , IM_t , K_t , and L_t .

Taking the natural logs (ln) of both sides of equation (4) provides the linear function:

$$\ln GDP_t = \ln C_t + \delta \ln EX_t + \gamma \ln IM_t + \alpha \ln FDI_t + \beta \ln LF_t \quad (5)$$

Taking this model and expressing it econometrically for the estimations of this study, equation (5) is written as:

$$GDP_t = f(EX_t, IM_t, LF_t, FDI_t) = \beta_0 + \beta_1 EX_t + \beta_2 IM_t + \beta_3 LF_t + \beta_4 FDI_t + \varepsilon_t \quad (6)$$

Where GDP denotes the growth rate of GDP, EX represents the annual growth rate of Export of Good and Service BoP, IM is the annual growth rate of Import of Good and Service BoP, LF denotes the labor force growth rate, and FDI is the growth rate of foreign direct investment, β_0 = intercept term, β_1 - β_4 = coefficients of the independent variables, ε = error term, and t is the time period (t=1991...,2021).

The regression analysis will estimate the values of β_0 - β_4 , which represent the effect of each independent variable on the dependent variables, while controlling for the other variables in the model. The error term, ε , captures the unexplained variation in the dependent variable that is not accounted for by the independent variables in the model.

4.2 The Research Approaches

4.2.1 Stationary test

A stationary time series has statistical characteristics that don't change over time. Many time series models depend on the assumption of stationarity because it enables us to make predictions about how the data will behave over time. A statistical test used to determine

if a time series is stationary or not is the stationary test, commonly referred to as the unit root test. The variables must be put to the test in the first step in order to confirm the integration order. The number of differencing operations necessary to make a time series stationary is referred to as the order of integration. If a time series requires (d) differences to become stationary, it is said to be integrated of order (d). The order of integration is denoted as I(d). If the series, by itself, is stationary without having to be first differenced, then it is said to be I(0). The most commonly used stationary test is the Augmented Dickey-Fuller (ADF) test (Dickey & Fuller, 1979). The Phillips-Perron (PP) test (Phillips and Perron, 1988) is an extension of the DF test and can be used when there is concern about the presence of serial correlation in the error terms of the model. These tests compare the autocorrelation of a time series to the autocorrelation of a randomly generated series with the same sample size. The tests calculate a test statistic and compare it to critical values to determine whether the time series is stationary or not. If a series' mean and autocovariances are not dependent on time, it is considered to be stationary (weakly or covariance).

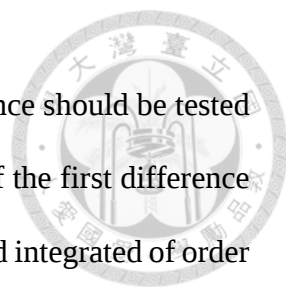
The ADF and PP tests are used to look for unit roots in the following models (constant and trend; constant and no trend; and no constant or trend) by Dickey, Bell and Miller (1986):

$$\Delta X_t = \alpha_0 + \alpha_1 X_{t-1} + \sum_{t-1}^k \lambda_t \Delta X_{t-1} + \beta t + \varepsilon_t \quad (7)$$

$$\Delta X_t = \alpha_0 + \alpha_1 X_{t-1} + \sum_{t-1}^k \lambda_t \Delta X_{t-1} + \varepsilon_t \quad (8)$$

$$\Delta X_t = \alpha_1 X_{t-1} + \sum_{t-1}^k \lambda_t \Delta X_{t-1} + \varepsilon_t \quad (9)$$

Where ΔX_t is the first difference of the dependent variable at time t, α_0 is the constant term, t is a linear time trend and ε_t is the error term.



If the level of the variable is rejected for stationarity, the first difference should be tested for stationarity using one of the unit root tests, such as ADF or PP. If the first difference is found to be stationary, it suggests that the variable can be considered integrated of order one, denoted as $I(1)$, and the analysis can proceed using the first difference of the variable instead of the original level. The null hypothesis of the ADF test is that the variable y has a unit root, meaning that it is non-stationary and exhibits random walk behavior. The alternative hypothesis is that the variable y is stationary and does not have a unit root. If the t-statistic associated with the estimated coefficient is greater than the critical value, then the null hypothesis cannot be rejected and the variable x is considered to be non-stationary. Only when at least two types of the unit root test concur (significant ADF and PP statistics) can conclusions regarding the level of stationarity for each variable be formed.

4.2.2 Cointegration Test

Cointegration is the long-term relationship that permits two or more time series to move together over time, even though they may not be connected or moving in the same direction in the near term. Therefore, the second step is to test for cointegration. Cointegration can be tested using the Johansen test (Johansen & Juselius, 1990), which is a statistical method that estimates the number of cointegrating relationships among a set of non-stationary variables, and the Bounds test (Pesaran et al., 2001), which is used to test for cointegration between stationary and non-stationary variables in time series.

If the Johansen test fails to reject the hypothesis of cointegration, an error-correction model (ECM) or vector error correction model (VECM) has to be used in order to present the short-term dynamics between the variables and the long-run equilibrium relationship.

A cointegration test is necessary when running a regression analysis involving non-stationary variables. If two or more non-stationary variables are used in a regression without checking for cointegration, there may be a spurious regression problem where the regression results are not meaningful and the estimates are biased. A cointegration test helps to determine whether there is a long-run relationship between the variables that can be used for meaningful regression analysis.

The two variables are said to be cointegrated, for example, if $x \sim I(d)$ and $y \sim I(d)$, and the linear combination is $d-1$ (i.e., there is low order integration). The long-run relationship ensures that the variables don't have an innate tendency to drift away, even though the variables themselves may wander arbitrarily from one another.

The Bounds Test is a method of testing for cointegration between two or more variables and was introduced as an alternative to the Johansen test. The ECM theory, on which the bounds test is based, states that the divergence from the long-run equilibrium is proportional to the error in the preceding period. The ECM coefficients are estimated and tested for statistical significance using the bounds test. The time series are considered to be cointegrated and have a long-term connection if the ECM coefficients are statistically significant. The Bounds Test is sometimes preferred over the Johansen test when the sample size is small or the variables are highly persistent. It is also more appropriate when one or more of the variables being tested are $I(0)$ or $I(1)$ but not $I(2)$.

4.2.3 Ordinary Least Squares

A statistical technique for estimating the parameters of a multiple linear regression model is called ordinary least squares (OLS). When using OLS, the sum of the squared discrepancies between the predicted and actual values of the dependent variable is

minimized. This is accomplished by calculating the values of the linear regression equation's coefficients that minimize the sum of the squared differences. The strength and direction of the link between the explanatory factors and the dependent variable can be ascertained using the resulting estimations of the coefficients. Based on the values of the explanatory variables, OLS can also be used to predict the value of the dependent variable. OLS makes the underlying assumption that the regression model's errors are normally distributed and have a fixed variance. Estimates of the coefficients that are skewed or inconsistent can result from breaking these assumptions.

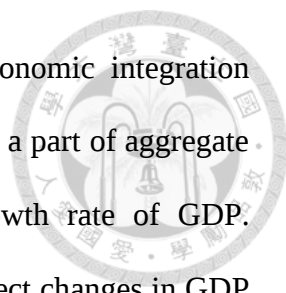
4.3 Data Sources and Measurement of Variables

The empirical analysis is based on annual data from 1991 to 2021 for both St. Vincent and the Grenadines and St. Lucia. The source of all data came from the World Bank Development Indicators Online Database, as shown in the Appendix. The econometric analysis was carried out using Stata 17.0. This study used the growth rate of the variables. The GDP growth rate is calculated as the annual percentage change in real GDP over a given time period. The formula for calculating the GDP growth rate is:

$$\text{GDP Growth Rate} = ((\text{GDP}_t - \text{GDP}_{t-1}) / \text{GDP}_{t-1}) \times 100$$

where GDP_t is the value of GDP in year t , and GDP_{t-1} is the value of GDP in the previous year. All of the growth rates, with the exception of the GDP growth rate, had to be calculated using the formula: $\text{Growth Rate} = ((X_t - X_{t-1}) / X_{t-1}) \times 100$, where X_t is the value of X in year t , and X_{t-1} is the value of X in the previous year.

Since exports are a significant part of a nation's economy, the export growth rate is often used as a variable for determining the GDP growth rate. Exporting products and services increases revenue and job opportunities, which might result in faster economic expansion.



Indicators of a nation's economic performance and degree of economic integration include the growth rate of exports. Additionally, because exports are a part of aggregate demand, the growth rate of exports can directly affect the growth rate of GDP. Researchers can evaluate the degree to which changes in exports affect changes in GDP over time by utilizing export growth rate as a variable in a model to calculate GDP growth rate. Due to the fact that imports reflect the level of domestic demand for foreign goods and services, analyzing the import growth rate can be used to determine the GDP growth rate. When imports increase, it suggests an increase in demand for foreign goods and services, which could indicate a growing economy. Additionally, imports can also represent an increase in investment in the domestic economy, as businesses may import raw materials or capital goods for production. An expansion in the labor force, brought on by population growth or a higher participation rate, can boost output and production, which in turn can raise GDP. A larger labor force may also result in more capital and technological breakthroughs being invested, which could further raise productivity and GDP growth. As a result, including the labor force growth rate as a variable in the model can shed light on how the labor force and GDP growth are related. Foreign direct investment (FDI) indicates the flow of investment from one country to another. Receiving FDI may boost a nation's capital formation, productivity, and technical development, all of which may eventually boost GDP growth rates. Additionally, FDI has the potential to generate new company possibilities, jobs, and economic expansion. Therefore, one may examine whether FDI inflows significantly affect GDP growth rate by integrating FDI growth rate as a variable in an econometric model.

4.4 Trend Analysis for St. Vincent and the Grenadines



Descriptive Statistics

Table 4.1 presents the descriptive statistics of St. Vincent and the Grenadines for five variables: gross product growth rate (GDP), exports of goods and services Bop growth rate (EX), imports of goods and services Bop growth rate (IM), labor force growth rate (LF), and foreign direct investment growth rate (FDI) for the period from 1991 to 2021. The sample's mean GDP value is 2.227, and the standard deviation is 2.982, indicating a relatively high level of variability in the data. The distribution of GDP may not be perfectly symmetrical, as evidenced by the median GDP value, which is slightly higher at 2.463. The sample's wide range of GDP values is evident from the fact that the lowest GDP value is -5.313 and the highest is 7.767. GDP shows a positive kurtosis, indicating a leptokurtic distribution.

Table 4.1 Descriptive Statistics of St. Vincent and the Grenadines, 1991-2021

Variables	GDP	EX	IM	LF	FDI
Mean	2.227	0.01	0.037	0.005	0.254
Median	2.463	0.014	0.045	0.006	0.098
Std. Dev	2.982	0.142	0.088	0.01	0.626
Max	7.767	0.32	0.234	0.017	1.721
Min	-5.313	-0.423	-0.165	0.041	-0.758
Skewness	-0.456	-0.914	-0.012	-3.167	0.724
Kurtosis	3.467	5.37	3.4	15.915	2.735
Obs	31	31	31	31	31

The distribution of the remaining variables (EX, IM, LF, and FDI) shows negative skewness because the mean for EX, IM, and LF is lower than the median. The data's distribution appears to be positively or right-skewed for the FDI, however, as the mean is greater than the median. This indicates that the dataset contains some high values that are pulling the mean up while having less of an impact on the median. The positive kurtosis, which indicates that the distribution has a sharper peak and longer, fatter tails than a normal distribution, indicates that all of the independent variables likewise exhibit a leptokurtic distribution.

Over time, the factors in St. Vincent and the Grenadines have responded in various ways. Figure 4.1 shows how GDP has changed over the past 31 years. The majority of the time between 1991 and 2009 saw positive growth rates. The growth rate fell below 1% in 2009 and did not increase again until 2011 to 2012. The financial crisis of 2008 was to blame for this. The nation began to enjoy positive growth from 2012 onward. Due to COVID-19, there was only a significant decline in 2020.

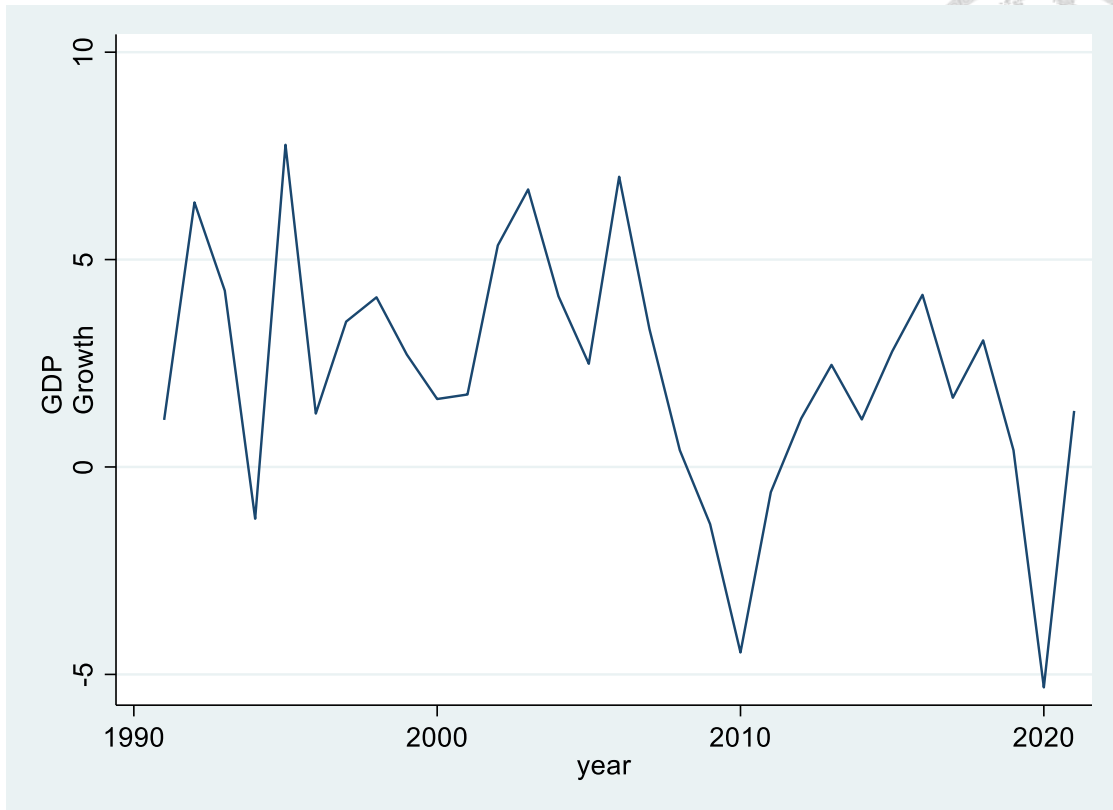


Figure 4.1 GDP Trend for St. Vincent and the Grenadines, 1991 – 2021
Source: The World Bank

Figure 4.2 displays the growth rate for exports of goods and services and shows that it has typically been around 0.1%. 2014 saw a peak of up to 0.3%. And as a result of COVID-19, when activities were restricted, it fell to its lowest point in 2020.

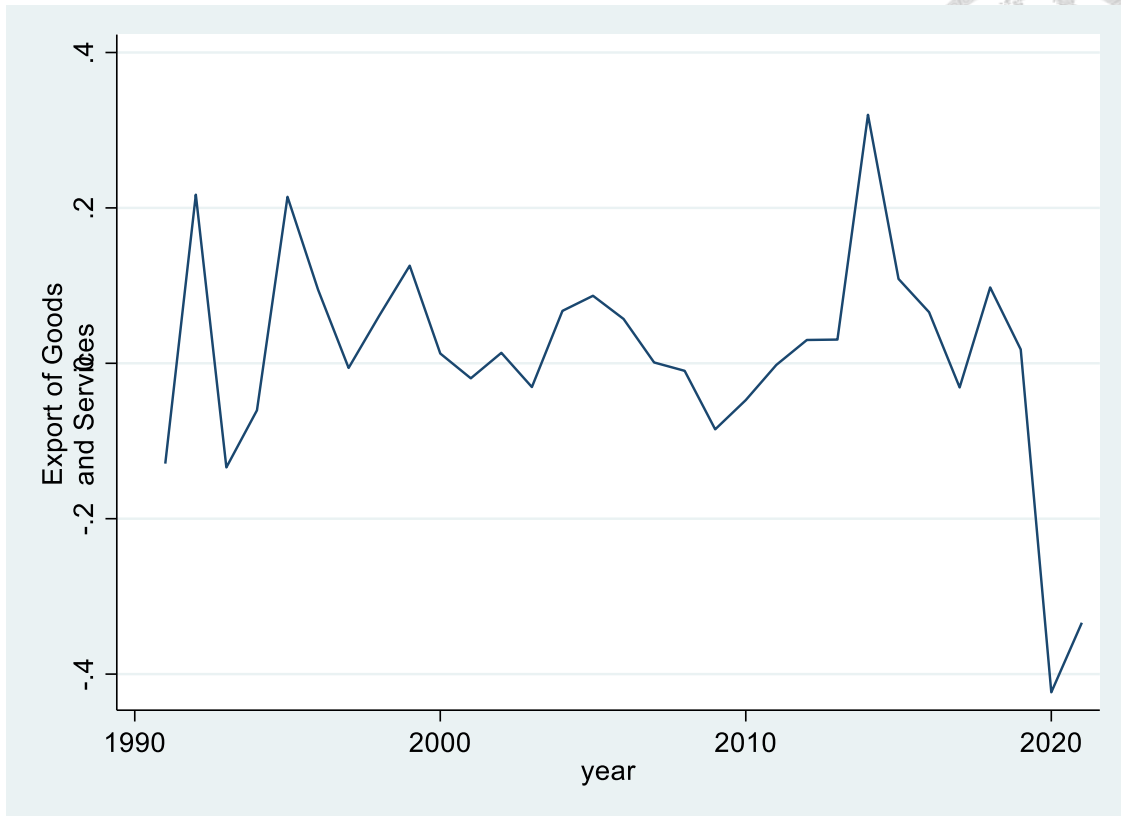


Figure 4.2 EX Trend for St. Vincent and the Grenadines, 1991 – 2021
Source: The World Bank

Over the course of the 31-year period, the growth rate for imports of goods and services similarly stayed at 0.1%, as shown in Figure 4.3. This demonstrates how the amount spent on imports by St. Vincent and the Grenadines has not changed significantly over time. Between 1991 and 2020, there has been a decline in the labor force's growth rate. This demonstrates that unemployment may have increased during that time. Due to COVID-19, the growth rate significantly decreased in 2020 but recovered in 2021. However, the growth rates in 1991 and 2021 are practically identical, showing that nothing has changed in the labor force in those 31 years indicated by Figure 4.4.

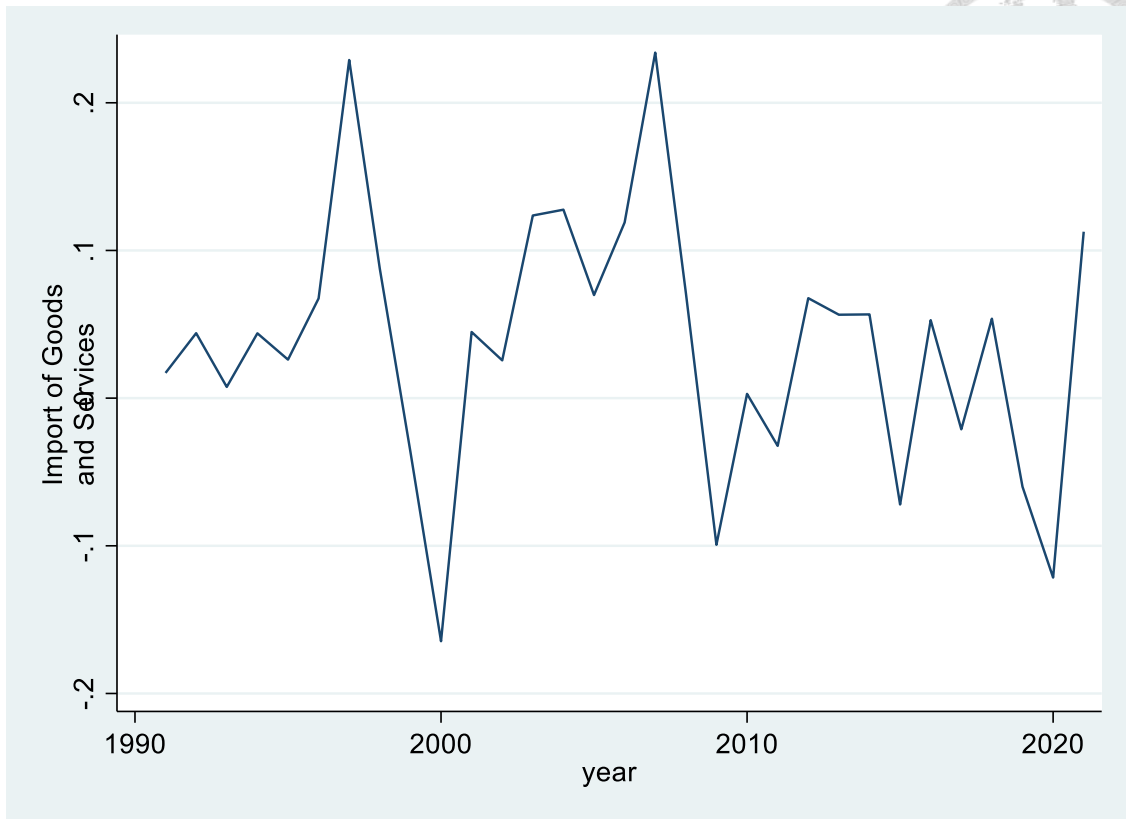


Figure 4.3 IM Trend for St. Vincent and the Grenadines, 1991 – 2021
Source: The World Bank

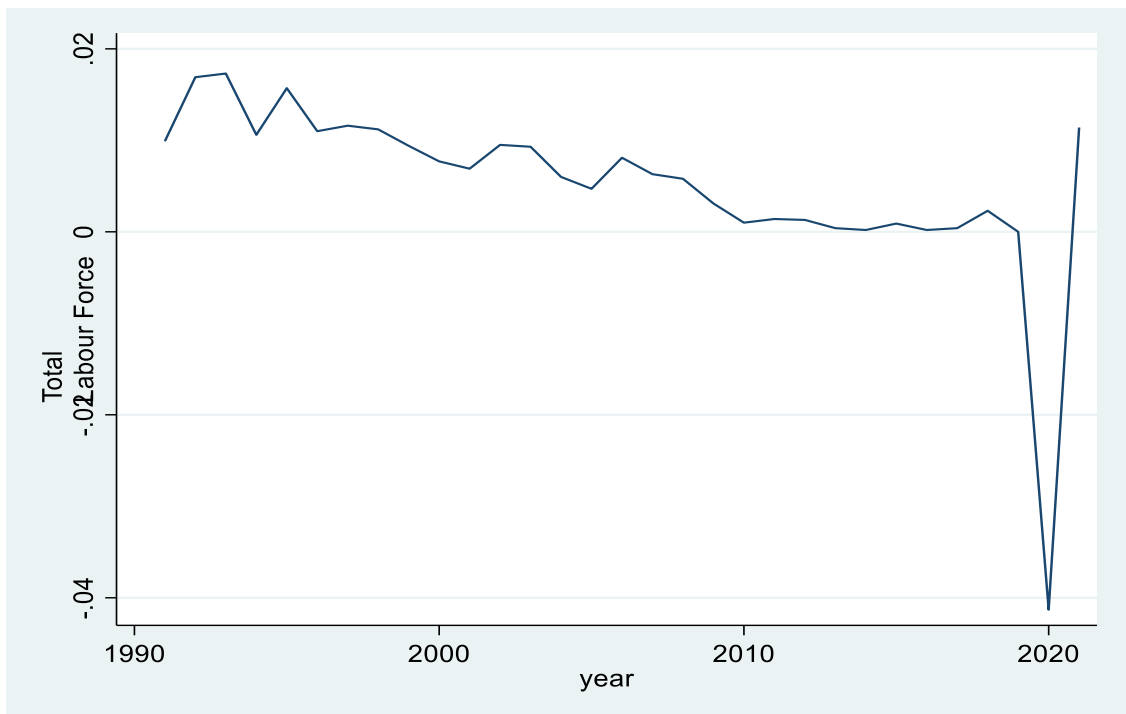


Figure 4.4 LF Trend for St. Vincent and the Grenadines, 1991 – 2021
Source: The World Bank

As shown in Figure 4.5, there hasn't been considerable growth in foreign direct investment. Surprisingly, the rate of FDI expansion did not significantly slow down around COVID-19. This may be because so many people needed help to deal with the virus's symptoms.

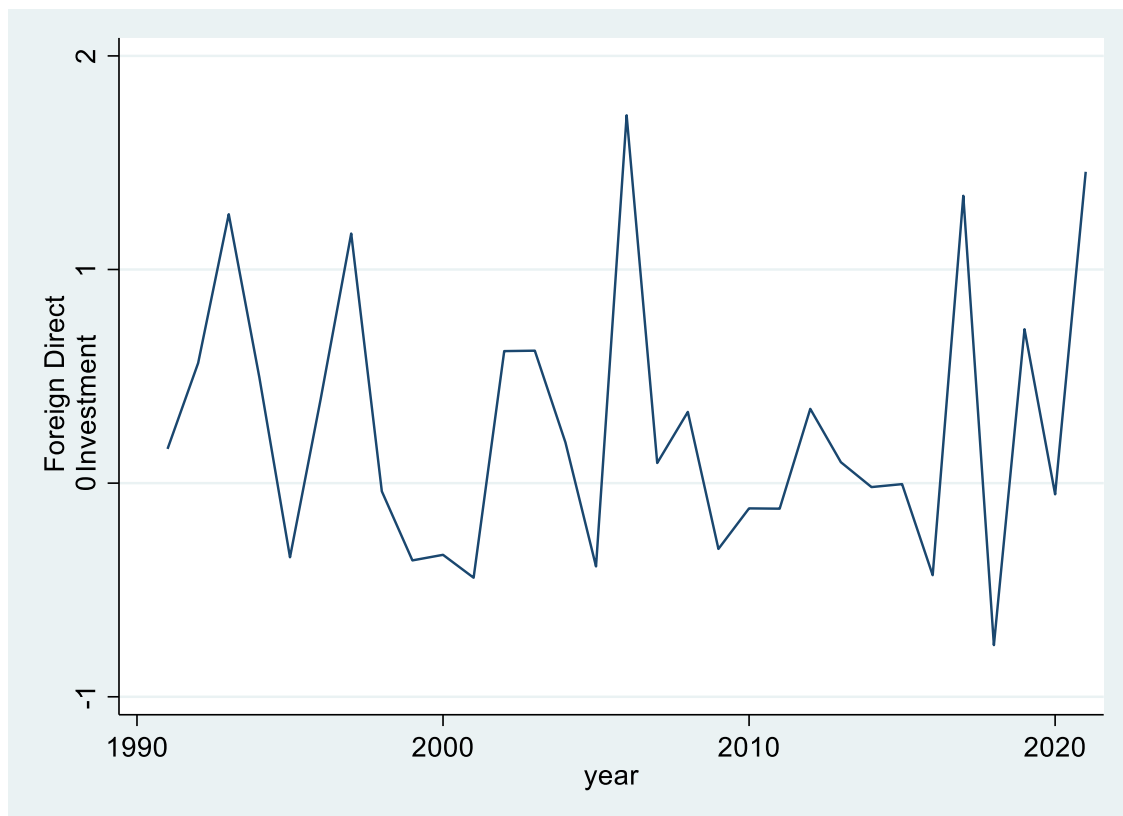


Figure 4.5 FDI Trend for St. Vincent and the Grenadines, 1991 – 2021
Source: The World Bank

4.3 Trend Analysis for St. Lucia

Descriptive Statistics

Table 4.2 presents the descriptive statistics of St. Lucia for five variables, namely Gross Domestic Product growth rate (GD), Exports of Goods and Services Bop growth rate (EX), Imports of Goods and Services Bop growth rate (IM), Labor Force growth rate (LF), and Foreign Direct Investment growth rate (FDI) for the period from 1991 to 2021. The sample's mean GDP value is 1.375, and the standard deviation is 5.908, indicating a

relatively high level of variability in the data. The distribution of GDP may not be perfectly symmetrical, as evidenced by the median GDP value, which is slightly higher at 1.604. The sample's wide range of GDP values is demonstrated by the fact that the smallest GDP value is -24.365 and the highest is 12.23. GDP shows a positive kurtosis, indicating a leptokurtic distribution.

Table 4.2 Descriptive Statistics St. Lucia, 1991-2021

Variables	GDP	EX	IM	LF	FDI
Mean	1.375	0.066	0.039	0.021	0.148
Median	1.604	0.038	0.037	0.022	-0.048
Std. Dev	5.908	0.244	0.126	0.014	0.63
Max	12.23	0.997	0.258	0.045	1.99
Min	-24.365	-0.631	-0.3051	-0.036	-0.494
Skewness	-2.499	1.23	-0.385	-2.411	1.46
Kurtosis	12.975	9.93	3.743	11.35	4.311
Obs	31	31	31	31	31

The distribution of the remaining variables (EX, IM, LF, and FDI) shows a mixture of negative and positive skewness. The mean for EX and FDI is higher than the median, which indicates positive skewness. The mean for IM and LF is lower than the median, which indicates that the data's distribution appears to be negatively or left-skewed. This indicates that the dataset contains some high values that are pulling the mean up while having less of an impact on the median. The positive kurtosis, which indicates that the distribution has a sharper peak and longer, fatter tails than a normal distribution, indicates that all of the independent variables likewise exhibit a leptokurtic distribution.

The GDP growth rate from 1991 to 2021 is depicted in Figure 4.6. Over the years, St. Lucia has expanded in a gradual manner. Prior to COVID-19, it reached a maximum peak of 8% in 1992 and a minimum peak of -0.4 in 2005. Since the implementation of COVID-19, St. Lucia's growth rate has drastically decreased, going from -0.6 in 2019 to -24% in 2020. The economy recovered in 2021, growing by 12%.

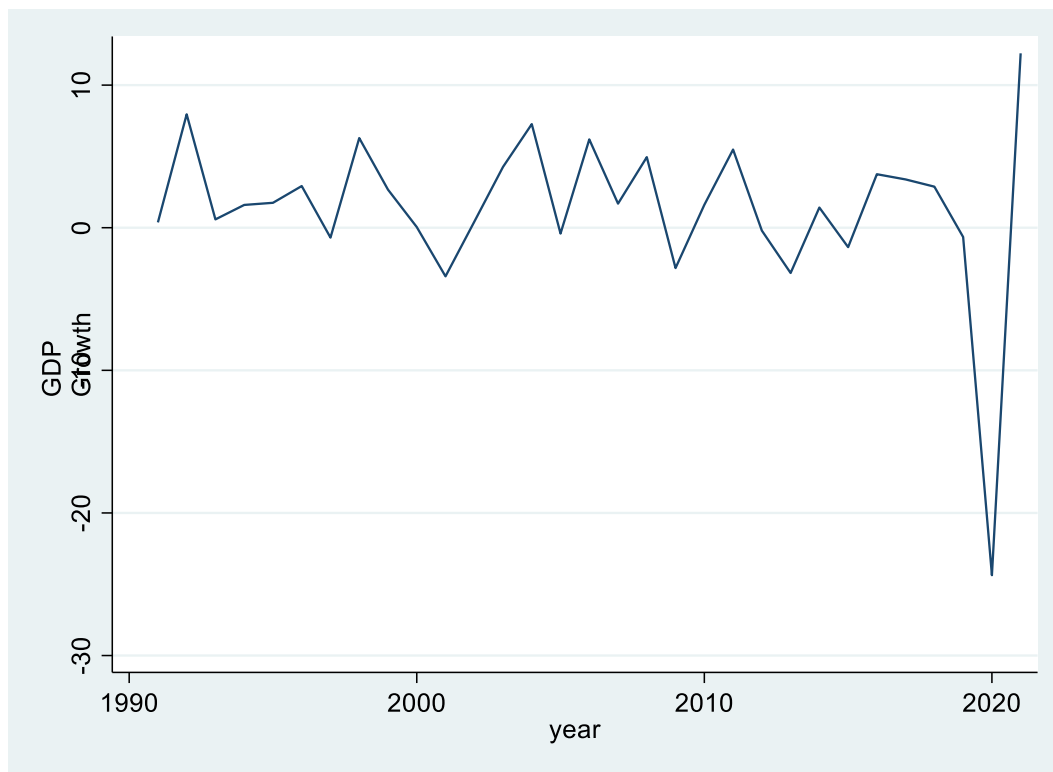


Figure 4.6 GDP Trend for St. Lucia, 1991 – 2021

Source: Author's Estimations in Stata using data from the World Bank

Figure 4.7 demonstrates that there hasn't been much of a shift in the growth rate of exports of goods and services over time. Since 1991, it has always been less than 1%. The same is true of the growth rate of goods and service imports, which has varied throughout time below 1%, as shown in Figure 4.8.

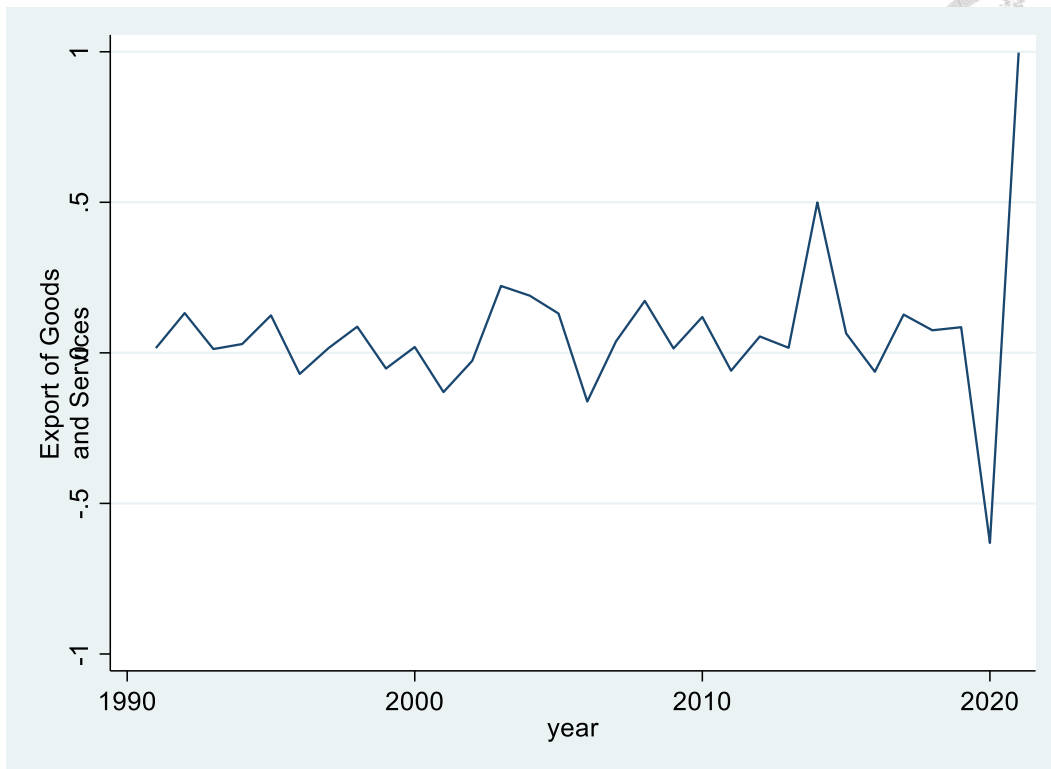


Figure 4.7 EX Trend for St. Lucia, 1991 – 2021
Source: The World Bank

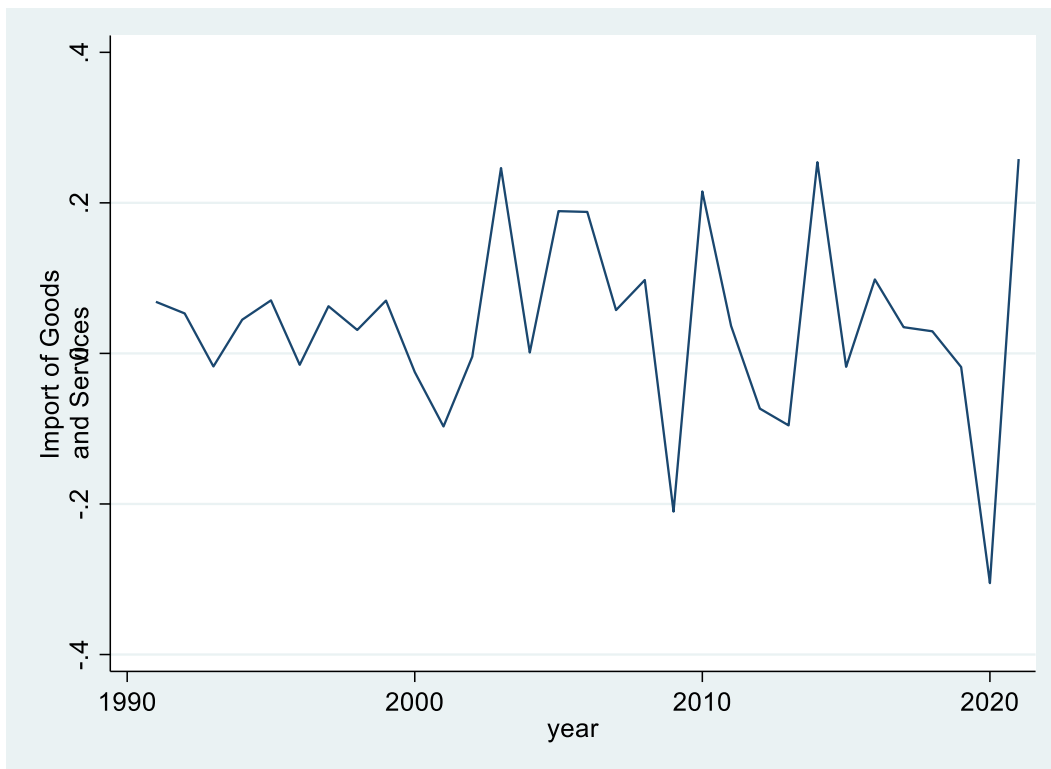


Figure 4.8 IM Trend for St. Lucia, 1991 – 2021
Source: The World Bank

Figure 4.9 shows that while the labor force growth rate has been large, it has generally displayed a declining tendency. On the other hand, as shown in Figure 4.10, the growth rate for foreign direct investment has fluctuated between highs of around 2% in 2006 and lows of about 0.5% in 2008. All of these factors share the fact that they all had a significant decline in 2020 as a result of COVID-19 and recovered in 2021.

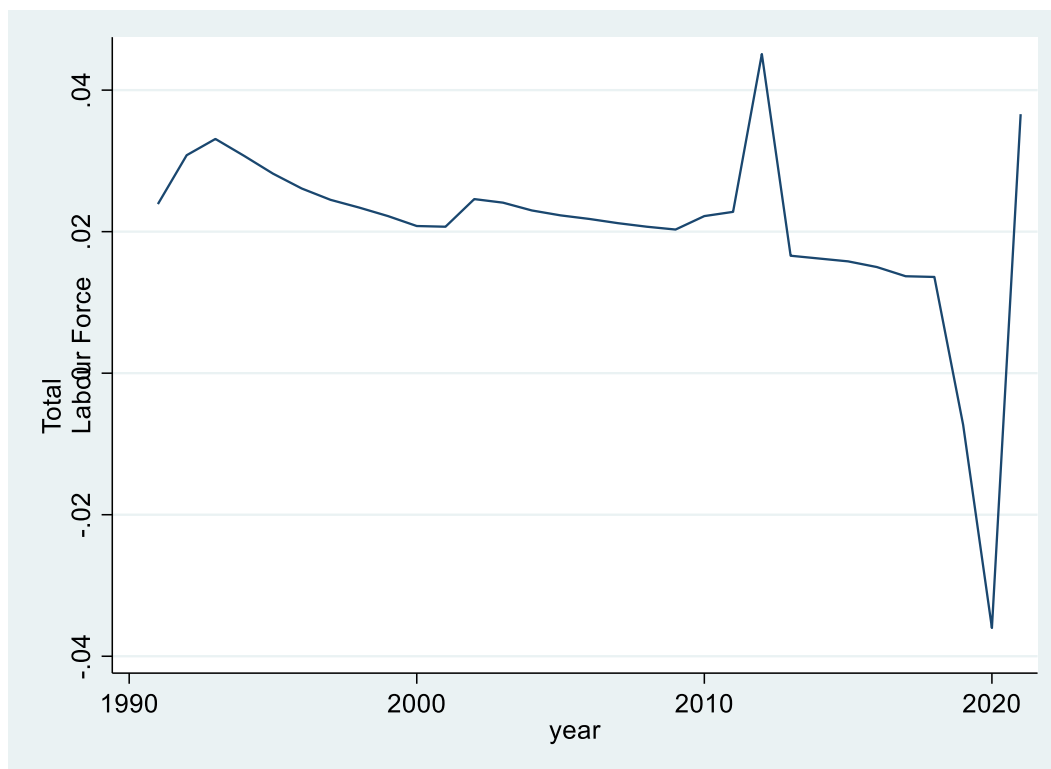


Figure 4.9 LF Trend for St. Lucia, 1991 – 2021
Source: The World Bank

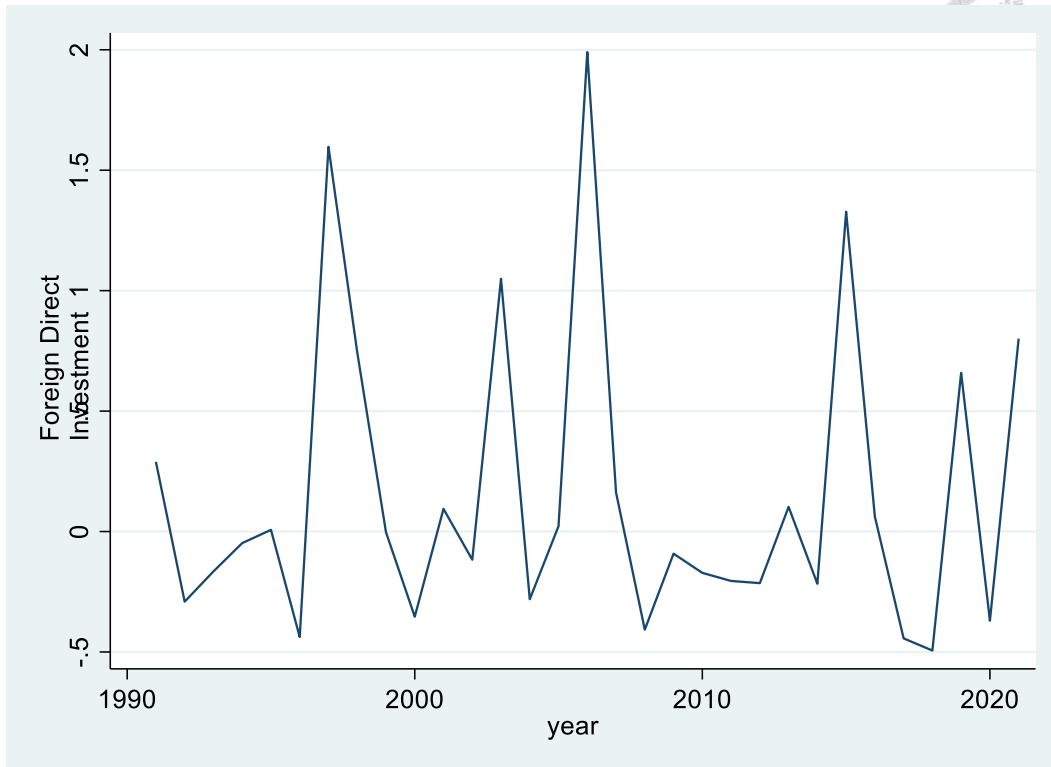
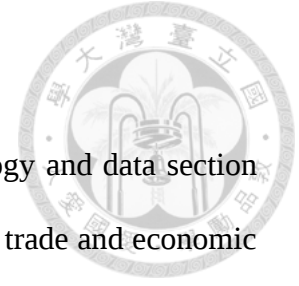


Figure 4.10 FDI Trend for St. Lucia, 1991 – 2021
Source: The World Bank

Chapter 5 Results



The results of the econometric models mentioned in the methodology and data section are presented in this chapter. The relationship between international trade and economic growth in two countries is the primary focus of discussion. A root test, a cointegration test, and an ordinary least squares regression analysis are all included in the analysis to ascertain the long-term link between the variables. The findings and analyses help guide policy choices and shed light on the connection between global commerce and economic growth.

5.1 St. Vincent and the Grenadines

Stationary Test

The results in Table 5.1 of the ADF statistics showed that in the levels, the null hypothesis was rejected in all of the variables except for labor force, indicating that labor force was the only non-stationary variable. However, when tested in its first difference, the null hypothesis was rejected for LF, indicating stationary. On the other hand, the PP test rejected the null hypothesis of all the variables at conventional levels, indicating that they were stationary. From the results, we can conclude that all of the variables except LF are integrated to the order of zero, i.e., $I(0)$. The variable LF was integrated of order one, i.e., $I(1)$. Since all of the series proved to be stationary, the regression is not spurious. Therefore, it can be used for further hypothesis testing, prediction, and forecasting.

Table 5.1 Unit Root Test St. Vincent and the Grenadines



	GDP	EX	IM	LF	FDI
ADF					
Level	-2.768 ***	-2.333 ***	-3.776 ***	-0.018	-3.811 ***
1st Diff				-5.343 ***	
PP					
Level	-4.736 ***	-3.774 ***	-4.124 ***	-8.155 ***	-6.209 ***

Note: *** indicates statistical significance at 1% level. The critical values at level are -1.706 and -3.580 for ADF and PP, respectively, at 5%. The critical value at 1st diff is -1.706 at 5%.

Cointegration Test

Since the stationary test showed that there is a combination of order one and order zero integrations, the Bounds Test was used instead of the Johansen test. The results in Table 5.2 indicated that the null should be rejected since the F-statistic is greater than all critical values. This is evident because there is cointegration among the series, and it can be concluded that there is a long-run relationship between the GDP growth rate and the independent variables. With the series being integrated, this means that variables have a long-run relationship that is not affected by short-term shocks; eventually, they will converge.

Table 5.2 Bounds Cointegration Test St. Vincent and the Grenadines

F-Statistic	10% Critical Value		5% Critical Value		1% Critical Value	
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
7.029	2.45	3.52	2.86	4.01	3.74	5.06

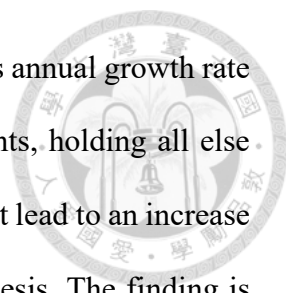
OLS Estimators Results

The OLS estimation results are presented in Table 5.3. All of the variables (EX, IM, LF, and FDI) have a positive impact on the GDP growth rate for St. Vincent and the Grenadines. There were only two variables that showed statistical significance: EX and LF at 5% and 10%, respectively. The other variables, such as IM and FDI, are statistically insignificant at all levels of significance. The model is statistically significant at the 1% significance level, where the $p\text{-value} < 0.01$.

Table 5.3 OLS Regression Results St. Vincent and the Grenadines

Variables	Coefficients	Standard Error
EX	8.313**	3.488
IM	6.340	5.092
LF	98.841*	49.791
FDI	0.932	0.756
Constant	1.168***	0.458
$R^2 = 0.543$		$F=7.74$
n=31	Adj $R^2 = 0.473$	P-value = 0.000

Note: ***, **, * indicates statistical significance at 1%, 5%, and 10% level.



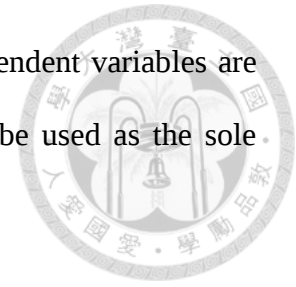
The estimated coefficients show that a one percent increase in exports annual growth rate will cause the GDP growth rate to increase by 8.31 percentage points, holding all else constant. This is not surprising since exports are one of the factors that lead to an increase in economic growth, as mentioned by the export-led growth hypothesis. The finding is the same as Kavoussi's (1984). St. Vincent and the Grenadines don't have the largest export market; however, they have established a somewhat competitive advantage in the export of agricultural produce when compared to their neighbors. This has the potential to allow the country to benefit from increased demand and higher prices in the regional market. In turn, this can lead to higher economic activity.

Holding all other variables constant, a one percent increase in the labor force growth rate caused GDP growth to increase by 98.84 percentage points. This outcome is anticipated because more workers can generate more products and services, which may boost productivity as the labor force grows. An increase in GDP may result from this rise in productivity. A rise in the labor force may also result in an increase in investment and consumption, which will further boost economic growth and GDP. Consequently, it can be concluded that a 1% increase in the labor force may be advantageous for economic growth and may even help raise GDP.

The coefficient of determination (R-squared) is 0.543, which implies that 54.3% of the variation in the dependent variable is explained by the independent variables. Since there are other factors that could affect the GDP growth rate, the other unexplained 45% in the variance is not too surprising.

Even though the intercept is not of concern for this study, it must be noted that the intercept is statistically significant at the 5% significance level, which can mean that the estimated intercept coefficient is significantly different from zero, which implies that

there is a non-zero value of the dependent variable when all independent variables are equal to zero. The significance of the intercept alone should not be used as the sole criterion for the validity of the model.



5.2 St. Lucia

Stationary Test

The results of the ADF statistics showed that in the levels, the null hypothesis was rejected in all of the variables except for GDP, EX, IM, LF, and FDI, as shown in Table 5.4, indicating that all of the variables are stationary. Therefore, there was no need to test the first difference in any of the variables. On the other hand, the PP test rejected the null hypothesis of all the variables at conventional levels, indicating that they were stationary. From the results, we can conclude that all of the variables are integrated to the order of zero, i.e., $I(0)$. Since all of the series proved to be stationary, the regression is not spurious. Therefore, it can be used for further hypothesis testing, prediction, and forecasting.

Table 5.4 Unit Root Test St. Lucia

	GDP	EX	IM	LF	FDI
ADF					
Level	-3.711 ***	-4.909 ***	-4.381 ***	-2.477 ***	-4.646 ***
PP					
Level	-7.058 ***	-7.679 ***	-6.775 ***	-4.877 ***	-5.579 ***

Note: ***, indicates statistical significance at 1% level. The critical values are -1.706 and -3.580 for ADF and PP, respectively, at 5%.

Cointegration Test

Since the series is stationary in order $I(0)$, there is no need to do a cointegration test because the requirement for cointegration is that at least one of the variables is non-stationary in level and becomes stationary after taking differences. This is because any shock to the series in the short run will quickly adjust in the long run.

OLS Estimators Results

The OLS estimation results are presented in Table 5.5. All of the variables (EX, IM, LF, and FDI) have a positive impact on the GDP growth rate for St. Lucia. There were only two variables that showed statistical significance: IM and LF at 5% and 1%, respectively. The other variables, such as EX and FDI, are statistically insignificant at all levels of significance. The model is statistically significant at the 1% significance level, where the $p\text{-value} < 0.01$.

Table 5.5 OLS Regression Results St. Lucia

Variables	Coefficients	Standard Error
EX	5.44	3.546
IM	15.754**	6.920
LF	201.573***	52.877
FDI	0.046	1.032
Constant	-3.757***	1.165
$R^2 = 0.722$		$F = 16.89$
n=31	Adj $R^2 = 0.679$	P-value = 0.000

Note: ***, ** indicates statistical significance at 1%, and 5%.

Holding all other variables constant, a one percent increase in the growth rate of imports of goods and services caused a 15.754 percentage point increase in the GDP growth rate. Since imports are regarded as a leakage that sends money generated in one country to another, this may not be the best situation. The import-led growth hypothesis contends that when a nation imports products and services, this might result in higher investment and consumption, which in turn boosts economic activity. There may have been more rivalry as a result of the increase in imports, which might have improved local industries productivity and efficiency and accelerated economic growth.

Holding all other variables constant, a one percent increase in the labor force growth rate caused GDP growth to increase by 201.573 percentage points. This is highly significant at the 1% significance level for the GDP growth of St. Lucia. This outcome is anticipated because more workers can generate more products and services, which may boost productivity as the labor force grows. An increase in GDP may result from this rise in productivity. A rise in the labor force may also result in an increase in investment and consumption, which will further boost economic growth and GDP. Consequently, it can be concluded that a 1% increase in the labor force may be advantageous for economic growth and may even help raise GDP.

The coefficient of determination (R-squared) is 0.722, and this tells us that approximately 72.2% of the variation in the dependent variable can be explained by the independent variable(s) in the regression model. This means that the regression model is moderately effective in explaining the relationship between the dependent and independent variables. However, it also means that there is still around 27.8% of the variation in the dependent variable that is unexplained by the model.

Although the intercept is not of concern for this study, it must be noted that the intercept is statistically significant at the 1% significance level, which can mean that the estimated intercept coefficient is significantly different from zero, which implies that there is a non-zero value of the dependent variable when all independent variables are equal to zero. The significance of the intercept alone should not be used as the sole criterion for the validity of the model.

Chapter 6 Conclusions

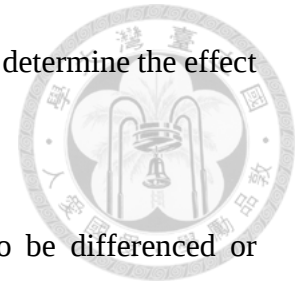


This section concludes with a discussion of the main findings and their implications, the limitations of the study, and suggestions for future research.

A significant part of the economic growth of numerous developing countries has been international trade. The question of whether or not international trade has an impact on economic growth and whether it is export-led or import-oriented still remains. In order to control their internal markets and strive to gain access to global markets, many developing nations have regulations in place. Tariffs, export subsidies, quotas, and other non-tariff trade barriers are some of these policies. In the name of free trade, these policies aim to guarantee universal access, yet they frequently result in less competition and higher pricing for local consumers. Even though there is much research that has investigated the impact of international trade on economic growth, that research has not reached a consensus on whether export-led or import-led trade has a greater impact on economic growth. So far, there have not been any studies done that have chosen St. Vincent and the Grenadines or St. Lucia as their targets. Since these two countries are similar in history and policies, the purpose of this study is to determine if economic growth is import-led or export-led.

The study's specific objective was to examine how St. Vincent and the Grenadines and St. Lucia's exports and imports affected the country's economic growth by using time series analysis from 1991 to 2021. In order to correctly interpret and understand the results obtained, the history and foundation of the trade policies needed to be analyzed. The study also had to look at the theoretical foundations of economic growth and international trade through the lens of previous studies. Then the study looked at empirical evidence from

various studies using various econometric methods that were used to determine the effect of international trade on economic growth.



The stationary test was done to determine if the series needed to be differenced or transformed otherwise to make it stationary. Both the ADF and PP tests were done to determine stationarity, and they both found that the series had no roots and the null hypothesis was rejected. Since both countries proved to be stationary over time, their series is not affected by time and can be used for forecasting and predicting by providing accurate values. A cointegration test was only done for St. Vincent and the Grenadines because the variable (LF) was integrated in order one. The results show that there is a long-term relationship between the dependent variable and its independent variables. On the other hand, St. Lucia didn't need a cointegration test; the series shows all of the variables are integrated in the order of zero.

The study revealed that exports have a significant impact on economic growth for St. Vincent and the Grenadines at a 5% significance level, while for St. Lucia, exports do not significantly impact economic growth. However, for St. Vincent and the Grenadines, imports do not have a significant impact on economic growth; on the other hand, imports show a significant impact for St. Lucia at the 5% significance level. As for the other variables, labor force participation is significant for both countries, while foreign direct investment shows no significant impact on economic growth. From the above findings, even though the series for both countries are stationary and show that the results can be used for both short-run and long-run estimations, the effect of international trade on economic growth varies for both countries. St. Vincent and the Grenadines was presented as export-led, while St. Lucia is import-led. Keeping all things constant, St. Vincent and the Grenadines will achieve economic growth by forcing exports, while St. Lucia will

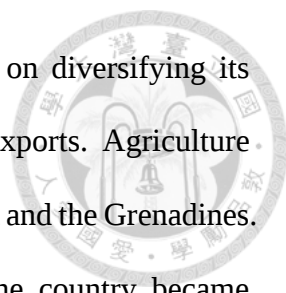
achieve economic growth by focusing on imports. Both countries will benefit from a growing labor force.



Policy Recommendations for St. Vincent and the Grenadines

The study demonstrated that the statistically significant positive result for exports has a substantial impact on policy toward the goal of economic development and growth for St. Vincent and the Grenadines. This shows the export-led growth hypothesis holds true for this country. Therefore, since there is substantial empirical support for the export-led hypothesis, the government of St. Vincent and the Grenadines should continue to pursue export-led economic growth and development policies.

One of the first things the government should do to promote the export-led growth theory is to improve infrastructure. This entails enhancing communication, logistics, and transportation in an effort to reduce the overall cost. The government took a positive step toward strengthening the infrastructure in 2017 when it inaugurated the nation's first international airport. The Port Modernization Project is presently underway with the goal of expanding the cargo port to accommodate greater exports. Having a bigger airport and a larger cargo seaport can reduce costs and make exports more competitive. In addition to enhancing the airport and seaport, the government can also focus on improving the country's communication infrastructure. This may entail making investments in digital technology and high-speed internet connectivity, which can help companies reach global markets, grow their clientele, and improve communication with international partners. As a small island developing state, St. Vincent and the Grenadines does not have access to blisteringly fast internet connections. This hinders access to technology that can assist in making cargo move faster through customs and the port authority and reduce delays.



After establishing the proper infrastructure, the country can focus on diversifying its export base. The country is currently dependent on agricultural exports. Agriculture exports have historically been a major source of wealth for St. Vincent and the Grenadines. However, because of its exclusive reliance on a few products, the country became susceptible to changes in demand and price around the world. Although agriculture still plays a significant role in the economy, there is a need to diversify and develop other products that can be exported. One way to do this is to provide incentives to encourage investment in areas and products that may have great potential to be purchased abroad, such as manufacturing products. The country currently lacks a significant manufacturing sector. Tax breaks are one type of incentive that is now provided to businesses. However, businesses frequently profit from these opportunities and leave the industry before making significant contributions. To ensure that businesses receiving tax advantages do not exploit the nation, appropriate laws and accountability measures need to be put in place.

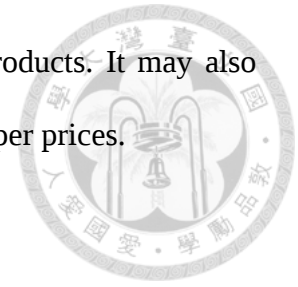
While providing incentives to foreigners is a great initiative, local entrepreneurs and potential entrepreneurs should not be forgotten. Small and medium-sized enterprises are critical to the export growth of St. Vincent and the Grenadines, yet they often suffer from a lack of financial support. Financial assistance for small enterprises in the nation is problematic in part because it frequently fails to benefit those who require it most. Every country experiences political favoritism, which slows progress because funds allocated to political allies are frequently viewed as prejudiced and nepotistic. People are unable to apply for small business loans from commercial banks and credit unions, despite the fact that government financial assistance can be interpreted as political and is ineffective. This is due to a cultural norm against providing loans to people starting new firms. Most consumers who apply for loans at a financial institution lack the requisite collateral, which

prevents them from gaining the needed finance. Here is where the government needs to review its current funding initiatives. By offering guarantees or subsidies, the government should also encourage private lending institutions to lend to small enterprises. The government may also establish its own loan-lending schemes through which small companies might obtain loans with cheaper interest rates.

One of the most important aspects of any economy is the investment in human capital. To support export-led growth, human capital can be developed and invested in. There are now programs available in the country that educate small business owners, but they are not sector-specific. For the purpose of enhancing exports, education and training must be focused on exporting commodities. To develop and carry out programs that concentrate on the skills required for enterprises with an export orientation, the government can collaborate with educational institutions. For instance, if a nation wants to expand the scope of its exports to encompass manufacturing and services, it might set up educational initiatives that impart knowledge on marketing, quality assurance, and product design. The government can offer financial incentives to businesses in the private sector to work with academic institutions to deliver these training programs. These collaborations can give students real-world experience and transferable abilities that are in demand in the workforce. The nation can raise productivity and competitiveness, which can result in higher exports and economic growth, by upgrading the workforce's capabilities.

Promoting trade is an important aspect of export-led growth theory. Despite the country's free trade agreements with other nations, little seems to be accomplished in terms of trade with them. St. Vincent and the Grenadines can boost exports by fostering better international trade agreements. Negotiating trade agreements with other nations is one way to do this. Trade agreements may grant St. Vincent and the Grenadines privileged

access to foreign markets, enhancing the competitiveness of its products. It may also allow foreign countries to access a wider variety of products at cheaper prices.



Policy Recommendations for St. Lucia

According to the findings, St. Lucia's economy is more in line with the theory of import-led growth than the theory of export-led growth. Import growth should be the government's top priority if it wants to sustain economic expansion. First, the nation might imitate St. Vincent and the Grenadines' efforts to upgrade their port facilities and boost productivity. This is a smart technique to benefit from something that previously could have been seen as a drawback. Imports are regarded as a leakage, yet since they are what customers buy locally, they really enhance consumption.

Another way to do this is to address the issue of trade liberalization. To allow a larger inflow of goods and services, the government may attempt to lower tariff and non-tariff barriers. Customers will benefit from lower prices and a greater selection of products as a result of this. Businesses will find it cheaper to import goods and services, which will help the nation's economy thrive as trade barriers are reduced. They can achieve this by negotiating new trade agreements with other nations, for example. They can also demand changes to the CARICOM agreements, allowing them to import less expensive items from their neighbors. This would enhance much-needed, stronger integration among CARICOM countries while also lowering costs. It is crucial to remember that trade liberalization can sometimes have detrimental implications, especially for sectors of the economy that cannot compete with imports. Governments can support impacted industries through actions like subsidies, tax incentives, and training programs aimed at boosting competitiveness in order to address these issues.



Limitations and Further Research

The variables GDP, Exports of Goods and Services, Imports of Goods and Services, Labor Force, and Foreign Direct Investment were all represented by growth rates in the study. Sometimes, a country's growth rate may not accurately reflect its current economic status. It could provide a false impression of how prosperous that nation and its citizens actually are economically. For instance, even though there have been times when St. Vincent and the Grenadines' and St. Lucia's economies have grown, we are unable to determine whether or not the general population has fared well during those times. When comparing the economic health of different countries, the growth rate might be misleading. Although a country may have experienced rapid growth, this does not always imply that its GDP has expanded much.

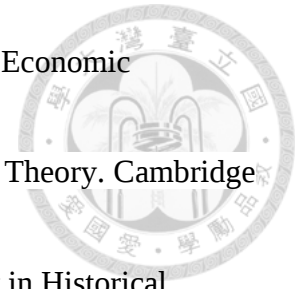
Since the model studied did not include all of the possible variables that can affect economic growth, there is a possible chance of omitted variable bias. It is impossible to include all of the variables that can affect economic growth; therefore, there is a possibility that omitted variable bias could have affected the accuracy and interpretation of the results. Future studies could consider including other variables to reduce the chance of possible bias caused by omitted variables and offer a more thorough analysis. Assessing the potential influence of omitted variable bias on the results might also be done by doing robustness checks by including sensitivity analyses and alternative model specifications. Despite this limitation, the current study offers insightful information, although cautious interpretation is advised due to the potential impact of variables that were left out.

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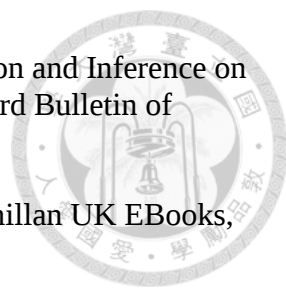
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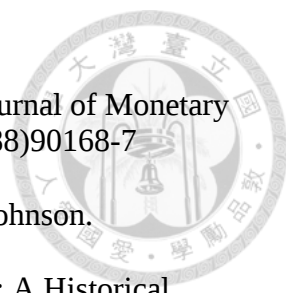
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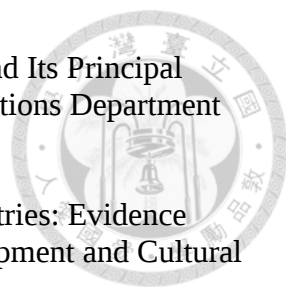


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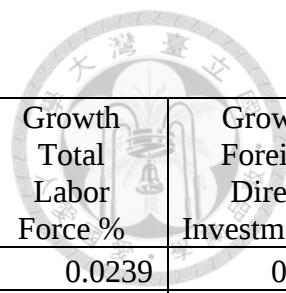
Appendices



A 1.1 Data used for St. Vincent and the Grenadines

Year	GDP Growth Rate %	Growth Rate Export of Goods and Services %	Growth Rate Import of Goods and Services %	Growth Rate Total Labor Force %	Growth Rate Foreign Direct Investment %
1991	1.1356	-0.1291	0.0171	0.0099	0.1604
1992	6.3779	0.217	0.044	0.0169	0.5624
1993	4.2507	-0.134	0.0076	0.0173	1.259
1994	-1.2476	-0.0605	0.0439	0.0106	0.4941
1995	7.7667	0.2143	0.0261	0.0157	-0.3469
1996	1.2879	0.0948	0.0675	0.011	0.3918
1997	3.5052	-0.006	0.229	0.0116	1.1684
1998	4.0902	0.0611	0.0876	0.0112	-0.0381
1999	2.7103	0.1256	-0.0363	0.0094	-0.3615
2000	1.639	0.0126	-0.1646	0.0077	-0.3354
2001	1.7482	-0.0193	0.0448	0.0069	-0.4426
2002	5.3421	0.0135	0.0256	0.0095	0.6182
2003	6.6913	-0.0306	0.1237	0.0093	0.6202
2004	4.1147	0.0675	0.1276	0.006	0.1907
2005	2.4886	0.0869	0.0698	0.0047	-0.3897
2006	6.9969	0.0571	0.119	0.0081	1.7219
2007	3.323	0.0011	0.234	0.0063	0.0943
2008	0.4046	-0.0097	0.0714	0.0058	0.3336
2009	-1.3782	-0.085	-0.0993	0.0031	-0.3078
2010	-4.4705	-0.0474	0.0029	0.001	-0.118
2011	-0.6063	-0.0021	-0.0323	0.0014	-0.1193
2012	1.1691	0.03	0.0677	0.0013	0.3478
2013	2.4625	0.0305	0.0565	0.0004	0.0982
2014	1.1458	0.3198	0.0567	0.0002	-0.0182
2015	2.7852	0.1086	-0.072	0.0009	-0.0044
2016	4.1496	0.0658	0.0528	0.0002	-0.4307
2017	1.6694	-0.0311	-0.0211	0.0004	1.3452
2018	3.0523	0.0976	0.0538	0.0023	-0.7581
2019	0.404	0.0178	-0.06	-0.0001	0.7206
2020	-5.3127	-0.4234	-0.1215	-0.0413	-0.0522
2021	1.3521	-0.3339	0.1127	0.0114	1.4575

A 1.2 Data used for St Lucia



Year	GDP Growth Rate %	Growth Export of Goods and Services %	Growth Import of Goods and Services %	Growth Total Labor Force %	Growth Foreign Direct Investment %
1991	0.3757	0.016	0.0686	0.0239	0.2894
1992	7.9531	0.1321	0.0532	0.0308	-0.291
1993	0.5832	0.0127	-0.0173	0.0331	-0.1656
1994	1.5986	0.0294	0.0448	0.0307	-0.048
1995	1.7482	0.1246	0.0705	0.0282	0.0071
1996	2.9226	-0.07	-0.0151	0.0261	-0.4377
1997	-0.6941	0.0157	0.0627	0.0245	1.5971
1998	6.2865	0.087	0.0312	0.0234	0.7437
1999	2.6706	-0.0519	0.0702	0.0222	-0.0029
2000	0.0487	0.0195	-0.0247	0.0208	-0.3536
2001	-3.4081	-0.1302	-0.097	0.0207	0.0941
2002	0.4165	-0.0263	-0.0043	0.0246	-0.1169
2003	4.2646	0.2222	0.2463	0.0241	1.0492
2004	7.2674	0.19	0.0012	0.023	-0.281
2005	-0.4103	0.1307	0.189	0.0223	0.0224
2006	6.1953	-0.1614	0.188	0.0218	1.9902
2007	1.6916	0.0384	0.0576	0.0212	0.1623
2008	4.9493	0.1727	0.0975	0.0207	-0.4071
2009	-2.8289	0.0147	-0.2101	0.0203	-0.0919
2010	1.6039	0.1193	0.2152	0.0222	-0.1715
2011	5.4834	-0.0592	0.0366	0.0228	-0.2051
2012	-0.1999	0.0545	-0.0733	0.0451	-0.2142
2013	-3.1744	0.017	-0.0956	0.0166	0.1024
2014	1.4162	0.4995	0.2541	0.0162	-0.2168
2015	-1.362	0.0648	-0.0178	0.0158	1.3276
2016	3.753	-0.0627	0.0983	0.015	0.0616
2017	3.3871	0.1271	0.0349	0.0137	-0.4435
2018	2.8808	0.0751	0.0294	0.0136	-0.4939
2019	-0.6502	0.0852	-0.0181	-0.0073	0.6588
2020	-24.3646	-0.6311	-0.3051	-0.036	-0.3702
2021	12.2299	0.9973	0.2582	0.0366	0.8009