MINISTRY OF EDUCATION, YOUTH AND SPORT
NATIONAL UNIVERSITY OF MANAGEMENT
SCHOOL OF GRADUATE STUDIES

THE ROLE OF EXPORTS IN ECONOMIC GROWTH: EVIDENCE FROM CAMBODIA

CHHEAV KEOVOLEAK

Thesis Submitted in Partial Fulfillment of the Requirement for
The Degree of Master

SPECIALIZATION IN

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Supervised by:

Associate Professor Dr. Tan Saroeun

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2024

DECLARATION

I hereby declare that this thesis, titled "The Role of Exports in Economic Growth: Evidence from Cambodia," is the result of my own work and research. Any ideas, quotations, or information taken from the work of others have been properly cited and acknowledged.

I declared that this is a true copy of my own thesis, including the final revisions, as approved by my thesis committee, thesis adviser, and school of graduation study of National University of Management (NUM). This thesis has not been submitted for a higher degree to any other universities or Institutions.

I further declare that I am the sole authors of this thesis and that no unacknowledged help has been received from any other person, except where explicitly stated.

Signature: _____

Date:

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My name is Chheav Keovoleak, I am a student who has been studying for a master's degree in management at the National University of Management in the 2024 academic year. Please express your gratitude and sincere thanks to:

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ABBREVIATIONS

Abbreviations	Definitions
ADB	Asian Development Bank
ANOVA	Analysis of the variance
ARDL	The Autoregressive Distributed Lag
DV	Dependent Variable
EBA	Everything but Arms
E-Views	Econometric Views
EU	The European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IV	Independent Variable
QIP	Qualified Investment Project
SMEs	Small and medium-sized enterprises
SEZ	Special Economic Zone
VAR	Vector Auto-Regressive
VECM	Vector error correction mode

ABSTRACT

Export development is crucial for generating foreign exchange earnings, creating employment, promoting economic growth, and alleviating poverty. In Cambodia, 54 Special Economic Zones (SEZs) were established in 2021, offering tax breaks, better infrastructure, and a simpler business environment. As of December 2021, 22 SEZs were operational, drawing significant foreign investment from China, South Korea, and Japan. Exports are considered the most important source of welfare in many regions.

This study analyzes the role of exports in economic growth from 1993 to 2022 using annual data on Cambodia's GDP, exports, imports, foreign direct investment, and employment. This study examines Cambodia's export trends and economic growth from 1993-2022, highlighting of impact of exports on economic development of Cambodia, analyzing the effect of long-term and short-term causality of export on economic growth in Cambodia, and providing implications. The main purpose of this study is to find out whether exports have a positive or negative effect on economic growth. The Autoregressive Distributed Lag (ARDL) model is mostly used to observe the effects of exports and economic growth. This study used the ADF and Phillip Perron test for the unit root of the time series. The result shown GDP and Import serial variables are stationary at the level. Except, export, foreign investment (FDI), and employment are stationary at first difference. The result of the multiple regression model, ARDL analysis concluded there is a long-run and short-run cointegration between export and GDP in Cambodia through to check long-run bound test with the adjustment speed (of equilibrium) is 10.38% that is rather fast rate and short-run Wald test.

The study recommends Cambodia's export development policies, including improving infrastructure, transportation, and environment to attract foreign investment. It also suggests strengthening traffic rules, reducing accidents, and taking strict legal action against investment rule violators. Short-term training for human resources and economic leakages are also suggested.

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CHAPTER I

INTRODUCTION

1.1. Background of Study

As per Kaldor (1966) growth rule, often known as the engine of growth hypothesis, the manufacturing sector is a crucial factor in fostering sustainable development and economic progress. The capacity to "meet the needs of present without compromising the ability of future generations to meet their own needs" is what the United Nations Brundtland Commission defines as sustainability (UN World Commission on Environment and Development, Ed., Report of the World Commission on Environment and Development: Our Common Future, 2017). The impact of the manufacturing process and its output, as well as its capacity to increase employment, are indicators of its sustainability (Omolara, 2016). Szirmai (2012), for instance, outlines the characteristics of the manufacturing sector that promote an economy's long-term growth and expands on the arguments in favor of industrialization as the primary driver of growth. Among the major groupings of emerging nations, the manufacturing sector's growth-driven function is particularly significant. Manufacturing has historically been a major driver of economic growth in emerging nations in Latin America and East Asia, while its impact on established economies is smaller (Fagerberg & Verspagen, 1999). Furthermore, it has been discovered that during times of typical expansion, manufacturing makes the most contribution to growth (Timmer & De Vries, 2008).

For these reasons, it is now crucial to comprehend the main strategies that emerging nations frequently employ in their quest of sustainable economic growth as well as how these strategies affect the expansion of their manufacturing sectors. Among the many development methods, the export-led growth promotion strategy is one that is frequently used in the majority of developing nations—a type of trade liberalization. Developing nations were advised to adopt the export-led growth paradigm, which was a major development objective and eventually became a cornerstone of the Washington

Consensus (Palley, 2012). It dominated the 1980s and 1990s and was financially supported by foreign institutions like the World Bank and the IMF.

While trade liberalization has failed in nations in Africa and South America, it has resulted in some successful industrialization experiences in East and Southeast Asian economies (Tregenna, 2015) (Rodrik, 2016). There is evidence of output deindustrialization in Bolivia, Peru, and Venezuela in Latin America and in Ghana, Sierra Leone, and Zambia in sub-Saharan Africa. Before 1985, deindustrialization in Ghana, Bolivia, and Peru actually caused the overall growth rates of their economies to decline (Pieper, 2000).

This failure is attributed by economists to the fact that a significant amount of those nations' exports is made up of primary products, whose manufacturing is typically thought to require a lot of labor and low levels of expertise and knowledge (Deaton, 1999). The majority of developing nations, highly dependent on free trade, have a comparative advantage in that they export primary goods rather than producing manufactured goods. This course of change not only hinders the advancement of technology and industrialization, but it also has the potential to deindustrialize the manufacturing sector by taking resources away from it (Tregenna, 2009).

Stated differently, many developing nations pursue an export-led development agenda that directs them to fully capitalize on their comparative advantage, but this agenda is not well matched with the objectives of industrialization and the growth bonus that results from structural transformation. In the majority of development situations, they are in reality contradictory, which causes the experiences of various groupings of nations to diverge dramatically (Rodrik, 2016).

Special economic zones (SEZ) have been established by the majority of ASEAN member states in an effort to boost exports, draw in investment, and generate employment. Technology parks, free trade zones, export processing zones, and digital free trade zones are examples of SEZs. Additionally, more recent ASEAN members are establishing their own SEZs, such as Savan Seno Park in Lao PDR and Thilawa SEZ in Myanmar. But every member state has a

unique approach to SEZ development, with various SEZ kinds serving various functions (Jusoh & Razak, 2022).

Over the past ten years, there has been a notable growth in foreign direct investment (FDI) flows to the least developed nations of the Association of Southeast Asian Nations (ASEAN), namely Cambodia, Lao PDR, and Myanmar. In these least developed countries (LDCs), average annual FDI inflows increased by a ratio of two to five between 2011 and 2020 compared to the years 2001 to 2010. Inflows increased by five times in Lao PDR, four times in Cambodia, and doubled in Myanmar during this time (figure 1). Due to increased investment prospects and the fact that more multinational corporations (MNEs) are moving their operations to these nations, the outlook for FDI in ASEAN LDCs is positive (Amelia U. and Kee H., 2023).

1.2. Statement of the Problem

Export development is increasingly viewed as an important tool in generating foreign exchange earnings, creating employment and income, promoting economic growth and alleviating poverty. A general consensus has emerged that export not only increases foreign exchange income, but also creates employment opportunities, stimulates the growth of the manufacturing industry and by virtue of this, triggers overall economic growth. Further, export urged the rise in competition in the advanced technology, increased skilled people and also developed economic growth (Marjit and Ray ,2017).

The Kingdom of Cambodia is located at the heart of what has been considered as the most dynamic region of the world economy, i.e., Southeast Asia. In 2022, with a population of 16.8 million, Cambodia is increasingly integrating with the region and has enjoyed a decade of macroeconomic stability and growth, except in Covid 19 period of 2020 to 2022. The country has made substantial progress in its economic reconstruction since 1993. Although the growth of the country was interrupted by the global economic downturn in 2008-09, Cambodia staged a strong recovery in 2010 and 2011. Cambodia remains largely agrarian with a large percentage of the population engaged in subsistence agriculture. Industries investment is considered as one of

the significant pillars of the economy as it creates jobs for 9,020,278.00 people and contributes to GDP for 29.5 billion USD in 2022. Further, Cambodia had attracted more than 3.5 billion from foreign direct investment in 2022, an increase of 2.9 percent compared to 2021.

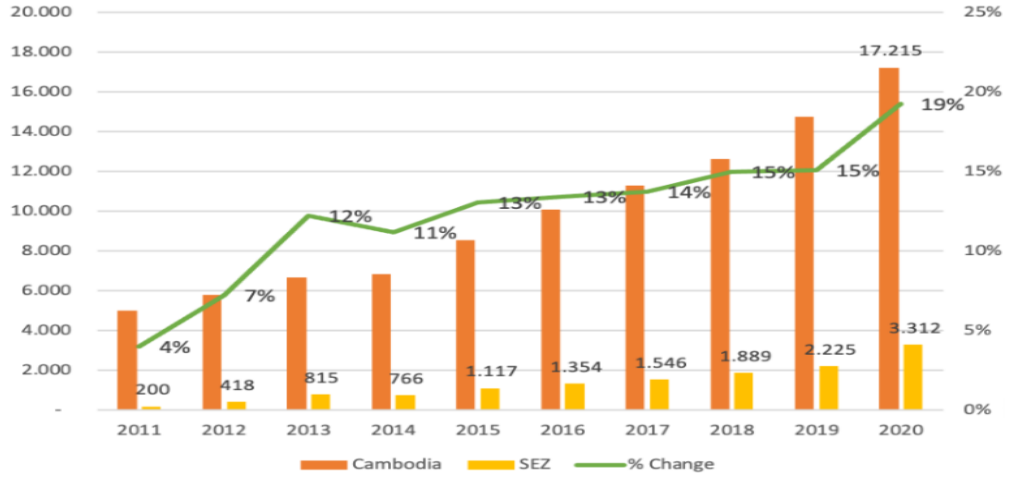
According to reports from 2021, there were 54 Special Economic Zones (also known as SEZs) in Cambodia. These zones were located throughout the nation, including in the capital city of Phnom Penh, border towns like Bavet, and Sihanoukville in the south. Two pieces of legislation, Sub-Decree 147 on the Organization and Function of the CDC and Sub-Decree 148 on the Establishment and Management of Special Economic Zones, were promulgated on the same day and came into effect on December 29, 2005. These laws established SEZs. These special economic zones serve to boost economic growth in Cambodia by offering tax breaks, better infrastructure, and a more straightforward way of doing business in the country, with a focus on industrial investment. This newsletter will outline the steps involved in establishing a business in a Special Economic Zone (SEZ) and the potential investment incentives.

In 2023, commerce in the zone increased significantly, reaching over $3.3 billion, a year-over-year rise of more than 33%. (Admin & Admin, 2023) The aggregate export-import value of all the industries and businesses in the 11.13 square kilometer Special Economic Zone (SSEZ), which is the largest industrial park in the Kingdom in terms of both area and occupancy, was $3.362 billion in 2023, up 34.86% from the year before. The trade value of the zone accounted for around 7.18% of the $46.83 billion in total exports and imports made by Cambodia in 2023.

The Special Economic Zones (SEZs) in Cambodia are geographically defined regions that offer special tax breaks and customs advantages to companies in an effort to attract foreign investment and generate employment. As of December 2021, there were 22 Special Economic Zones (SEZs) operating in Cambodia, which had drawn substantial foreign investment from nations including China, South Korea, and Japan and employed over 139,000 people. The Council for the Development of Cambodia (CDC) is in charge of the

Cambodia Special Economic Zone Board (CSEZB), which is in charge of overseeing the SEZs (Wu, 2023).

Figure 1: SEZ Export of Cambodia



Since Cambodia represents its own geo-socio-cultural identity in the Southeast Asia region, it demands specific export-manufacturing development plans and actions, keeping in mind an overall export perspective of the country.

For many regions and countries, it is the most important source of welfare. Today, the economic significance of export gives the industry greater respect among the business community, public officials, and the public in general. Numerous studies have demonstrated that export can play a significant role in balanced sustainable development, and that it can be effectively harnessed to generate net benefits for the poor (UNWTO, 2002). However, the ability of the national economy to benefit from export depends on the availability of investment to develop the necessary infrastructure and on its ability to supply the needs of the markets.

Further, as Phnom Penh and the borders zone are the most attractive SEZ of the country, it needs special attention of the planners, policy makers and above all government agencies. There is a heightened feeling of urgency to confront the growing economic issues in order to continue growth, lessen lingering poverty, and realize Cambodia's goal of becoming an upper middle-income nation by 2030, even in light of reduced growth prospects. The recently approved Pentagonal Strategy for 2023–2028 presents a comprehensive reform program. Moreover, Cambodia plans to start construction on the $1.7 billion

Chinese-funded Funan Techo Canal this year and complete construction by 2028. The project proposes to dig a 180-kilometer canal connecting Phnom Penh to Kep province, affecting waterways in Kandal, Takeo, Kampot and Kep provinces. The project's proposed use of commercial transportation, real estate, and agricultural would advance Cambodia's economic growth. In the case, the specific plans must be designed to meet the future demands for the foreign direct investment and export in the country. Thus, keeping the above in mind, the present study makes a modest attempt to analyze the impact of export, long-run and short-run causality, on economic growth of Cambodia with the existing trend of exports and economic growth in the period of 1993 to 2022 of Cambodia.

1.3. Research Questions

i. What is the existing trend of exports and economic growth in the period of 1993 to 2022 of Cambodia?
ii. What is the impact of exports on economic growth in Cambodia?
iii. What is the affect of long-run and short-run causality of export on economic growth in Cambodia?

1.4. Research Objectives

i. To analyze the existing trend of exports and economic growth in the period of 1993 to 2022 of Cambodia.
ii. To highlight the impact of exports on economic development of Cambodia.
iii. To analyze the effect of long-run and short-run causality of export on economic growth in Cambodia.
iv. To provide a conclusion and implications for the role of exports on Economic development in Cambodia.

1.5. Hypothesis

The relationship between the independent variables (IVs) and the dependent variable (DV) will be tested to answer the research problem

established for hypothesis. Exports, imports, foreign direct investment, and employment are considered as the IV. The DV is based on the Gross Domestic Product (GDP). The null hypothesis will be shown as a negation in the representation of the hypothesis's hypothesis.

- Ho: EXP, IMP, FDI and EPM have no significant impact on economic development in Cambodia.

1.6. Significance of Study

The analysis of how exports affect Cambodia's economic expansion is important for a number of reasons.

1. Development of Economic Policy

Suggestions for Lawmakers: Policymakers in Cambodia may develop plans that use export activity as a means of promoting sustainable economic growth by having a better understanding of the link between exports and economic growth.

Sectoral Focus: By determining which export-related industries contribute most to growth, specific investment and assistance may be provided, promoting industries that can generate the highest returns on investment.

2. The Attraction of Foreign

Direct Investment (FDI) Cambodia may become a more alluring location for international investors if there is a demonstrable connection between exports and economic development. FDI can thereby further increase export potential and economic expansion, generating a positive feedback loop.

Export diversification: Recognizing the link between exports and growth may promote export diversification, lowering

3. Diversification of the Economy

Lessening Vulnerability: By emphasizing export-driven growth, Cambodia may lessen its dependence on traditional industries like textiles and agriculture, which will result in a more robust and diversified economy.

Expansion of Export Markets: The research may point up chances to enter new markets, which would encourage the development of various sectors and enhance overall economic stability.

4. Employment and the Reduction of Poverty

Employment Creation: Export development frequently results in employment creation, which is essential for reducing poverty in emerging nations like Cambodia. This is especially crucial in rural regions where the main job sectors are manufacturing exports and agriculture.

Income Generation: Higher exports can boost the earnings of employees and companies operating in export-related sectors, enhancing economic well-being and reducing poverty.

5. Regional and Global Integration

ASEAN and Global Trade: Knowing how exports affect trade will assist Cambodia, an ASEAN member, better integrate into regional and international trade networks, boosting its economic status and competitiveness.

Global Value Chains: Cambodia can strategically position itself within global value chains to increase its economic impact and possibilities by studying how exports contribute to growth.

6. Ecological Progress

Balancing Growth with Sustainability: The research can help ensure that economic growth is in line with the objectives of sustainable development by shedding light on how export operations affect the environment and nearby communities.

Long-term Planning: The study's insights may be used to develop long-term plans that guarantee growth is inclusive and sustainable in addition to promoting it.

In conclusion, research on how exports affect Cambodia's economic growth offers important insights that help shape economic policy, draw in capital, promote economic diversity, provide employment, connect Cambodia to the world market, and support sustainable development.

1.7. Scope and Limitations of the Study

The current study finds and examines Cambodia's current export and foreign direct investors, arrival, and use trends. Cambodia is taken into consideration while analyzing the current FDI-export and usage patterns. The

study has taken into account the years 1993 to 2022 in order to examine the expansion of the export industry in Cambodia. The study uses secondary sources of data to examine the expansion of the export industry in the nation; hence, the limitations that are known to apply to secondary sources also apply to this particular study. The Gross Domestic Product has been used as an indication of the economic growth of the nation in order to analyze the function of the export sector in Cambodia's economic development from 1993 to 2022. Though the present study is limited in its scope and coverage, however, keeping the effort, time, data availability and other constraints in mind, the study is a modest attempt in its desired direction. Moreover, from the policy perspective point of view, the study identifies and analyzes the existing problems and prospects of export development in Cambodia. However, the study is not free from limitations and therefore, the following are identified as the limitations of the study:

i. To analyze the existing trend of exports and economic growth in the period of 1993 to 2022 of Cambodia.
ii. To highlight the impact of exports on economic development of Cambodia.
iii. To analyze the growth of the export sector in Cambodia, the study has considered the period from 1993 to 2022. Further, on the basis of data availability, indicators such as export, import, foreign direct investment and employment in export sector have been considered.

Thus, as above, the geographical coverage of the study is quite limited.

1.8. Layouts of Study

The study consists of five chapters as follows:

Chapter I. The first chapter provides the fundamental understanding of the research which includes background of the study, problem statement, research data, research objectives, significant of study, scope, limitations hypothesis and outline of study.

Chapter II. The second chapter is to review the relevant of study with honor.

This chapter is divided into three parts. The first part reviews the definition of exports, imports, direct foreign investment, and employment which are key elements to study. The second part reviews the relation in empirical literature, studies focus on the role of each factor on Economic Growth. Finally, at the end of the chapter, a concluding remark is given.

Chapter III. The aim of this chapter is to explain the methodology used in the present study. For this purpose, the chapter is divided into five sections. The first section explains the type of analysis carried out in the study, while in the second, third, and four sections, types of analysis, types and sources of data, and statistical tools are presented. The procedure for collecting data is given in the five sections of this chapter. Subsequently, coverage of the study and procedure of analyzing the data respectively. At the end of this chapter, a concluding remark is given.

Chapter IV. For this chapter, exports its part in economic development of Cambodia are analyzed. The chapter is separated into three sections This chapter know about the influence of exports in economic development of Cambodia.

Chapter V. The last chapter summarizes the main findings of the study. This chapter also will provide policy implications and suggestions along with the scope for further research. Finally, the chapter ended with a conclusion.

CHAPTER II
LITERATURE REVIEW

Introduction

For this purpose, the chapter is broadly divided into three parts. The first part reviews the conceptual literature relating to definition of exports, imports, direct foreign investment (FDI), and employment. In empirical literature, studies focus on the effects of each factor on Economic Growth. Finally, at the end of the chapter, a concluding remark is given.

2.1 Definition of Key Term

Gross domestic product (GDP) is a monetary measure of the market value of all the final goods and services produced and rendered in a specific time by a country or countries. GDP is more often used by the government of a single country to measure its economic health. Due to its complex and subjective nature, this measure is often revised before being considered a reliable indicator (Duigpan, Brian, 2017).

GDP definitions are maintained by several national and international economic organizations. The Organization for Economic Co-operation and Development (OECD) defines GDP as an aggregate measure of production equal to the sum of the gross values added of all resident and institutional units engaged in production and services (plus any taxes, and minus any subsidies, on products not included in the value of their outputs). An IMF publication states that, GDP measures the monetary value of final goods and services that are bought by the final user produced in a country in a given period (Gross Domestic Product: An Economy's All, 2019).

Export is a good produced in one country that is sold into another country or a service provided in one country for a national or resident of another country. The seller of such goods or the service provider is an exporter; the foreign buyers is an importer. Services that figure in international trade include financial, accounting, and other professional services, tourism, education as well as intellectual property rights (Joshi, Rakesh Mohan ,2014). Exporting may help a company achieve experience curve effects and location economies in their

home country. Ownership advantages include the firm's assets, international experience, and the ability to develop either low-cost or differentiated products. The locational advantages of a particular market are a combination of costs, market potential and investment risk. Internationalization advantages are the benefits of retaining a core competence within the company and threading it though the value chain rather than to license, outsource, or sell it (Hill, Charles, 2015).

Import is a good or service bought in one country that was produced in another. Imports and exports are the components of international trade. If the value of a country's imports exceeds the value of its exports, the country has a negative balance of trade, also known as a trade deficit (Segal, 2021). Imports consist of transactions in goods and services to a resident of a jurisdiction (such as a nation) from non-residents. The exact definition of imports in national accounts includes and excludes specific "borderline" cases. Importation is the action of buying or acquiring products or services from another country or another market other than our own. Imports are important for the economy because they allow a country to supply nonexistent, scarce, high cost, or low-quality certain products or services to its market with products from other countries (Lequiller, 2006).

Foreign direct investment (FDI) is a category of cross-border investment in which an investor resident in one economy establishes a lasting interest in and a significant degree of influence over an enterprise resident in another economy. Ownership of 10 percent or more of the voting power in an enterprise in one economy by an investor in another economy is evidence of such a relationship. FDI is a key element in international economic integration because it creates stable and long-lasting links between economies. FDI is an important channel for the transfer of technology between countries, promotes international trade through access to foreign markets, and can be an important vehicle for economic development. The indicators covered in this group are inward and outward values for stocks, flows and income, by partner country and by industry and FDI restrictiveness (Foreign Direct Investment (FDI), n.d.).

Employment means the state of having a job or being employed. If one needs to employ someone, they must pay them. The one who employs is called the employer, and the one who is getting paid for providing services is the employee. Dakin (1989), Employment is a relationship between two parties regulating the provision of paid labor service. Usually based on a contract, one party, the employer, which might be a corporation, a not-for-profit organization, a co-operative, or any other entity, pays the other, the employee, in return for carrying out assigned work. Employee work in return for carrying out assigned work. Employees work in return for wages, which can be paid on the basis of an hourly rate, by piecework or an annual salary, depending on the type of work an employee does, the prevailing conditions of the sector and the bargaining power between the parties. Employees in some sectors may receive gratuities, bonus payment or stock options. In some types of employment, employees may receive benefits in addition to payment. Benefits may include health insurance, housing, and disability insurance. Employment is typically governed by employment laws, organization or legal contracts.

Economic growth refers to an increase in the size of a country's economy over a period. The size of an economy is typically measured by the total production of goods and services in the economy, which is called gross domestic product (GDP). Economic growth can be measured in ‘nominal’ or ‘real’ terms. Nominal economic growth refers to the increase in the dollar value of production over time. This includes changes in both the volume of production and the prices of goods and services produced. Economists normally talk about real economic growth – that is, increases in the volume produced only, which takes away the effect of prices changing. This is because it better reflects how much a country is producing at a given time, compared with other points in time. (Australia, 2023).

2.2 Exports and Economic Growth

There are many scientific studies that show the impact of exports on economic performance, including economic growth. Anwer and Sampath (2000) investigated the relationship between exports and economic growth in 96 countries using time series analysis and Granger causality approach for the

period 1960-1992. The main goal of their research is to find out the effect of exports from 96 countries on economic growth in the years 1960-1992. They confirmed that the variables were individually stationary using a unit root test before analyzing the causality test. Finally, they concluded that the export-GDP ratio has a positive two-way correlation in only 8 countries and a positive one-way correlation in 9 countries. The rest cannot testify in their investigation.

Babalola, Dogon-Daji and Saka (2012) concluded that there is a significant relationship between FDI, exports and economic growth in Nigeria between 1960 and 2009. They used a co-integration and error correction model in their study.

Caleb, Mazanai and Dhoro (2014) analyzed the relationship between international trade and economic growth in Zimbabwe between 1975 and 2005. The purpose of this study is to investigate the long-term relationship. This result showed the integration of economic growth and trade, but the correlation is supported by the stability of macroeconomic policies.

Chemeda (2001) traced the impact of exports on the economic development of Ethiopia from 1950 to 1986. The purpose of this analysis was to examine the existence and extent of the relationship between economic growth and exports in Ethiopia. The study examines the relationship between real gross domestic product (GDP) and exports per capita over a 36-year period (1950-1986) using annual time series data. That study estimated economic growth through the impact of exports on the Ethiopian economy using the Cobb-Douglas model. To investigate this relationship, this study used time series econometric tools such as error correction mechanism, cointegration test and unit test. He concluded that economic growth progression and real exports have a positive relationship in the long run.

Nguyen (2017) found that FDI has a significant positive impact on economic growth of Vietnam in the long run while the effect of export is negative. But there is no effect of export and FDI on economic development in the short run. This analysis used the time series data and the ARDL bounds testing approach to analyze the linkage among the variables from 1986 to 2015.

In an article entitled “Impact of Imports, Exports, and Foreign Direct Investment on the GDP Growth,” Atif (2012) studied the same issues for the period 1980-2009 in Pakistan. He points out in his article that the GDP growth is an economic growth index as a dependent variable. In this study scatterplot matrices are used to analyze the relationship of variables. His findings show that as it was expected, the coefficients of all four statistical coefficients are significantly positive. The impact of foreign investment on economic growth of Pakistan had been low and insignificant. This shows that there have not been sufficient policies in this regard for benefiting from foreign investment. However, this has not been considered a problem in the period under question. Exports showed a significant impact on the increase of economic growth. Also, import of different kinds of services and goods showed a significant impact on increase of economic growth.

2.3 Imports and Economic Growth

Tehrachian (2006) used the Rati Ram model to analyze the impact of import types on economic growth. In his article, the researcher showed that despite the increase in imports of the three mentioned goods, especially after the implementation of development plans, the composition of imported goods is changing in favor of intermediate and investment goods. In addition, it talks about the direct effect of investment and intermediate goods import and the indirect and diminishing effect of consumer goods import on the economic growth index of Iran.

Kayha (2011) studied that the causality between the economic growth and foreign trade for the period 1980-2009 in Turkey. He clearly points out imports is the main determinants of Turkey’s economic growth but exports have no significant effect.

Kogid et al. (2011) investigated the role of imports in economic growth in Malaysia in a paper titled. They used the systematic cointegration method and the Engle-Granger two-stage causality test, the Yvanson method and the Granger Toda-Yomada method to analyze the relationship between these two variables in the time series from 1970 to 2007. The results show that there is no relationship

between imports and economic growth. The results also show that imports affect economic growth indirectly, while economic growth affects imports directly.

Kayha (2011) investigated the causal relationship between Turkish economic growth and foreign trade between 1980 and 2009. He clearly emphasizes that imports are the main driver of Turkey's economic growth, but exports do not have a significant impact.

Atif (2012) studied the same issues in Pakistan from 1980 to 2009. He points out in his article that GDP growth is an index of economic growth and a dependent variable. This study uses scatterplot matrices to analyze the relationship between variables. His findings show that, as expected, the coefficients for all four statistical coefficients are significantly positive. The impact of foreign investment on Pakistan's economic growth was small and insignificant. This shows that there was not enough policy in this regard to take advantage of foreign investment. However, this was not considered a problem during this period. Exports had a significant impact on the acceleration of economic growth. The import of various services and goods also had a significant impact on the acceleration of economic growth.

2.4 Foreign Direct Investment (FDI) and Economic Growth

Many studies have tried to examine the relationship between FDI and macroeconomic outcomes, including GDP, but the results are quite inconsistent. Many publications mentioned that FDI affects growth in different ways, others described negative effects of FDI on economic growth, and others showed insignificant results. Balasubramanyam, Salisu and Sapsford (1996) argued that FDI can accelerate the growth of recipient countries by improving foreign trade and ensuring stability of macroeconomic variables. Further, they concluded that FDI inflows can effectively boost economic growth than local investments in developing economies which implement export promotion policies. For nations with high institutional competence, FDI has a significant beneficial influence on their growth. (Olofsdotter,1998). When FDI is directed toward the mining industries, it has favorable impact on Tanzania's GDP (Usiri, 2014).

Sadik and Bolbol (2001) investigated that FDI had a positive effect on GDP growth and domestic investment in six Arab countries between 1978 and 1998. In addition, Bengoa (2003) found a positive relationship between FDI and GDP in 18 South American economies. Sokang (2018) investigated the beneficial effects of FDI on economic growth in Cambodia, looking at the period 2006-2016. the data of the year. In addition, Akiri, Vehe and Ijuo (2016) used the VECM and determined the positive impact of FDI on Nigeria's GDP growth over the period. from 1981 to 2014.

Stoneman (1975) studied the effect of FDI on the growth of emerging economies from 1945 to 1970. He concluded that foreign direct investment was detrimental to economic growth. The effect of FDI on Nigeria's GDP was negative and insignificant using the error correction model (ECM) (Akinlo, 2004). Rahman (2015) produced insignificant results on the effect of FDI on GDP growth in Bangladesh.

2.5 Employment and Economic Growth

Several authors have estimated employment elasticity (a measure of the relationship between employment and economic growth) for serval countries. Bolthoand Glyn (1995) found that the elasticity of employment in relation to product growth is of the 0.5-0.6 in OECD countries. International Labor Organization report that the response of employment growth to GDP growth has not weakened overall in industrialized countries.

In an empirical study on the relationship between employment and economic growth in sub-Saharan Africa, Yogo (2008) suggests that employment problems in sub-Saharan Africa are largely qualitatively that quantitative. According to him, the reason for the observed weak employment development was not found in the rigidity of the labor market, but the increase in the number of the working poor can be explained by the weakness of economic growth over time.

Walterskirchen (1990) analyses the relationship between economic growth, employment and the laber market in the European Union (EU). He found the the relationship between GDP growth and changes in unemployment is

divided into two parts, viz. changes om employment and unemployment rate regulated by economic factors and changed regulated by demographic effects and labor market policy. He used time series analysis to individual EU countries, while panel data were used for all countries. The result of the study showed a strong positive correlation between GDP growth and the change in the employment rate.

Sawtelle (2007) estimated and compared the elasticities of each of fourteen US industrial sectors with real GDP growth over the ten-year period 1991-2001. In addition, the study estimated two employment definition models linked employment to real GDP, and the other linked a number of other macroeconomic variables affecting employment along with real GDP. Because the demand for labors is a derived demand, for example, an increase in real GDP increases the derived demand for workers. The results of Sawtelle (2007) are compatible with the findings of Pandalino and Vivarelli (1997). In general, studies have used econometric studies to estimate the flexibility of employment relative to GDP, and to examine gender employment differences in cyclical fluctuations.

2.6 Overview of Cambodia's Economic Growth

In 2022, Cambodia was the number 103 economy in the world in terms of GDP (current US$), the number 69 in total exports, the number 63 in total imports, the number 150 economy in terms of GDP per capita (current US$) and the number 91 most complex economy according to the Economic Complexity Index (ECI).

Cambodia's economy grew at an average annual rate of 7.6 percent between 1995 and 2019. In 2022, Cambodia exported $22.16B and imported $16.18B, resulting in a positive trade balance of $3.97B. The GDP growth rate of Cambodia was 5.2 percent. But in 2000, Cambodia exports was $1.82B and imports was $2.25B. There was a negative trade balance of $435M. The GDP growth rate of Cambodia was 10 percent. From 2000 to 2022, while exports have increased from $1.82B to $22.16B, the GDP growth rate declined from 10 to 5.2 percent.

Moreover, In 2022 the top exports of Cambodia are Knit Swearers ($3.09B), Trunks and Cases ($3.01B), Knit Women's Suits ($2.07B), Non-Knit Women's Suits (1.86), and Cassava ($1.3B), exporting mostly to United States ($13B), Vietnam ($3.67B), Germany ($2.41B), Japan ($1.92B) and Canada ($.184B). The top imports of Cambodia are Gold ($10.3B), Refined Petroleum ($3.46B), Light Rubberized Knitted Fabric ($2,52B), Car ($836M), and Semiconductor Devices ($742M), importing mostly from China ($13.7B), Thailand ($8.63B), Singapore ($8.2B), Vietnam ($5.74B) (Cambodia (KHM) Exports, Imports, and Trade Partners | the Observatory of Economic Complexity, n.d.).

Cambodia foreign direct investment for 2022 was $3.57B, a 2.74% increase from 2021. Cambodia foreign direct investment for 2021 was $3.48B, a 3.9% decline from 2020. Cambodia foreign direct investment for 2020 was $3.62B, a 1.05% decline from 2019. Cambodia has performed well on foreign direct investment (FDI) so far, three times better than predicted, which scored 3.6, becoming the top 25 in the world. The FDI reached an all-time high of 14.1% in 2012 and nearly reached the same level again in 2020, which was 14%.2 However, it declined and has been slow to recover after the outbreak of the Covid-19 global pandemic. At any rate, the forecast GDP growth rate will account for 6.2%, the 3rd highest in the region. Cambodia has stated its strong commitment to promoting the sustainability dimension during the pandemic. The new Law on Investment in the Kingdom of Cambodia (LoI) was introduced in October 2021 to create an open, transparent, predictable, and favorable legal environment to attract and promote domestic and foreign investment in Cambodia. The law provides many benefits to investors, including income tax exemption and customs duties incentives. (Layheng, 2023).

Total employment was 8,888,364 in 2021, corresponding to 79.2 percent employment relative to the population. By broad sector group, agriculture accounted for 34.5 per cent of total employment, industry a further 27.9 per cent and services, 37.6 per cent in 2019. In 2021, there were approximately 57,271 unemployed people in the country, which corresponds to a total unemployment rate of 0.6 percent. The unemployment rate for women was estimated at

0.7 percent, for men at 0.5 percent. The youth unemployment rate was estimated at 1.8 percent. Having a job does not, however, guarantee quality employment. A total of 53.0 per cent of the total employed population were in wage and salaried employment in 2019. Wage and salaried employment is associated with higher degrees of job security, more regular incomes as well as greater access and eligibility to social protection as well as coverage by employment regulation, than those in self-employment. Accordingly, the remaining 47.0 per cent of total employment, who are classified as being self-employed, encompass employers, own-account workers, and contributing family workers.

2.7 Methodology Review

Quantitative analysis is the process of collecting and evaluating measurable and verifiable data, such as revenue, market share and earnings, to understand a company's behavior and performance. It includes three main techniques: regression analysis, linear programming, and data mining. Quantitative analysis is used in various fields, such as project management, marketing, finance, etc. It helps in evaluating performance, evaluating financial instruments, and making forecasts.

Awokuse, (2007) conducted a study on the impact of exports and imports on economic growth in a selected number of Eastern European countries namely the Czech Republic, Bulgaria and Poland. Using neoclassical economic growth model co-integrated Vector Auto-Regressive (VAR) models attempted to find empirical evidence supporting a positive and significant influence of exports and imports on economic growth in those countries. Ramos et al. (2001)

Bokosi, (2015) employed the Vector Autoregressive (VAR) approach in Malawi on an annual secondary data from 1980 to 2013 to reveal the empirical evidence that exist between economic growth and trade where export trade was disaggregated into services and goods exports to estimate two models. The relationship between growth and export of services was investigated in the first model whereas the relationship between growth and goods export was estimated in the second model. No evidence for a long-run relationship between export of services and goods on economic growth was found but the study found out that

export of goods has an affirmative effect on economic development in the short-run. Affirmation of the presence of unidirectional causality based on the Granger causality test moving from goods export to economic development and the existence of unidirectional causality from goods to service export was found.

2.8 Gap of Literature Studies

To identify gaps in the literature on the impact of export on economic growth in Cambodia, it's important to analyze existing studies, understand their limitations, and pinpoint areas that have not been fully explored or need further research. Below are common gaps that might be found in the literature, along with examples of references to contextualize these gaps.

Many studies concentrate on how exports affect economic growth generally rather than making a distinction between different export sectors (e.g., agricultural, manufacturing, services). Comprehending the distinct ways in which various sectors contribute to economic growth is essential for focused policy formulation. Research such as Sok, Sotharith, and Yu (2011) have a tendency to combine data without thoroughly examining the effects on certain sectors, which leaves out subtleties in the ways in which various sectors support growth.

Furthermore, despite the fact that there is proof of the link between exports and growth, not much research has been done on the subject of export diversification's impact on growth resilience and economic stability. Given Cambodia's extreme dependence on a small number of export goods (clothing, for example), further study is necessary in this crucial field. While Thangavelu and Narjoko (2014) highlight export-led growth, they do not sufficiently examine the possible advantages or difficulties of diversification.

Stated differently, the gap is associated with the longitudinal research. A picture of the export-growth connection at a certain moment in time is provided by the cross-sectional nature of many of the current research. Longitudinal studies are necessary to monitor the effects over a prolonged duration and offer

valuable perspectives on the sustainability of export-driven growth in the long run. Studies such as Phoumin and Ryota (2008) examine data over brief

Another gap is that SMEs' contribution to export-led development is frequently disregarded. Since SMEs are the foundation of many countries, knowing how they affect exports and economic expansion might be quite insightful. Studies like those by Menon and Warr (2013) underestimate the contribution of SMEs to economic growth by concentrating mostly on exports and foreign direct investments.

Following that further void, there is less research on the ways in which certain trade agreements, alliances, and policies impact Cambodia's export performance and, by extension, its economic development. A more thorough examination of these variables is required. Research such as Athukorala (2006) examine overall export patterns but do not go into great detail about the impacts of particular trade agreements, such those in ASEAN or bilateral agreements with important trading partners.

Next, the research frequently ignores the negative effects of export-driven growth on the environment and society. More study is required to determine how rising exports impact social justice and environmental sustainability in Cambodia. While studies such as Hill and Menon (2014) concentrate on economic results, they seldom ever take into account the wider social or environmental effects of export-led growth.

Finally, there has been little research done on how Cambodian exports are included into global value chains (GVCs). Gaining knowledge on the relationship between GVC involvement and economic growth may provide fresh perspectives, particularly when considering the dynamics of global commerce. While some study has been done on GVCs, such as that done by Rasiah (2015), it does not go into great detail on Cambodia's unique place in these chains or how it affects economic growth.

2.9 Conceptual Framework (IVs and DV)

Based on the literature review exports, imports, direct foreign investment (FDI), and employment have been considered as independent variables, while GDP has taken as dependent variable. In the case, the economic model was tied to neoclassical theory expressed in the following function: Y= f (EXT, IMT, FDI, EPM), where Y is a level of GDP, EXT is export quantity, IMT is import quantity, FDI is direct foreign investment and EMP is employment, the following functional model: GDP is Gross Domestic Product = μ0 + μ1EXT + μ2IMT + μ3FDI + μ4EPM + ε, Where:

μ0: Constant

μ1 to μ3: Shift Parameters

ε: Error term

To have the same unit of measurement for the variables, the log-linearity formula is utilized, and the mathematical form is as follows:

$$LGDP = \mu_0 + \mu_1 LEXT_t + \mu_2 IMT_t + \mu_3 FDI_t + \mu_4 EMP_t + \varepsilon_t$$

L: log

Considering the Keynesian theoretical explanation about the change in exports which depends on expected output or change in output, exports will be influenced by the volume of output. That volume of output will be determined through the equilibrium mechanism of supply of and demand for output in the market. It means that the export sector will be directly influenced by the market equilibrium mechanism of output.

2.10 In Case of Cambodia Need and Research

Over the last 20 years, Cambodia's economy has grown quickly; up to the COVID-19 epidemic, GDP growth had been around 7% annually. The GDP has been growing gradually since the country's reopening in November 2021; the World Bank projects growth of 5.5% in 2023. Although Cambodia's GDP per person is expected to reach $1,700 in 2022, the nation remains mostly dependent on aid from abroad. Cambodia is still mostly an agrarian nation, with 75% of its people residing in rural regions, despite its expanding sectors. There has been consistent trade growth in Cambodia since the country's 2004

entry into the WTO. Approximately 40% of all of Cambodia's exports are sent to the US, making it the country's top export destination overall. Cambodia exported $12.2 billion in 2022 (Cambodia - Market Overview, 2024).

Cambodia attracts foreign investment from China, Japan, the UK, Korea, Malaysia, Thailand, Singapore, and Vietnam, with total FDI valued at $47 billion from 1994 to 2022. The Cambodian government provides incentives to foreign investors, including 100% foreign ownership of companies, corporate tax holidays, duty-free import of capital goods, special depreciation on capital expenditure, and no restrictions on capital repatriation. The Council for the Development of Cambodia reports $1.4 billion in U.S. FDI.

Cambodia is a member of the Regional Comprehensive Economic Partnership (RCEP) and has bilateral free trade agreements (FTAs) with the People's Republic of China and the Republic of Korea. Cambodia has accepted the ASEAN Framework Agreement on Mutual Recognition Arrangements as a member of ASEAN. The U.S.-Cambodia Trade and Investment Framework Agreement (TIFA), which was signed in 2006, offers a venue for discussing bilateral trade and investment problems as well as facilitates and encourages more trade and investment between the two nations. Meetings between the two nations are still held to further the TIFA agenda (Getting Started with Business in (Country), 2023).

2.11 Conclusion

The studies mentioned above propose that exports can either have a positive or negative impact on enhancing an economy and stimulating international trade. Most of the countries used unit root test, Granger causality test and cointegration test to find out the relationship between economic growth and exports. To analyze the relationship between exports and economic growth in Cambodia, this study examines the empirical evidence on the impact of exports on economic growth performance.

CHAPTER III

RESEARCH METHODOLOGY

Introduction

The aim of this chapter is to explain the methodology used in the present study. For this purpose, the chapter is divided into five sections. The first section explains the type of analysis carried out in the study, while in the second, third, and four sections, types of analysis, types and sources of data, and statistical tools are presented. The procedure for collecting data is given in the five sections of this chapter. Subsequently, coverage of the study and procedure of analyzing the data respectively. At the end of this chapter, a concluding remark is given.

3.1 Type of Analysis

The type of analysis carried out in the study is quantitative in nature. The factor sectors over the period 1993 to 2022 and the role of economic growth of Cambodia considering relevant indicators during the study period have been analyzed quantitatively based on the secondary information. Finally, quantitative analysis has been done to role of exports in economic growth in the study area. Also, time Series analysis involves studying data collected over successive time intervals. It helps identify trends, patterns, and fluctuations in exports and economic indicators, offering insights into long-term impacts. It provides a deeper understanding of the subjective experiences and perceptions related to the impact of exports.

3.2 Types and Sources Data

The present study is based on both primary and secondary data. To analyze impact of exports on economic growth over the period 1993 to 2022, and its role in economic growth of Cambodia, secondary data have been used.

Secondary data have been used. Moreover, for the purpose of analyzing the existing trend of the exports, imports, foreign direct investment, employment and GDP, secondary information has been gathered from various sources. However, to discuss the role of exports in economic development, primary data collected through a field survey have been considered for further analysis in

ARDL model. Several publications of the Ministry of Economic and National Institute of Statistics of the Ministry of Planning, Royal Government of Cambodia and World Bank have been referred for necessary information. Additionally, empirical studies from various countries serve as another valuable source of secondary data.

The following data was used for the primary analysis from 1993 to 2022:

Table 1: Data on the Variables (source from World Bank)

No	Year	GDP (USD)	EXT (USD)	IMT (USD)	FDI (USD)	EMP (PP)
1	1993	2,533,727,592	406,842,505	827,697,458	54,124,000	4,395,150
2	1994	2,791,435,272	719,965,852	1,079,617,531	68,900,000	4,690,509
3	1995	3,441,205,693	1,073,111,830	1,603,001,243	150,800,000	4,797,344
4	1996	3,506,695,720	889,438,539	1,535,847,164	293,600,000	4,939,524
5	1997	3,443,413,389	1,157,570,060	1,560,476,055	203,700,000	5,060,989
6	1998	3,120,425,503	974,763,068	1,384,886,253	115,871,733	5,271,512
7	1999	3,517,242,477	1,426,037,338	1,886,392,173	102,225,822	5,489,200
8	2000	3,654,031,716	1,821,397,245	2,256,850,530	118,308,566	5,628,400
9	2001	3,984,000,517	2,093,243,559	2,454,136,530	146,481,995	5,767,446
10	2002	4,284,028,483	2,374,299,969	2,753,379,504	130,956,364	5,906,250
11	2003	4,658,246,918	2,632,863,068	3,100,545,073	81,580,651	6,043,081
12	2004	5,337,833,248	3,395,176,611	3,784,818,547	131,416,229	6,174,653
13	2005	6,293,046,162	4,032,880,210	4,578,016,313	379,180,191	6,299,980
14	2006	7,274,595,707	4,989,881,265	5,530,235,561	483,209,383	6,420,997
15	2007	8,639,235,913	5,643,664,492	6,301,646,908	867,288,539	6,537,059
16	2008	10,351,914,177	6,784,981,062	7,016,217,770	815,180,218	6,640,929
17	2009	10,401,851,768	5,119,870,858	5,816,477,501	928,393,617	6,724,526
18	2010	11,242,275,288	6,080,135,325	6,691,507,416	1,404,315,449	6,789,462
19	2011	12,829,541,141	6,938,312,829	7,633,716,515	1,538,883,425	6,837,902
20	2012	14,054,443,213	8,136,084,083	8,813,214,288	1,988,102,945	6,865,596
21	2013	15,227,991,395	9,500,429,495	10,303,038,305	2,068,470,774	7,112,623
22	2014	16,702,610,842	10,456,414,665	11,192,212,102	1,853,471,158	7,368,200
23	2015	18,049,954,289	11,140,147,277	11,939,258,369	1,822,804,151	7,620,595
24	2016	20,016,747,858	12,266,568,329	13,144,698,877	2,475,915,854	7,874,603
25	2017	22,177,200,588	13,457,559,504	14,216,875,346	2,788,084,322	8,131,979
26	2018	24,571,753,583	15,135,150,382	15,554,628,992	3,212,633,447	8,386,085
27	2019	27,089,390,033	16,549,259,592	16,921,449,044	3,663,032,999	8,636,531
28	2020	25,872,797,892	16,131,785,115	15,948,088,861	3,624,644,990	8,690,980
29	2021	26,961,061,152	17,997,711,354	16,812,106,052	3,483,461,606	8,888,364
30	2022	29,504,829,319	20,162,199,555	16,183,953,609	3,578,831,296	9,020,278

3.3 Statistical Tools

The secondary data collected for the purpose of the study have been processed and tabulated keeping the objectives of the study in mind. The interrelationship among the data forms the basis for tabulation. Simple statistical calculations, such as multiple regression. In addition, relevant statistical tools have been used in the study to accomplish the study objectives. To assess the economic growth of each sector over the period 1993 to 2022 in terms of inflows exports, imports, foreign direct investment and employment in economic growth. Referring to the Keynesian theoretical explanation of how changes in exports depend on predicted output or changes in output. The market's equilibrium mechanism between supply and demand for output decides that amount of production. It implies that the output market equilibrium mechanism has a direct impact on the export industry. The economic model was tied to neoclassical theory expressed in the following function: Y= f (EXT, IMT, FDI, EPM), where Y is a level of GDP, EXT is export quantity, IMT is import quantity, FDI is direct foreign investment and EMP is employment, the following functional model: GDP is Gross Domestic Product = $\mu 0 + \mu 1EXT + \mu 2IMT + \mu 3FDI + \mu 4EPM + \varepsilon$, Where:

$\mu 0$: Constant

$\mu 1$ to $\mu 3$: Shift Parameters

ε: Error term

To have the same unit of measurement for the variables, the log-linearity formula is utilized, and the mathematical form is as follows:

$$LGDP = \mu 0 + \mu 1LEXTt + \mu 2IMTt + \mu 3FDIt + \mu 4EMPt + \varepsilon t$$

L: log

3.3.1 Serial Description Statistics

Descriptive statistics summarize and organize characteristics of a data set. A data set is a collection of responses or observations from a sample or entire population. For the present study, the serial descriptive is carried out to find the

comparison of mean, standard deviation, Skewness and Kurtosis and Jaque Bara and so on.

3.3.2 Unit root test

To begin the study, the mixed Dickey Fuller (ADF) (1979, 1981) and Phillips-Perron (PP) (1988) are used to verify the unit root test of series variables. Both the levels and the initial differences of the series variables are tested using unit roots. Level I (0) and initial difference I (1) both have stationary combinations, according to the findings of the ADF and PP tests for stationarity. This study has examined the effect of special economic zones on economic growth in Cambodia by using the Autoregressive Distributed Lag (ARDL) bounds testing technique, which is based on the results of stationary.

3.3.3 Autoregressive Distributed Lag ARDL

In the basic form, an ARDL regression model looks like this:

1. **Autoregressive terms (AR)**

$$Yt= \alpha 1+ \alpha 2Yt-1+ \alpha 3Yt-2+ \varepsilon t$$

2. **Distributed lag terms (DL)**

$$Yt=\beta 1+\beta 2Xt-1+\beta 3Xt-2+\mu t$$

3. **ARDL**

$$Yt= \alpha 1+ \alpha 2Yt-1+ \alpha 3Yt-2+\beta 2Xt-1+\beta 3Xt-2+\omega t$$

3.3.4 Bounds Co-integration Statistics

If the calculated F-value is less than I(0) we cannot reject null hypothesis that there is no long run relationship and co-integration does not exist. Estimate Auto regressive distributed Lag (ARDL) Model. If F-value is higher than I(1) we reject null hypothesis and include that long run relationship and co-integration exist. Estimate Error Correction Model (ECM). If F-value is between I(0) and I(1) , test is considered inconclusive . Further, Short-run relationship is performed through Wald test.

3.3.5 Granger Causality Statistics

A statistical hypothesis test known as the Granger causality test is used to assess if a time series variable (employment, exports, imports, foreign direct investment inflows, and GDP) has Granger causality or not and is thus useful in predicting another.

3.3.6 Diagnostic Statistics

Before the present study submits the findings to the Research Science, the current study needs to verify that the result didn't violate any regression assumptions. Autoregressive Distributed Lag ARDL is an analysis that assesses whether one or more predictor variables explain the dependent (criterion) variable. The Diagnostic of ARDL model has four key assumptions: Normality, Serial Autocorrelation (LM) test, Heteroscedasticity and Stability of diagnostics.

3.3.7 Procedure of data collecting

In the current study, quantitative and graphic analysis have both been performed to analyze the data. The goals of the study are taken into consideration when collecting, processing, and tabulating data that has been gathered from a number of different sources. The data has been processed using MS Excel and Econometric Views (E-Views, Version 2010). Autoregressive Distributed Lag (ARDL) analysis has been done to assess the study's null assumptions.

3.4 Coverage of the Study

This study covers a wide range of economic parameters, including GDP, exports, imports, foreign direct investment, and employment. By examining trends exports, imports, trade volume and trade balance, researchers seek to identify the extent to exports has acted as a catalyst for economic growth in Cambodia.

3.5 Concluding Remarks

Thus, the above discussions clearly explain the methodology adopted in the present study. To conclude, the study has used secondary data, it has employed quantitative analysis by using both simple and multiple regression.

Finally, the results of the study have been presented through tables and graphs. Statistical methods, Autoregressive Distributed Lag (ARDL) including regression analysis and time-series modeling, are applied to analyze the collected data, discerning trends, patterns, and correlations between exports dynamics and economic performance indicators. Overall, the methodology aims to provide a rigorous and holistic assessment of how exports contribute to economic growth in Cambodia, offering valuable insights for policymakers, businesses, and stakeholders involved in those sectors.

CHAPTER IV
DISCUSSION OF FINDING

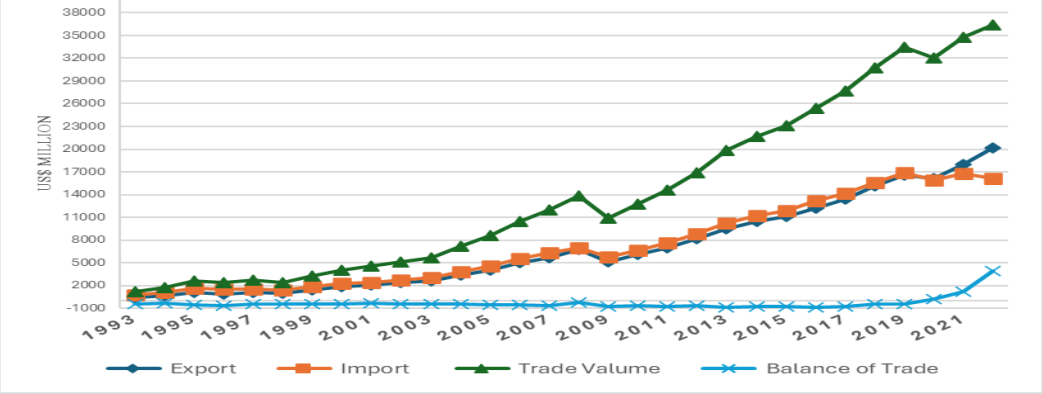
Introduction

The aim of this chapter is to examine the dynamic growth of Cambodia's exports sector and its involved contributions to the nation's economic development. Utilizing available data for the period 1993-2022, the analysis employs key indicators such as exports, imports, foreign direct investment, and employment to chart the sector's line. Additionally, GDP has been selected and considered as a value to drive economic development in the country. In the case, this chapter was divided into three sections. The first section analyzes the existing trend of exports in the period of 1993 to 2022 of Cambodia. The second section utilizes statistical tools for serial descriptive analysis, and econometrics, such as stationary check, ARDL, long-run and short-run bound, granger, and diagnostics check. The last one is conclusion remarked.

4.1 To analyze existing trends of Cambodia Exports and Import in the period of 1993 to 2022.

Figure 1 show that the value of foreign trade in Cambodia. In this figure, the value of exports, imports, total trade volume and balance of trade are represented for the period of 1993-2022.

Figure 2: Foreign Trade of Cambodia



Source: World Bank

Table 1 shows the value of total foreign trade of Cambodia during the period of 1993-2022. The table describes the exports steadily rising from 1993 to

2019. The value of exports grew from 406.84 US$ million to 16549.26 US$ million. Since 1994, the establishment of the Investment Law provided incentives for both domestic and foreign investors to participate in the Qualified Investment Project (QIP). In addition, several special economic zones were established and provide tax incentives and simplify administrative processes. Between 2008 to 2009, exports fell from 6784.98 US$ million to 5119.87 US$ million due to the global financial crisis, which triggered the European crisis, affecting EU imports. The exports value dropped from 16549.26 US$ million in 2019 to 16131.79 US$ million in 2020 due to the COVID-19 pandemic and partial suspension of preferential access to the EU market under the "Everything but Arms (EBA)" agreement. The exports increase from 2020 to 2022, the value of exports grew from 16131.79 US$ million to 20162.20 US$ million with the rise of Covid-19 vaccine, recovery Of the US economy and increasing close ties with the People's Republic of China.

Cambodia's trade balance of goods from 1993 to 2019. The trade balance is the value of exports minus the value of imports. A positive trade balance signifies a trade surplus, while a negative value signifies a trade deficit. In 2019, Cambodia's trade deficit amounted to around 372.19 US$ million. From 2020 to 2022, there will be changes in the trade balance, with a positive trade balance showing a trade surplus, while a positive price indicates an increase in trade around 3978.25 US$ million due to growth in textile exports and reopening from Covid-19 pandemic.

Table 2: Foreign Trade of Cambodia (US$ million)

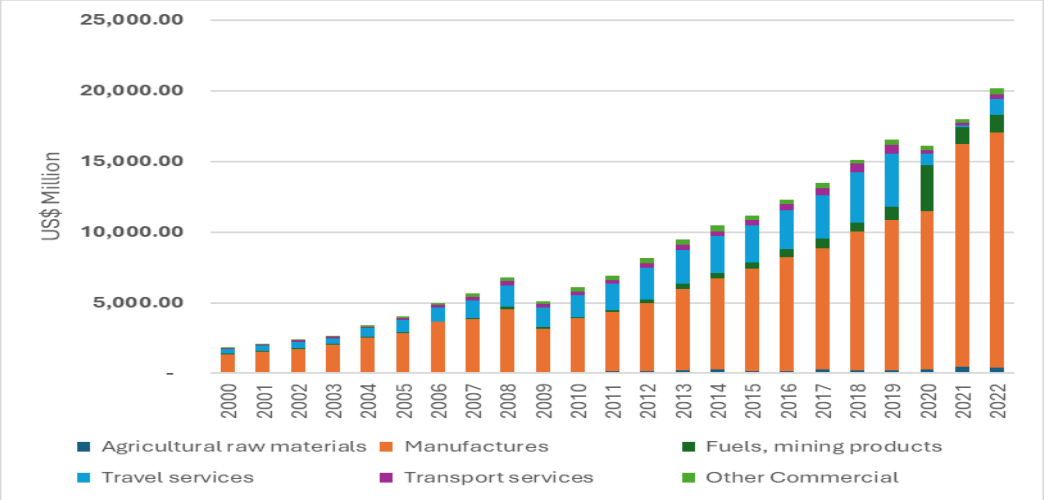
No	Year	EXT (USD)	IMT (USD)	TRADE (USD)	BALANCE OF TRADE
1	1993	406.84	827.70	1,234.54	(420.85)
2	1994	719.97	1,079.62	1,799.58	(359.65)
3	1995	1,073.11	1,603.00	2,676.11	(529.89)
4	1996	889.44	1,535.85	2,425.29	(646.41)
5	1997	1,157.57	1,560.48	2,718.05	(402.91)
6	1998	974.76	1,384.89	2,359.65	(410.12)
7	1999	1,426.04	1,886.39	3,312.43	(460.35)
8	2000	1,821.40	2,256.85	4,078.25	(435.45)
9	2001	2,093.24	2,454.14	4,547.38	(360.89)
10	2002	2,374.30	2,753.38	5,127.68	(379.08)
11	2003	2,632.86	3,100.55	5,733.41	(467.68)
12	2004	3,395.18	3,784.82	7,180.00	(389.64)

13	2005	4,032.88	4,578.02	8,610.90	(545.14)
14	2006	4,989.88	5,530.24	10,520.12	(540.35)
15	2007	5,643.66	6,301.65	11,945.31	(657.98)
16	2008	6,784.98	7,016.22	13,801.20	(231.24)
17	2009	5,119.87	5,816.48	10,936.35	(696.61)
18	2010	6,080.14	6,691.51	12,771.64	(611.37)
19	2011	6,938.31	7,633.72	14,572.03	(695.40)
20	2012	8,136.08	8,813.21	16,949.30	(677.13)
21	2013	9,500.43	10,303.04	19,803.47	(802.61)
22	2014	10,456.41	11,192.21	21,648.63	(735.80)
23	2015	11,140.15	11,939.26	23,079.41	(799.11)
24	2016	12,266.57	13,144.70	25,411.27	(878.13)
25	2017	13,457.56	14,216.88	27,674.43	(759.32)
26	2018	15,135.15	15,554.63	30,689.78	(419.48)
27	2019	16,549.26	16,921.45	33,470.71	(372.19)
28	2020	16,131.79	15,948.09	32,079.87	183.70
29	2021	17,997.71	16,812.11	34,809.82	1,185.61
30	2022	406.84	16,183.95	36,346.15	3,978.25

Source: World Bank

Figure 3: Evolution of Merchandise Exports and Commercial services Exports in Cambodia

Figure 3 show that the evolution of exports in Cambodia. In this figure, the evolutions of exports such as merchandise and commercial services. for the period 2000-2022.



Source: Author's collection

Table 3 shows the evolution of exports in Cambodia during the period of 2000-2022. The table describes the merchandise exports and commercial service exports from 2000 to 2022. The merchandise exports are agricultural products,

manufactures, fuels and mining products. The commercial service exports are travel, transport, and other commercial services. In 2022, the value of merchandise exports 18,329.21 US$ million **(**91% of total exports) including the value of agricultural raw materials 397.29 US$ million (2% of total exports), the value of manufactures 16,642.27 US$ million (83% of total exports), and the value of fuels and mining products 1,289.68 US$ million (6% of total exports). Moreover, the commercial service exports 1832.96 US$ million (9% of total exports) including the value of travel services 1,118.94 US$ million (6% of total exports), the value of transport services 290.81 US$ million (1% of total exports), and the value of other commercial 423.21 US$ million (2% of total exports).

The table describes the exports steadily rising from 2000 to 2019. The value of merchandise exports grew from 1,393.93 US$ million (77% of total exports) to 11,769.39 US$ million (71% of total exports) because of foreign and local investors were encouraged to engage in the Qualified Investment Project (QIP) by the creation of the Investment Law. Furthermore, several special economic zones were created, offering tax breaks, and streamlining administrative procedures. The value of commercial services exports grew from 427.47 US$ million (23% of total exports) to 4,779.87 US$ million (29% of total exports) because of growth of domestic and foreign tourism contributing to exports.

The commercial exports value dropped from 4,779.87 US$ million in 2019 to 1,832.96.96 US$ million in 2022 (9% of total exports) due to a collapse of travel service induced by the COVID-19. Otherwise, the merchandise exports value from 11,769.39 US$ million in 2019 to 18,329.24 US$ million in 2022 (91% of total exports) because of the rise of Covid-19 vaccine, recovery Of the US economy and increasing close ties with the People's Republic of China.

Cambodia's evolution exports from 2000 to 2022. The total exports are entirely dependent on merchandise exports due to the increase in investors and the establishment of special economic zones and Commercial services exports also contribute in total exports.

Table 3: Evolution of Merchandise Exports and Commercial services Exports in Cambodia (US$ million)

No	Year	Agricultural raw materials	Manufactures	Fuels, mining	Travel services	Transport services	Other Commercial
1	2000	40.05	1,333.24	20.65	303.24	102.03	22.19
2	2001	36.83	1,499.16	33.29	379.95	104.42	39.59
3	2002	38.15	1,701.73	30.15	453.59	101.16	49.52
4	2003	43.92	2,007.05	34.31	388.75	92.16	66.67
5	2004	45.73	2,514.09	30.11	603.70	110.29	91.25
6	2005	46.06	2,824.93	41.91	840.94	143.06	135.98
7	2006	59.78	3,572.20	40.42	986.19	176.93	154.36
8	2007	61.55	3,802.34	52.11	1,230.06	269.12	228.48
9	2008	42.55	4,499.30	178.93	1,488.03	336.78	239.39
10	2009	37.81	3,105.47	108.39	1,377.39	275.33	215.48
11	2010	91.49	3,843.86	65.43	1,556.74	245.15	277.47
12	2011	166.04	4,210.09	124.53	1,860.61	258.50	318.54
13	2012	172.26	4,807.17	230.60	2,257.48	299.71	368.85
14	2013	225.61	5,735.63	389.34	2,398.58	322.75	428.52
15	2014	270.02	6,425.12	434.94	2,577.62	351.40	397.32
16	2015	166.81	7,245.74	412.86	2,629.32	367.42	317.99
17	2016	179.63	8,053.59	575.33	2,754.40	409.92	293.71
18	2017	272.82	8,603.26	664.35	3,093.52	501.56	322.05
19	2018	235.20	9,811.26	608.10	3,585.12	587.25	308.22
20	2019	198.41	10,663.13	907.85	3,748.32	642.05	389.50
21	2020	254.66	11,229.29	3,242.60	813.37	241.81	350.07
22	2021	444.08	15,766.93	1,200.43	164.21	170.17	251.89
23	2022	397.29	16,642.27	1,289.68	1,118.94	290.81	423.21

Source: Author's collection

4.2 The Role of Export in Economic Growth

Exports are a driving force for economic growth and development. Being a major contributor to employment creation, it leads to the reduction of poverty and the promotion of socio-economic development of the nation. Today, the potential of the exports of goods and services contributing to economic and social development has been widely recognized around the world. Considering the case of Cambodia, to know the impact of exports sector on economic development of the country, exports, imports, foreign direct investment, and employment are taken as independent variables and gross domestic product (GDP) are considered as dependent variables. The results of the regression model used in this study are presented in the following sections.

4.2.1 Description Statistics

Descriptive statistics refers to a branch of statistics that involves summarizing, organizing, and presenting data meaningfully and concisely. It provides information on measures of central tendency (mean, median, mode), dispersion (range, variance, standard deviation) and normality (Kurtosis, Skewness). As a general guideline, a skewness value between −1 and +1 is considered excellent, but a value between −2 and +2 is generally considered acceptable. Values beyond −2 and +2 are considered indicative of substantial nonnormality." (Hair et al., 2022, p. 66). The value is often compared to the kurtosis of the normal distribution, which is equal to 3. When both skewness and kurtosis are close to zero, the pattern of responses is considered a normal distribution (George & Mallery, 2019)." (Hair et al., 2022, p. 66).

Table 4.3.1: Description Statistics

	LGDP	LEXT	LIMT	LFDI	LEMP
Mean	22.87858	22.19083	22.34587	20.19435	15.68794
Median	22.97001	22.40510	22.52402	20.54990	15.70088
Maximum	24.10782	23.72708	23.55185	22.02156	16.01499
Minimum	21.65296	19.82394	20.53416	17.80679	15.29601
Std. Dev.	0.820759	1.108182	0.942154	1.448517	0.203088
Skewness	0.041668	-0.411672	-0.301955	-0.173800	-0.109475
Kurtosis	1.520317	2.025507	1.787801	1.470336	2.102580
Jarque-Bera	2.745509	2.034413	2.292666	3.075871	1.066626
Probability	0.253408	0.361604	0.317800	0.214824	0.586658
Sum	686.3573	665.7250	670.3761	605.8305	470.6382
Sum Sq. Dev.	19.53570	35.61395	25.74195	60.84786	1.196102
Observations	30	30	30	30	30

Source: Author Own Computation

In Table 4.3.1 the detailed descriptive analysis is carried out. It exhibits that the average Gross Domestic Product (LGDP) is 22.87858 with standard deviation 0.820759. The average for Exports (LEXT) is 22.19083 with standard deviation is 1.108182. The average for Imports (LIMT) is 22.34587 with standard deviation is 0.942154. The average for Foreign Direct Investment

(LFDI) is 20.19435 with standard deviation is 1.448517. The average for Employment (LEMP) is 15.68794 with standard deviation is 0.203088.

To give insights of the distribution shape, the Skewness and Kurtosis are checked. In the present descriptive result, The Skewness of LGDP, LEXT, LIMT, LFDI and LEMP value (0.041668, 0.411672, -0.301955, -0.173800, and -0.109475) excellent because they stayed between−1 and +1. Further, the Kurtosis of LGDP, LEXT, LIMT, LFDI and LEMP values (1.520317, 2.025507, 1.787801, 1.470336, 2.102580) platykurtic (Dataset is light tails) because their values are smaller than 3. When both Skewness and Kurtosis are close to zero, the pattern of responses is considered a normal distribution (George & Mallery, 2019).

Another normal distribution check, based on the probability of Jarque-Bera value of LGDP, LEXT, LIMT, LFDI and LEMP (0.253408, 0.361604, 0.317800, 0.214824 and 0.586658) are larger than 5 percent. In this case, the null hypothesis (Ho): “The residual of LGDP, LEXT, LIMT, LFDI and LEMP are normal distribution” is accepted. Hence, we concluded that all residual of dependent variables in the model are normal distribution.

4.2.2 Unit Root Result

The analysis starts by checking the unit root test of series variables using the augmented Dickey Fuller (ADF) (1979, 1981) and Phillips-Perron (PP) (1988) Unit Root Tests are performed both, the levels and the first differences of the series variables. The results of both ADF and PP tests for stationarity has reported that the both, level I (0) and first difference I (1) have stationary combination. Bases on the result of stationary, The Autoregressive Distributed Lag (ARDL) bounds testing approach has been carried out in this study to examine the impact of exports on economic growth in Cambodia.

Table 4.3.2: The Result of Stationary

Variables	Order	ADF (t)	PP (t)	Result
Gross Domestic Product (LGDP)	I(0)	-3.984151***	-0.201999	Stationary and Non.
Exports (LEXT)	I(0)	-2.302897	-3.867323***	Stationary
Imports (LIMT)	I(0)	-4.670608***	-4.111459***	Stationary
Foreign Direct Investment (LFDI)	I(0)	-1.129370	-1.135902	Nonstationary
Employment (LEMP)	I(0)	-0.495121	-1.709965	Nonstationary
LGDP	I(1)	-3.984151***	-3.948539***	Stationary
LFDI	I(1)	-3.754936***	-3.870834***	Stationary
LEMP	I(1)	-4.722633***	-4.669252***	Stationary

Notes. ADF stands for Augmented Dickey-Fuller, PP for Phillips; denotes the first difference of variable under consideration. The symbol (*) indicates rejection of null hypothesis at 10%, (**) indicates rejection hypothesis at 5% and (***) indicates rejection of null hypothesis at the 1% level

4.2.3 Empirical Analysis

In the basic from, an ARDL regression model looks like this:

Autoregressive terms

$Yt=\beta 0+\beta 1Yt-1+\beta 2Yt-2+\beta 3Yt-3+\cdots+\beta pYt-p+\varepsilon t$

Distributed lag terms

$Yt=\alpha 0+\alpha 0Xt+\alpha 1Xt-1+\alpha 2Xt-2+\alpha 3Xt-3+\cdots+\alpha qXt-q+\varepsilon t$ where εt is "disturbance" term

Lags p and q can be different.

To run ARDL regression, the current study ensured that all time-series variables in the model should be stationary at either I (0) or I (1) or combination of I(0) and I(1). However, this model should not be used with I(2). If the time-series variables are found cointegrated with the help of bound test, both short run and long run models have to be specified. If the variables are not cointegrated,

we can use short run ARDL model. There should be optimal lag in DV and IV and error term should not be auto correlated.

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LGDP (-1)	0.896122	0.095002	9.432650	0.0000
LEMP	-0.303217	0.310473	-0.976628	0.3399
LEXT	0.147017	0.121211	1.212900	0.2386
LFDI	0.048492	0.028623	1.694169	0.1050
LFDI (-1)	-0.042662	0.025271	-1.688155	0.1062
LIMT	0.279569	0.153501	1.821290	0.0828
LIMT (-1)	-0.283284	0.072054	-3.931527	0.0008
C	3.873166	3.188425	1.214758	0.2379

R-squared	0.998709	Mean dependent var	22.92084
Adjusted R-squared	0.998279	S.D. dependent var	0.801377
S.E. of regression	0.033248	Akaike info criterion	-3.740664
Sum squared resid	0.023215	Schwarz criterion	-3.363479
Log likelihood	62.23962	Hannan-Quinn criter.	-3.622534
F-statistic	2320.754	Durbin-Watson stat	1.846979
Prob (F-statistic)	0.000000		

**Note: p-values and any subsequent tests do not account for model selection.*

The model summary is interpreted R-squared and Adjusted R. In the result of the model summary R-squared is 0.998709 that means the dependent variable is explained by the independent variables for 99.87%, i.e., only 0.13% (100% - 99.87 %) of the independent variable which is not mentioned in the model. Thus, 0.13% is called disturbance or error terms. Further, adjusted R-square is 0.998279 which is the value is moved closely R-square value (0.998709), so we can conclude that the independent variables and dependent variable have common arranged the model for 99.82%. The result shown that cointegrating equation when GDP is dependent variable. From here the model can derive the residual of the cointegrating equation when GDP is dependent variable. For ANOVA checks, the value of t-test is 2320.754, p-value is 0.000 less than 1 percent, it means significant at 1%. In the case, the null hypothesis: the exports, imports, foreign direct investment, and employment have no significant impact on Gross domestic product of Cambodia" is rejected. In other

word, it is concluded that the exports, imports, foreign direct investment, and employment have jointly influence Gross domestic product of Cambodia. Further the value of Durbin-Watson statistic is 1.84 which run in the standard range of 1.5 to 2.5 are relatively normal serial autocorrelation (Kenton ,2023).

4.2.4 Long-Run Bounds Cointegration Test

If F-value is less than I(0) the study cannot reject the null hypothesis that there is no long run relationship and cointegration does not exist. So, the Estimate Auto Regressive Distributed Lag (ARDL) Model is carried out. If F-value is higher than all level of confidential error at the first difference (I(1)) the study rejected the null hypothesis and it is concluded that long run relationship and cointegration exists . So, the Estimate Error Correlation Model (ECM) is performed. If F-value is between I(0) and I(1), the test is considered that it is inconclusive.

F-Bounds Test **Null Hypothesis: No levels relationship**

Test Statistic	Value	Sig.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	7.792692	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Here, F-value is 7.792692 greater than I (1) values for all confidential error (p-values). Thus, the present study estimates Error Correction Model (ECM).

4.2.5 Error Correlation Model for Long-Run

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LFDI)	0.048492	0.017566	2.760541	0.0117
D(LIMT)	0.279569	0.051125	5.468323	0.0000
Coint.Eq(-1)*	-0.103878	0.013653	-7.608454	0.0000

R-squared	0.816056	Mean dependent var	0.084650
Adjusted R-squared	0.801906	S.D. dependent var	0.067137
S.E. of regression	0.029881	Akaike info criterion	-4.085491
Sum squared resid	0.023215	Schwarz criterion	-3.944047
Log likelihood	62.23962	Hannan-Quinn criter.	-4.041193
Durbin-Watson stat	1.846979		

* p-value incompatible with t-Bounds distribution.

Cointegration Equilibrium (-1) means error correction coefficient. Long-run causation is present when Cointegration Equilibrium (-1) is negative (-0.103878) and the p-value is less than 0.01. i.e., speed of adjustment of any equilibrium towards long-run equilibrium state. Additionally, the adjustment speed is 10.38% (0.103878 * 100), which is a rather quick rate.

4.2.6 Granger Causality Test

Null Hypothesis:	Obs.	F-Statistic	Prob.	Result
Ho1: LEXT does not Granger Cause LGDP	28	1.41062	0.2643	Accepted
LGDP does not Granger Cause LEXT		0.47257	0.6293	Accepted
Ho2: LIMT does not Granger Cause LGDP	28	1.53014	0.2377	Accepted
LGDP does not Granger Cause LIMT		0.75614	0.4808	Accepted
Ho3: LFDI does not Granger Cause LGDP	28	2.61417	0.0948	Accepted
LGDP does not Granger Cause LFDI		8.23104	0.0020	Rejected
Ho4: LEMP does not Granger Cause LGDP	28	1.72600	0.2003	Accepted
LGDP does not Granger Cause LEMP		1.76427	0.1937	Accepted
Ho5: LIMT does not Granger Cause LEXT	28	0.03934	0.9615	Accepted
LEXT does not Granger Cause LIMT		0.18476	0.8325	Accepted
Ho6: LFDI does not Granger Cause LEXT	28	0.51754	0.6028	Accepted
LEXT does not Granger Cause LFDI		4.10098	0.0300	Rejected
Ho7: LIMT does not Granger Cause LFDI	28	4.44261	0.0234	Rejected
LFDI does not Granger Cause LIMT		1.03268	0.3720	Accepted

1.The granger causality result of the exports and GDP are shown the corresponding ‘f’ and ‘p’ values of the above two granger causality are respectively F1 = 1.41062, p = 0.2643 and F2 = 0.47257, p = 0.6293. Hence,

based on the above results, the null hypothesis “Ho 1: Exports (LEXT) and LGDP do not Granger cause LGDP and LEXP” are accepted. In other words, it can be concluded that Granger Causality does not run two-ways from LEXT to LGDP, and LGDP to LEXP of Cambodia.

2. Bases on the observation 28 years, result of the granger causality on the Imports and GDP are shown the corresponding ‘f’ and ‘p’ values of the above two granger causality are respectively F1 = 1.53014, p = 0.2377 and F2 = 0.75614, p = 0.4808. Hence, based on the above results, the null hypothesis “Ho 1: Import (LIMT) and LGDP do not Granger cause LGDP and LIMT” are accepted. In other words, it can be concluded that Granger Causality does not run two-ways from LIMT to LGDP, and LGDP to LIMT of Cambodia.

3. Result of the granger causality on the Foreign Direct Investment and GDP are shown the corresponding ‘f’ and ‘p’ values of the above two granger causality are respectively F3= 2.61417, p = 0.0948 and F3 = 8.23104, p = 0.0020. Hence, based on the above result, the null hypothesis “Ho 3: Foreign Direct Investment (LFDI) and LGDP do not Granger cause, but LGDP and LFDI is rejected at a rate of 1 percent. To put it another way, it may be said that Granger Causality does not run from LFDI to LGDP, but Granger Causality flow from Cambodia’s GDP to Foreign Direct Investment (LFDI).

4. The granger causality result of the Employment and GDP are shown the corresponding ‘f’ and ‘p’ values of the above two granger causality are respectively F4 = 1.72600, p = 0.2003 and F4 = 1.76427, p = 0.1937. Hence, based on the above results, the null hypothesis “Ho 4: Employment (LEMP) and LGDP do not Granger cause LGDP and LEMP” are accepted. In other words, it can be concluded that Granger Causality does not run two-ways from LEMP to LGDP, and LGDP to LEMP of Cambodia.

5. Bases on the observation 28 years, result of the granger causality on the Imports and Exports are shown the corresponding ‘f’ and ‘p’ values of the above two granger causality are respectively F5 = 0.03934, p = 0.9615 and F6 = 0.18476, p = 0.8325. Hence, based on the above results, the null hypothesis “Ho 1: Import (LIMT) and Exports (LEMT) do not Granger cause LEMT and LIMT”

are accepted. In other words, it can be concluded that Granger Causality does not run two-ways from LIMT to LEXT, and LEXT to LIMT of Cambodia.

6. Result of the granger causality on the Foreign Direct Investment and Exports are shown the corresponding 'f' and 'p' values of the above two granger causality are respectively F6= 0.51754, p = 0.6028 and F6 = 4.10098, p = 0.0300. Hence, based on the above result, the null hypothesis "Ho 6: Foreign Direct Investment (LFDI) and LEXT do not Granger cause, but LEXT and LFDI is rejected at a rate of 5% based in the aforementioned facts. To put it another way, it may be said that Granger Causality does not run from LFDI to LEXT, but Granger Causality flow from Cambodia's LEXT to Foreign Direct Investment (LFDI).

7. Bases on the observation 28 years, result of the granger causality on the Import and Foreign Direct Investment are shown the corresponding 'f' and 'p' values of the above two granger causality are respectively F7= 4.44261, p = 0.0234 and F7 = 1.03268, p = 0.3720. Hence, based on the above result, the null hypothesis "Ho 7: LIMT and LFDI is rejected at a rate of 5% based in the aforementioned facts, but LFDI and LIMT is accepted. To put it another way, it may be said that Granger Causality flow from LIMT to LFDI, but Granger Causality does not run from Cambodia's LFDI to Imports (LFDI).

4.2.7 Wald Test

Test Statistic	Value	df	P-value	Result
F-Statistic	2320.754	(7,21)	0.0000	Rejected
Chi-square	16245.28	7	0.0000	

As the p-value is less than 0.01, so the null hypothesis" C (1) =C (2) =C (3) =C (4) =C (5) =C (6) = C (7) =0" is rejected. Thus, we conclude that its presences of short run causality.

4.2.8 Diagnostic Check

Before we submit the study findings to the research science, the current study needs to verify that the findings of ARDL didn't violate any model assumptions. The ARDL of regression model has four key assumptions:

Normality, Serial correlation (LM), Heteroscedasticity and Stability diagnostic test. The following is as the result of the three diagnostics.

Diagnostics	Statistic Value		P-value	Ho
Normality	X^2	0.028794	0.6941	Accepted
Serial co. LM test	F-value	0.714561	0.5021	Accepted
Heteroskedastic	F-value	0.674393	0.6916	Accepted

4.2.8.1 Normality Check

Verify Testing to see if the underlying distribution is normal or at least symmetric was frequently helpful because many popular statistical tests depend on the normality of a sample or population. For this thesis, the Jarque–Bera test statistic of normal distribution was utilized to determine whether or not the data values are normally distributed. Bases on the result, the null hypothesis (Ho): Residuals are normally distributed. As the p-value is larger than 5%. Thus, we accept the null hypothesis which means that residuals are normally distributed.

4.2.8.2 Serial Correlation Test

When a variable and a lagged version of itself (a variable at times t and at t-1) are seen to be associated with one another across time, this is known as serial correlation in a time series. When one variable's level influences another's level in the future, repeating patterns frequently exhibit serial correlation. (Williams, 2015). In the current result, F-value was 0.714561and p-value was 0.5021, larger than 5 percent. In the case, the null hypothesis (Ho): “The residuals are serial correlation” is accepted. In other words, it can be concluded that the residuals are serial correlation.

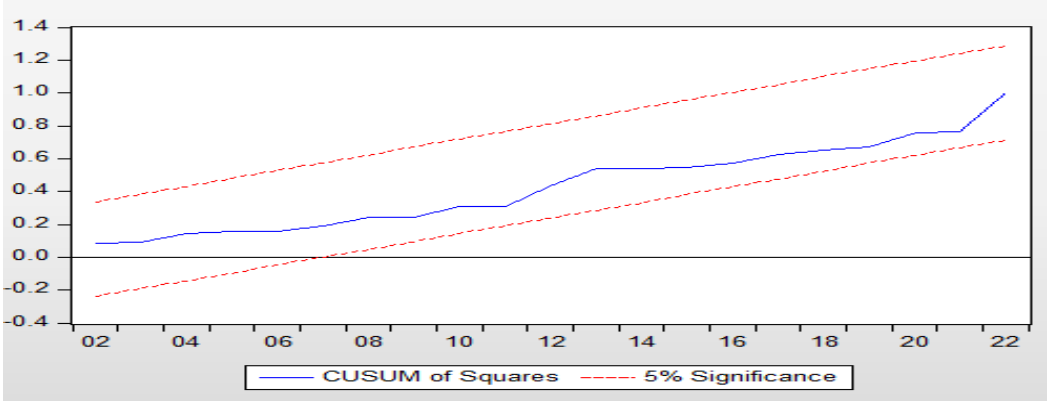
4.2.8.3 Heteroscedasticity

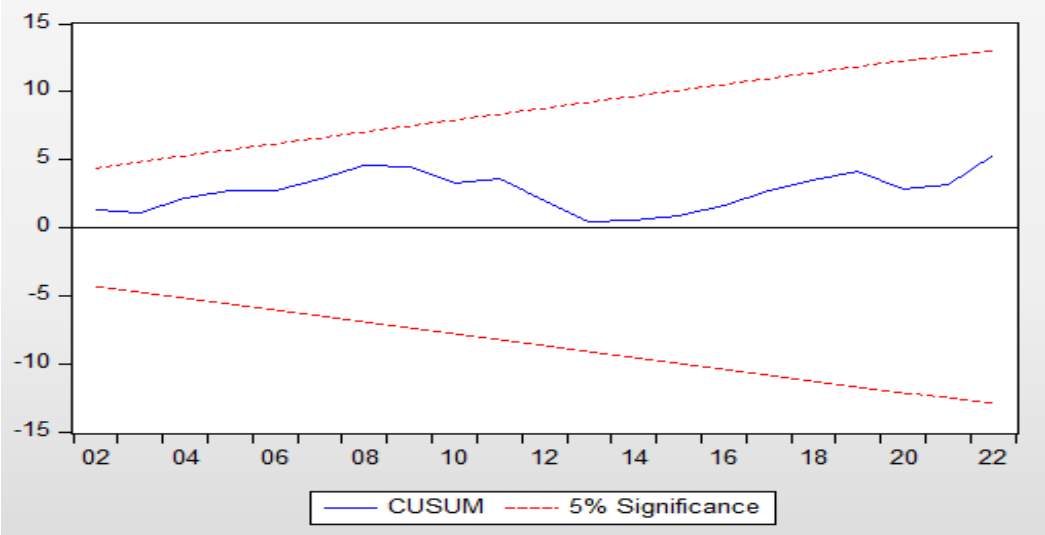
To determine if or not the data are homoscedastic, which indicates that the residuals are equal across the regression line. The current result was more than 0.05, with an F-value of 0.674393 and a P-value of 0.6916. The null hypothesis (Ho) “The residuals are homoscedasticity” is accepted because it is

larger than 5 percent. Stated otherwise, the heteroscedasticity of the residuals can be deduced.

4.2.8.4 Stability Diagnostic Test

The CUSUM tests of the structural breakdowns were carried out in the current work to verify the long run equations and assess the ARDL model's fitness. Pesaran (1997) suggested using Boserup (1965) stability test also known as cumulative (USUM) and cumulative sum of squares (CUSUMSQ) test. The blue line run between the both red lines, we conclude that the model is stable.





The ARDL regression analysis reveals that the dependent variable is explained by the independent variables for 99.87%, with 0.13% of the independent variables being disturbance or error terms. The adjusted R-square value is 0.998279, indicating a 99.82% common arrangement. ANOVA checks show that exports, imports, foreign direct investment and employment jointly

influence Gross Domestic Product, with a Durbin-Watson statistic of 1.84. The study cannot reject the null hypothesis that there is no long-run relationship and cointegration does not exist. The Estimate Error Correction Model (ECM) was performed, and the results showed a Cointegration Equilibrium (-1) mean error correction coefficient, indicating long-term causation. The Granger Causality results showed that Granger causality runs flow from Gross Domestic Product (GDP) to FDI, Exports (LEXT) to FDI, and Imports (LIMT) to FDI of Cambodia.

CHAPTER V
CONCLUSION AND RECOMMENDATIONS

Introduction

The purpose of this chapter is to provide an overview of the study's key conclusions. The chapter also includes a conclusion, research opportunities, and policy implications. The chapter is broken up into three sections for this reason. The study's primary conclusions are covered in the first part. The second chapter focuses on the policy implications and recommendations, while the third piece presents the study's conclusion and the scope for further research.

5.1. Summary of Findings

The study examines the relationship between exports, imports, foreign direct investment, and employment in Cambodia. The model summary reveals that the dependent variable is explained by the independent variables for 99.87%, with only 0.13% of the independent variables not mentioned in the model. The adjusted R-square value is 0.998279, indicating that the independent variables and dependent variable have common arrangement for 99.82%. The model also shows a cointegrating equation when GDP is the dependent variable.

The ANOVA checks show that the null hypothesis that exports, imports, foreign direct investment, and employment have no significant impact on the Gross Domestic Product of Cambodia is rejected. The Durbin-Watson statistic is 1.84, indicating a relatively normal serial autocorrelation. If the F-value is less than I(0), the study cannot reject the null hypothesis that there is no long-run relationship and cointegration does not exist.

The granger causality results for exports and GDP show that the null hypothesis "Ho 1: Exports (LEXT) and LGDP do not Granger cause LGDP and LEXP" is accepted. The results for imports and GDP show that the null hypothesis "Ho 1: Import (LIMT) and LGDP do not Granger cause LGDP and LIMT" is accepted. The results for Foreign Direct Investment and GDP show that the null hypothesis "Ho 3: Foreign Direct Investment and LGDP do not Granger cause, but LGDP and LFDI" is rejected at a rate of 1%.

5.2. Conclusion

Objective 2: The model summary reveals that the dependent variable is explained by the independent variables for 99.87%, with only 0.13% of the independent variables not mentioned. The adjusted R-square value is 0.998279, indicating a 99.82% common arrangement. The cointegrating equation is derived when GDP is the dependent variable. The ANOVA checks show that exports, imports, foreign direct investment, and employment jointly influence Cambodia's GDP. The Durbin-Watson statistic is 1.84, indicating normal serial autocorrelation.

Objective 3: The study uses the Estimate Auto Regressive Distributed Lag (ARDL) Model to reject the null hypothesis of no long-run relationship and cointegration. If F-value is higher than I(1), the ECM is used. The Cointegration Equilibrium (-1) indicates long-run causation, with a negative p-value and a quick adjustment speed of 10.38%.

5.3. Policy Implication and Strategic Suggestions

On the basis of the major findings of the study as presented above, the present section aims to provide policy measures for the development of export in Cambodia. Thus, policy maker or plan makers should continue and reform through the policy implication and suggestions of the study are as follows:

Policy-makers and planners should continue improving infrastructure, transportation, and create more facilities to attract foreign direct investment and export for longer periods in Cambodia. They should also develop policies for conserving and protecting local and foreign investors, particularly in the Phnom Penh area. City halls should strengthen traffic rules and prepare new plans to reduce traffic jams and road accidents, enhancing foreign investors' confidence.

Strict legal actions should be taken against those violating investment rules, and infrastructure should be improved to protect foreign investors from snatchers, robberies, and theft.

An action plan should be prepared to eliminate illegal actions in administration, such as corruption and unfair state officials, and reduce electricity fees and transportation to attract investors. Short-term training on hard and soft skilled organic techniques can help attract foreign investors and eliminate economic leakages.

Cambodia must continue to expand rapidly to reduce poverty and raise living standards. Transitioning to a more sustainable growth pattern, bolstered by increased productivity, structural changes, high-quality investments in human capital and infrastructure, and climate-wise development policies, is necessary for Cambodia's sustainable development.

5.4. Limitation and Future Research

On the basis of the limitations of the present study as mentioned in the chapter one, the scope for further research is presented below:

1. To understand export development in the city of Cambodia, only 30 observations have been selected as a sample size. The study could have provided better results, if it had the size of the sample would have been larger.

2. To examine the role of export sector in economic development, dependent variables such as GDP have been taken into account. The study could have provided better results, had the dependent variables would have been more.

3. In addition, in the future research, the study attempts to identify and analyze the existing problems and prospects of export development in research study, special economic zones in Phnom Penh and the borders.

Thus, the limitations of the present study have provided the insights for further research in this field.

On the whole, the present study has made an attempt to analyze the potentialities of export through foreign direct investment in study area, out and in special economic zone and assess the role of export in economic development of Cambodia.

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APPENDIX

1. Descriptive Statistics

	LEMP	LEXT	LFDI	LGDP	LIMT
Mean	15.68794	22.19083	20.19435	22.87858	22.34587
Median	15.70088	22.40510	20.54990	22.97001	22.52402
Maximum	16.01499	23.72708	22.02156	24.10782	23.55185
Minimum	15.29601	19.82394	17.80679	21.65296	20.53416
Std. Dev.	0.203088	1.108182	1.448517	0.820759	0.942154
Skewness	-0.109475	-0.411672	-0.173800	0.041668	-0.301955
Kurtosis	2.102580	2.025507	1.470336	1.520317	1.787801
Jarque-Bera	1.066626	2.034413	3.075871	2.745509	2.292666
Probability	0.586658	0.361604	0.214824	0.253408	0.317800
Sum	470.6382	665.7250	605.8305	686.3573	670.3761
Sum Sq. Dev.	1.196102	35.61395	60.84786	19.53570	25.74195
Observations	30	30	30	30	30

2. Unit-Root TEST

Null Hypothesis: D(LGDP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.984151	0.0049
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LGDP has a unit root
Exogenous: Constant
Bandwidth: 0 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-0.201999	0.9276
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LGDP) has a unit root
Exogenous: Constant
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-3.948539	0.0054
Test critical values:	1% level	-3.689194	

	5% level	-2.971853
	10% level	-2.625121

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LEXT has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.302897	0.1778
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LEXT) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.819473	0.0000
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LEXT has a unit root
Exogenous: Constant
Bandwidth: 14 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-3.867323	0.0063
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LIMT) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.670608	0.0009
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LIMT has a unit root
Exogenous: Constant
Bandwidth: 19 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*

Phillips-Perron test statistic		-4.111459	0.0035
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LFDI has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.129370	0.6903
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LFDI) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.754936	0.0086
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LFDI has a unit root
Exogenous: Constant
Bandwidth: 5 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-1.135902	0.6876
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LFDI) has a unit root
Exogenous: Constant
Bandwidth: 16 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-3.870834	0.0065
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LEMP has a unit root

Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.495121	0.8780
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: LEMP has a unit root
Exogenous: Constant
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-1.709965	0.4159
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LEMP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.722633	0.0008
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LEMP) has a unit root
Exogenous: Constant
Bandwidth: 1 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-4.669252	0.0009
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

3. ARDL Statistics

Dependent Variable: LGDP
Method: ARDL
Date: 04/11/24 Time: 18:45
Sample (adjusted): 1994 2022
Included observations: 29 after adjustments
Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)
Dynamic regressors (2 lags, automatic): LEMP LEXT LFDI LIMT
Fixed regressors: C
Number of models evalulated: 81
Selected Model: ARDL(1, 0, 0, 1, 1)
Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LGDP(-1)	0.896122	0.095002	9.432650	0.0000
LEMP	-0.303217	0.310473	-0.976628	0.3399
LEXT	0.147017	0.121211	1.212900	0.2386
LFDI	0.048492	0.028623	1.694169	0.1050
LFDI(-1)	-0.042662	0.025271	-1.688155	0.1062
LIMT	0.279569	0.153501	1.821290	0.0828
LIMT(-1)	-0.283284	0.072054	-3.931527	0.0008
C	3.873166	3.188425	1.214758	0.2379

R-squared	0.998709	Mean dependent var	22.92084
Adjusted R-squared	0.998279	S.D. dependent var	0.801377
S.E. of regression	0.033248	Akaike info criterion	-3.740664
Sum squared resid	0.023215	Schwarz criterion	-3.363479
Log likelihood	62.23962	Hannan-Quinn criter.	-3.622534
F-statistic	2320.754	Durbin-Watson stat	1.846979
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

4. Long-Run Bound test

ARDL Long Run Form and Bounds Test
Dependent Variable: D(LGDP)
Selected Model: ARDL(1, 0, 0, 1, 1)
Case 2: Restricted Constant and No Trend
Date: 04/11/24 Time: 18:57
Sample: 1993 2022
Included observations: 29

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.873166	3.188425	1.214758	0.2379
LGDP(-1)*	-0.103878	0.095002	-1.093434	0.2866
LEMP**	-0.303217	0.310473	-0.976628	0.3399
LEXT**	0.147017	0.121211	1.212900	0.2386
LFDI(-1)	0.005830	0.032180	0.181183	0.8580
LIMT(-1)	-0.003715	0.148418	-0.025029	0.9803
D(LFDI)	0.048492	0.028623	1.694169	0.1050
D(LIMT)	0.279569	0.153501	1.821290	0.0828

* p-value incompatible with t-Bounds distribution.
** Variable interpreted as Z = Z(-1) + D(Z).

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LEMP	-2.918957	5.272515	-0.553618	0.5857
LEXT	1.415279	2.042746	0.692832	0.4960
LFDI	0.056127	0.269335	0.208392	0.8369
LIMT	-0.035761	1.439778	-0.024838	0.9804
C	37.28554	58.57868	0.636504	0.5313

EC = LGDP - (-2.9190*LEMP + 1.4153*LEXT + 0.0561*LFDI -0.0358*LIMT
+ 37.2855)

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	7.792692	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
			Finite Sample: n=35	
Actual Sample Size	29			
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532
			Finite Sample: n=30	
		10%	2.525	3.56
		5%	3.058	4.223
		1%	4.28	5.84

5. Error Correlation Model

ARDL Error Correction Regression
Dependent Variable: D(LGDP)
Selected Model: ARDL(1, 0, 0, 1, 1)
Case 2: Restricted Constant and No Trend
Date: 04/11/24 Time: 18:59
Sample: 1993 2022
Included observations: 29

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LFDI)	0.048492	0.017566	2.760541	0.0117
D(LIMT)	0.279569	0.051125	5.468323	0.0000
CointEq(-1)*	-0.103878	0.013653	-7.608454	0.0000

R-squared	0.816056	Mean dependent var	0.084650
Adjusted R-squared	0.801906	S.D. dependent var	0.067137
S.E. of regression	0.029881	Akaike info criterion	-4.085491
Sum squared resid	0.023215	Schwarz criterion	-3.944047
Log likelihood	62.23962	Hannan-Quinn criter.	-4.041193
Durbin-Watson stat	1.846979		

* p-value incompatible with t-Bounds distribution.

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	7.792692	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

6. Short-Run Wald Test

Wald Test:
Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	2320.754	(7, 21)	0.0000
Chi-square	16245.28	7	0.0000

Null Hypothesis: C(1)=C(2)=C(3)=C(4)=C(5)=C(6)=C(7)=0
Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(1)	0.896122	0.095002
C(2)	-0.303217	0.310473
C(3)	0.147017	0.121211
C(4)	0.048492	0.028623
C(5)	-0.042662	0.025271
C(6)	0.279569	0.153501
C(7)	-0.283284	0.072054

Restrictions are linear in coefficients.

7. Granger Causality Test

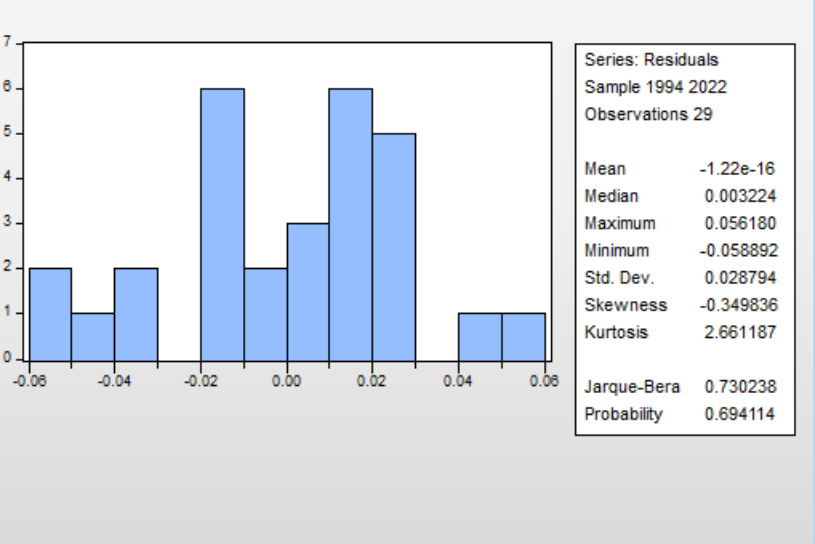
Pairwise Granger Causality Tests
Date: 04/11/24 Time: 19:04
Sample: 1993 2022
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LEMP does not Granger Cause LGDP	28	1.72600	0.2003
LGDP does not Granger Cause LEMP		1.76427	0.1937
LEXT does not Granger Cause LGDP	28	1.41062	0.2643
LGDP does not Granger Cause LEXT		0.47257	0.6293
LFDI does not Granger Cause LGDP	28	2.61417	0.0948
LGDP does not Granger Cause LFDI		8.23104	0.0020
LIMT does not Granger Cause LGDP	28	1.53014	0.2377
LGDP does not Granger Cause LIMT		0.75614	0.4808
LEXT does not Granger Cause LEMP	28	0.51150	0.6063
LEMP does not Granger Cause LEXT		2.42828	0.1105
LFDI does not Granger Cause LEMP	28	1.62057	0.2196
LEMP does not Granger Cause LFDI		2.12229	0.1426
LIMT does not Granger Cause LEMP	28	0.79556	0.4634
LEMP does not Granger Cause LIMT		1.33714	0.2823
LFDI does not Granger Cause LEXT	28	0.51754	0.6028
LEXT does not Granger Cause LFDI		4.10098	0.0300
LIMT does not Granger Cause LEXT	28	0.03934	0.9615
LEXT does not Granger Cause LIMT		0.18476	0.8325

LIMT does not Granger Cause LFDI	28	4.44261	0.0234
LFDI does not Granger Cause LIMT		1.03268	0.3720

8. Diagnostic Check

a. Normality



b. Serial Correlation Check

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.714561	Prob. F(2,19)	0.5021
Obs*R-squared	2.028698	Prob. Chi-Square(2)	0.3626

c. Heteroscedasticity

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.674393	Prob. F(7,21)	0.6916
Obs*R-squared	5.322619	Prob. Chi-Square(7)	0.6207
Scaled explained SS	2.318230	Prob. Chi-Square(7)	0.9402

d. Stability Diagnostics