THESIS SUBMITTED TO

WOLKITE UNIVERSITY

DEPARTMENT OF ECONOMICS COLLEGE OF BUSINESS AND ECONOMICS SCHOOL OF GRADUATE STUDIES, WOLKITE UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR DEGREE OF MASTERS OF SCIENCE IN ECONOMICS (DEVELOPMENT ECONOMICS)

LEATHER AND LEATHER PRODUCTS EXPORT AND ITS CONTRIBUTION FOR ECONOMIC GROWTH IN ETHIOPIA: A TIME SERIES DATA ANALYSIS

BY: GETNET TAYE

MAJOR ADVISOR: MEKONNEN BERSISA (Ph.D.)

CO-ADVISOR: ABEBE MANGESHA (MSc.)

AUGUST, 2021

WOLKITE, ETHIOPIA

Declaration

I, **Getnet Taye**, here by declare that this thesis research entitled ***"Leather and Leather Products Export and Its Contribution to Economic Growth in Ethiopia Time Series Data Analysis***", has been carried out by me under the guidance and supervision of Mekonnen Bersisa (Ph.D.) and Abebe Mangesha (MSc.) and submitted for the award of the degree of Master of Science in Economics at Wolkite University. Finally, this thesis is original work and it hasn't been presented for the award of any other Degree, Diploma, Fellowship or other similar titles of any other university or institution.

Name	Signature	Date
Getnet Taye	_____	_____

Advisors' Approval Sheet

(Submission Sheet-1)

This is to certify that the thesis entitled on ***"Leather and Leather Products Exports and Its Contribution to Economic Growth in Ethiopia: A Time Series Data Analysis"*** submitted in partial fulfillment of the requirements for the degree of Masters with specialization in development Economics, the Graduate Program of the Department /School/ of Economics, and has been carried out by Getnet Taye, Id. No BEGR/002/12, under our supervision. Therefore we recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the department.

Mekonnen Bersisa (Ph.D).	_____	_____
Name of major advisor	Signature	Date
Abebe Mangesh (MSc.)	_____	_____
Name of co-advisor	Signature	Date

School of Graduate Studies

Wolkite University

Examiners' Approval Sheet (2)

==========

We, the undersigned, members of the Board of Examiners of the final open defense by **Getnet Taye** have read and evaluated his/her thesis entitled ***"Leather and Leather Products Export and Its Contribution to Economic Growth in Ethiopia by Time Series Data Analysis"***, and examined the candidate. This is, there fore, to certify that the thesis has been accepted in partial fulfillment of the requirements for the **Degree Masters of Science in Economics (Development Economics)**.

Name of the Chairperson	Signature	Date
Name of Major Advisor	Signature	Date
Name of Internal Examiner	Signature	Date
Name of External examiner	Signature	Date
SGS Approval	Signature	Date

Final approval and acceptance of the thesis is contingent upon the submission of the final copy of the thesis to the School of Graduate Studies (SGS) through the department /School/ Graduate Committee (DGC/SGC) of the candidate's department.

Stamp of SGS Date: _____

Acknowledgement

I praise first and thanks my God for every thing. He has done to me and his Mather St. Merry for helping me entire in my life and to successfully complete this work. It is only through his were and path that I reached here. With a heart full of praises and adorations I exalt you Lord for what you have done for me. Without your help this thesis wouldn't have been possible and then I would like to thank my thesis major advisor Mekonnen Bersisa (Ph.D.) Give guidance and constructive comments throughout the development of this thesis for his skillful guidance and support throughout the course of this work and the contribution made by various persons and institutions in completing this study. The study would not have been feasible without his support and valuable remarks. I am also thankful to my co-advisor Abebe Mengesha (MSc.), who has been a source of encouragement and enthusiasm for my thesis. In addition, I would like to justify and special thanks for Amsalu Bichnu (MSc), Tesfaye Etensa (Ass.Pro), Melse Anshebo (MSc), Mengistu Tesfa (MSc.), and Getachew Demis (MSc.), that give different incentive idea and suggestions. His comments is high quality and eternal support since the beginning of this work was marvelous. The contribution and friendly approach were unforgettable. Finally, grateful more in advance than I can say to my parents, for their usual support by ideas to finish this study and it is my big pleasure to acknowledge to my advisor, last, I would like to express my heartfelt appreciation and gratitude to my family and my friends as well as for the grand support and encouragement throughout my education challenges.

Table of Contents

Declaration ii

School of Graduate Studies iv

Acknowledgement v

Table of Contents vi

List of Acronyms and Abbreviations ix

List of Tables x

List of Figures xi

List of Appendix xii

Abstract xiii

CHAPTER ONE 1

1. INTRODUCTION 1

1.1 Back Ground of The Study 1

1.2 Statement of The Problem 3

1.3 Research Question 4

1.4 Objective of the Study 5

1.4.1. General Objective 5

1.4.2. Specific Objective 5

2. REVIEW OF RELATED LITERATURE 7

2.1. Theoretical Literature Review 7

2.1.1. Raw Hide and Skin 7

2.1.2. Leather and Leather Product 8

2.1.3 History of Leather Product in Ethiopian by Different Regime 11

2.1.4 Structure of Leather Sector in Ethiopia 16

2.2 Empirical Literature 16

2.2.1 Related Studies in the Rest of the World 16

2.2.3 Related Studies in Ethiopia 20

2.3 Conceptual Framework 26

CHAPTER THREE 27

3. METHODOLOGY OF THE STUDY 27

3.1. Type and Source of Data 27

3.2. Method of Data Analysis 27

3.3. Model of Specification 27
3.4. Econometrics Methods of Data Analysis 29
3.4.1. Augmented Dickey–Fuller Test 29
3.4.2. Unit Root Test 29
3.4.3. Optimal Lag Length Selection 30
3.5. Vector Error Correction Models (VECM) 30
3.6. Granger Causality Test 34
3.7. Diagnostic Test 36
3.7.1. Heterosckadasity Test 36
3.7.2. Multicolinerity Test 36
3.7.3. Autocorrelation Test 37
3.7.4. Stability Tset 37
3.7.5. Normality Test 37
3.8. Description and Expected Sign of both Dependent and Independent Variables 38
CHAPTER FOUR 39
4. RESULTS AND DISCUSSION 39
4.1**.** Descriptive Statistics of Variables 39
4.2. Trends of all Variables 40
4.2.1 Trends of Real Gross Domestic Product and Leather and Leather Product Export 41
4.3 ADF Unit Root Testing Result 42
4.4 Johanssen Cointegration Test 44
4.5 Optimum Lag Length 45
4.6 Vector Error Correction Model 46
4.7 Long Run and Short Run Test of Variables 48
4.8 Granger Causality Tests 49
4.9 Diagnostics Testing Result 50
4.9.1 Test of Stability 51
4.9.2 Normality Test 52
4.9.3 Serial Correlation 52
4.9.4 HetroscedasticityTest 53

CHAPTER FIVE 54
5. CONCLUSION AND RECOMMENDATION 54
5.1 Conclusion 54
5.2**.** Policy Recommendation 55
5.3. Areas For Future Studies 56
References 57
Appendix 60

List of Acronyms and Abbreviations

ADF	Augmented Dickey Fuller
AIC	Akaike Information Criterion
CLRM	Classical Linear Regression Model
CSA	Central Statics Agency
ECM	Error Correction Model
EGC	Ethiopian Gummurk Commission
ERCA	Ethiopian Revenue And Customs Authority
FAO	Food And Agriculture Organization
FDI	Foreign Direct Investment
GFKA	Gross Fixed Capital
GLCC	Global Leather Coordinating Committee
GPN	Global Production Network
GTP II	Growth And Transformation Plan II
GVC	Global Value Chain
ILC	Indian Livestock Census
ITC	International trade center
LIDI	Leather Industry Development Institute
NBE	National Bank Of Ethiopia
OLS	Ordinary Least Squares
RGDP	Real Growth Production
UNCTAD	United Nations Conference on Trade and Development
UNIDPO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
VECM	Vector Error Correction Model
WTO	World Trade Organization

List of Tables

Table 4.1: Summary of Statistics ---------- 39

Table 4.2: Unit Root Test Result---------- 43

Table 4.3: short summery of ADF Unit root test ---------- 44

Table 4.4: Johanssen Cointegration Test ---------- 45

Table 4.5: VAR Lag Order Selection Criteria ---------- 46

Table 4.6: Vector Auto Regressive Model ---------- 47

Table 4.7: The Long run and short run Test of Variables ---------- 49

Table 4.8: Granger causality test ---------- 50

Table 4.9: summery results of serial correlation test ---------- 53

Table 4.10: summery results of hetroscedasticity test ---------- 53

List of Figures

Figure 2.1: sample of raw hide and skin ---------- 8

Figure 2.2: Sample of Export leather and leather products ---------- 11

Figure 2.3: Conceptual frameworks ----------26

Figure 4.1: Trends of All Variables in Ethiopia (1984-2019) ----------40

Figure 4.2: Trends Real Gross Domestic Product and leather and leather product export in Ethiopia (1984-2019) ---------- 41

Figure 4.3: Stability test of VAR model ----------51

Figure 4.4: Summery results of normality test ----------52

List of Appendix

Appendix 1: Descriptive Statistics of Variables ---------- 60

Appendix 2: Unit root; Real Growth Domestic Product at Level with Trends ---------- 60

Appendix 3: unit root test of Export of leather Product at Level with Trends ---------- 61

Appendix 4: unit root of growth capital formation at Level with Trends ---------- 61

Appendix 5: unit root test of growth capital formation at Level with Trend ---------- 62

Appendix 6: Unit Root Test of Net Financial Flow at Level with Trends ---------- 63

Appendix 7: Unit Root Test of Total Labor Force at First Difference with Trends ---------- 64

Appendix 8: Optimum lag length ---------- 64

Appendix 9: Johanson Cointegration Test ---------- 64

Appendix 10: The Vector Error Correction Model ---------- 68

Appendix 11: The Long Run Impacts of Variables on Economic Growth ---------- 69

Appendix 12: Granger Causality Tests /long run causality ---------- 70

Appendix 13: Stability test ---------- 71

Appendix 14: Normality Test ---------- 71

Appendix 15: Serial Correlation ---------- 71

Appendix 16: Hetroscedasticity ---------- 72

Abstract

This paper has conducted an empirical investigation of leather and leather products export and its contribution to economic growth in Ethiopia. The study employed a time series data, the period from 1984/85 to 2019/20. The data set was collected from National Bank of Ethiopia, International Monetary Fund, Ethiopian Gumruk Commission and World Bank. This study employed Vector Error Correction Model and Johanssen co-integration test for data analysis. The result indicates that, the variables used in the study were non-stationary at level but they were found to be stationary at their first difference. The study also found that leather and leather product export, gross capital formation, have a positive association on economic growth and statistically significant association with economic growth in the long run. In the long run, improving leather and leather products export and net financial flow and labor force contribute for economic growth in Ethiopia. Increasing the volume of leather and leather products export and the improvement of the quality of leather product are increase the demand of the people and improves economic growth. This finding is consistent with our objectives and research questions sequences. This thesis ends with some policy recommendations. To maximize the gain from the sector the country should be cautiously allied to bordering country, which plan and designed in a sustainable way of export of leather product and pointing to escalation Ethiopian leather and leather products export and should also increase its trading partner among African and world countries.

Keyword: Leather and leather Product Export, VECM, Economic Growth, and Ethiopia

CHAPTER ONE

1. INTRODUCTION

1.1. Back Ground of The Study

Leather and leather products are the most widely traded products in world wide market, and the products are produced based on a renewable and readily available resource. In terms of value it is estimated that, the international trade exceeds 80 billion US doullar annually and it is expected to continue growing alongside the increase in population and urbanization of developing and developed countries. Leather Industry plays a significant role in the world economy and it stands as one of the most widely commercialized commodities in the world and the industry accounting for trade flows worth of US 233 billion dollar spread over 200 exporting countries (ITC, 2017).

In the global markets, leather and leather product plays a crucial role in enhancing economic growth and development. The escalation of potential market size can lead to increasing returns, economies of scale, and increased capacity utilization. Leather product is manufactured in different country and exports both indirect export uses and its involvement to enhance trade and industry progression and further development of the country (Harcourt et al., 2007).

In ITC, 2016, the global market value of leather and leather product was worth approximately reaches 217.49 billion U.S. dollars. This indicated that, most advanced countries like China and Italy are the leading fabricator and exporting in the world market with share of leather exports 23.3 and 13% respectively in raw and finished leather sub sector.

In fact, both developed and developing countries are used in export of leather and leather product as the main component of viable development for one country. Owing to this, most countries have realized export-oriented development plans with the objectives of returning their economic stability both internally and externally improving resource allocation economic efficiency. The liberalization trade plays a great role in make safe economies of scale, accessing markets, and growth of trade through its effect on industrial growth and renewal (Dejong and Rippol, 2006).

The leather and leather products sector contributes on average value about 6 to 8 % of the gross value product of all manufacturing industries and contributes about 6% to national GDP. In fact, the sector of leather industry that, created job opportunity of employments and around 6 % of share from manufacturing. According to statistical reports of ERCA, leather sector count for 7.2

% average exports during 2000-2016 which is continues to be an important source of the flow of foreign currency earnings. Finished leather product represents the largest share of Ethiopia's output (ERCA, 2015)

Export of leather product, in 2013 reaches US $ 23 millions and it accounted for around 60 % of total leather-related exports in 2016 and US $ 133 million in 2018. Ethiopian leather and leather products industry is relatively a grown-up industry with more than 80 years of involvement in producing leather products. The antiquity of the industry goes back to the establishment of Asco Tannery in 1928 and the subsequent establishment of Asco Shoe factory. The tanning industry in Ethiopia produces and exports all types of finished leather from hides, sheep skins and goat skins (LIDI, 2015).

Currently, Ethiopia is exporting mainly finished leather followed by growing shoes. Other leather items with gloves, bags and small leather articles have a large potential for exponential growth. The recent expansion in leather gloves production is proof of existing capacity as well as the potential to export with a steady growth of volume and value. Quality sheep skins for glove, shoe upper, garment and other leather goods. Ethiopian government is supporting the sector with special attention through creating conducive policy environment for investment in the sector. Ethiopian leather industry is processing and produced, were among the key productive sub-sector of the economy known under GTP II (GTP II, 2015).

Exposure to world markets may also induce competitive pressures and may encourage innovation and facilitate technological advancement and knowledge spillovers in to the domestic economy leading to efficiency gains in production and management practices (Jordan and Eita, 2007).

Ethiopia's leather and leather product sector produces a range of products from semi-processed leather in various forms to processed leathers including shoe uppers, leather garments, stitched upholstery, backpacks, purses, industrial gloves and finished leather. Leather product is a final processed product that used to make a variety of footwear, automobile seats, clothing, apparel, bags, car interiors book bindings, fashion accessories, and furniture. The producer produced wide variety of types and styles and decorated by a wide range of techniques. Manufacturing of leather products takes place with varying degrees of scale and labor or capital intensity. Leather products can be mass-produced in small and more labor intensive workshops or in large more capital-intensive factories (Mattila et al., 2008).

The most important source of leather and leather products are hides and skins that are procured from collectors and traders. Leather and leather product sectors is one of the leading manufacturing sectors for Ethiopia. The industry bases itself on the country's livestock resources. Ethiopia possesses one of the world's largest livestock population with 61.51 million cattle, 33.02 million sheep, and 38.96 million goats (CSA, 2019).

About 8 million of cattle hide, 12 million of sheep skin and 8 million of goat skin are available annually. The livestock sub-sector contributes about 12% for national GDP, over 45% of the agricultural GDP and 16% of total exports (FAO, 2017).

Exports also generate the much-needed foreign exchange and net financial flow, which can be used to import capital goods and intermediate inputs that are critical to the domestic production of a country. The expansion of exports is positive spillover effects on the rest of the economy. The potential benefits of export of leather product have encouraged nations to not only Ethiopia but also to look for new trading opportunities (Goldberg et al., 2007). Finally, this study to explore leather and leather products export and its contribution of economic growth in Ethiopia by applying full of time series data.

1.2. Statement of The Problem

A worldwide economic trend towards the enhancement of international trade and the rise of new economies are passed through different opportunities and challenges. The intention of the buyer is to maximize with out compromising the ability of future generations to meet their own needs. Global leather coordinating committee sought to identify real and alleged strengths, weaknesses, opportunities and threats of reputation to the leather industry (GLCC, 2013).

In fact, leather and leather product faces several complex challenges and determinant factors in its development. A dynamic factor that influence the export interest of leather product producers, low quality of raw material, marketing strategy, regime regulation and incentives, skilled labor force, infrastructure, capital, technology, managerial capability and industry and institution linkage are the main influential factors that affects the export of leather product (Kifelew et al., 2018).

Another challenge is the seasonality of production in accordance to the three festival seasons, that are September season (Ethiopian new year, Meskel and Arefa), January season (Ethiopian Christmas, Epiphany and wedding season) and May season (Ethiopian Easter, Ramadan and

wedding season). As a result, most households in urban areas like Addis Ababa sell skins at or below the break-even point during holiday season (LIDI, 2017).

The complications leather and leather product export can be categorized into structural, supply side, and demand side, advertising and information asymmetry. However, current knowledge on livestock market structure, performance and prices are poor and inadequate for designing policies and institutions to overcome perceived as problems in the marketing system. Finally, after appraisal of different review, mention and put clear research gaps are: a) Majority of the previous work was addresses on leather and leather products, export performance and potentials by spread over cross sectional data (Wegayehu et al., 2016). This study is better to add and incorporate leather and leather product export and its contribution of economic growth by using time series data and fills the model gaps. b) No more previous work exists by this award in the recent time and well done by secondary data analysis. c) Most of the previous study was tell as, the determinants of export performance of leather and leather product in Ethiopia and other one is effect of export tax on the competitiveness of Ethiopia's leather industry, but not consider the contribution of leather product export to economic growth. d) The methodology taken into account and variables incorporated in the econometric model for further analysis based on the expected the results is also another area of disparity among these researchers. Thus, this paper tries to address and fill the gap by taking into account the above noted issues is to investigates and analysis leather and leather products exports and its contribution to economic growth in Ethiopia from 1984/85 to 2019/20 by using time series data analysis.

1.3. Research Question

- What is the trend of leather and leather products export in Ethiopia?
- What is the contribution of leather and leather products export to economic growth in the short run?
- What is the contribution of leather and leather products export to economic growth in the long run?
- What is the causal relationship between leather and leather products export and economic growth?

1.4. Objective of the Study

1.4.1. General Objective

The general objectives of the study is to investigate leather and leather products export and its contribution for economic growth in Ethiopia.

1.4.2. Specific Objective

The specific objectives of the study are:

- To show the trend of leather and leather products export in Ethiopia.
- To investigate the contribution of leather and leather products export to economic growth in the short run.
- To explore the contribution of leather and leather products export to economic growth in the long run.
- To analysis the causal relationship between leather products export and economic growth.

1.5. Significance of The Study

The inquiry of lather and leather products are very important for world economy development. The study helps to explore the role of leather and leather products export and its contribution for economic growths. A competitive power of leather and leather products in international market are very vital and agreeable by the world developed country and the latest contribution for the development of global economy. In our country, the worth of this study is very essential for enhancing the growing of domestic product. Since, the demand of the people want to use and consume leather products. Export performance of leather and leather producst are basically very smooth withthehorn of Africa countriesand the world market. In line with this, the product by itself advertise and deliver profited by making of foreign currency that can be generated from global market. Finally, the contribution and significance of leather and leather products export are very indispensable to policy makers and support the sectors by advertising theire own produced products and increase their competitiveness through various means.

1.6. Scope and Delimitation of The Study

The study was limited to investigate the overall production of leather and leather products quality and volume of exports and its contribution to economic growth in Ethiopia from destination of country at time t for a period from 1984/85 to 2019/20 by using annual and sequential time series data, that was received from different institutions like World Bank, Centeral Stastics Agency and National Bank of Ethiopia, Ethiopian Gumruk commution and Leather Industry Development Institute. Time series analysis different delimitation, including problems with generalization from a single study, difficulty in obtaining appropriate measures, and problems with accurately identifying the correct model to represent the data.

1.7. Organization of the Paper

This is organized five chapters; the first chapter was concerned the issues to be investigated and the driving force behind making a study on the back ground of the study and statement of the problem concerned. The second chapter deals with the theoretical literature and empirical literature review followed by chapter three, research methodology is presented, model specification and econometric model is developed. The full data sources and econometric tests description is also included history and trends of private investment in Ethiopia. Chapter four followed with econometric results discussion and the paper has been closed with chapter five conclusion, recommendations and areas for future studies.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1. Theoretical Literature Review

This chapter was organized by three main sections; that is, the first part deals with theoretical literatures review on leather and leather product, and a brief review of different literature of leather and leather product exports and its contribution for economic growth, and a volume as well as the quality of the product in performing of both developed and developing countries. The second part of this thesis contains the review of empirical and realistic literature on different world countries experiences. The third part of this thesis contains a design and integral association of control variables and its conceptual frameworks of the researches.

2.1.1. Raw Hide and Skin

The main source of leather product is raw hides and skins, are produced as a result of essence production. The sustainability way raw hides and skins is producing high volume of invention and the need to dispose a large amount of hides and skins. The sector is depend on the wastes generated materials' during the protection, storage and transporting of raw hides and skins. The common protection method is known as wet salting technique, which involves the use of common salt as a drying and bacteriostatic agent. Reusage of salt is possible during the pickling stage of tanning which reduces the volume of salt used and disposed to the environment (Eurostat et al., 2018).

Ethiopian leather sector is a composed of raw hides and skins traders, leather tanneries, which source their supply mostly from the local market and footwear producers use both local and international markets for raw material supply. Ethiopia's leather and leather product sector produces a range of products from semi-processed leather in various forms to processed leathers including shoe uppers, leather garments, stitched upholstery, backpacks, purses, industrial gloves and finished leather (ECCSA, 2019).

Figure 2.1: Sample of Raw Hide and Skin



Source: LIDI Documentary Picture, 2020

2.1.2. Leather and Leather Product

Leather and Leather Products industry has played a central role in export diversification and the industrial development of peripheral countries, in particular in countries with large livestock sectors. The production of leather from hides and skins involves the treatment of raw materials, which is the conversion of the raw hide and skin as put rescible material into leather product and makes a stable material. Leather is a durable and flexible materials created by tanning animal raw hide and skins. In correspondence to the very labor-intensive manufacturing sector, leather processing in tanneries is more capital and scale intensive. Leather is often the major material input, and is cut and assembled into use shoes, clothing, leather goods, furniture. The finished leather is used to produce various leather products for a variety of end-use markets (Mattila et al., 2008).

Leather product is an intermediate industrial product, with numerous applications in downstream sectors of the consumer products industry, that is shoes, clothing, leather goods, furniture and many other items of daily use. A trend toward more globally joined tanneries has also been seen in the last few years as globalized tanneries set up production units in different parts of the world (Grumiller et al., 2019).

Leather and Leather Products can be roughly divided into five key segments: (i) the livestock sector and slaughter houses, where hides and skins are collected as a by product of meat production (ii) intermediaries, often playing an important role in collecting and trading raw hides and skins (iii) tanneries, transforming raw hides and skins into finished leather through capital-intensive processing steps; that is, tanning (producing wet-blue leather), crusting (crust leather), and finished leather. Many tanneries in the global periphery do not have the capacity to perform all the processing steps and only produce lower value and semi finished, rather than finished leather. (iv) leather manufacturers to labor intensively produce leather products for a variety of end use markets (footwear, apparel, bags, and furniture). (v) Buyers (intermediaries, branders, and retailers) play an important role in distribution through sales channels at the wholesale and retail levels, and different leather items are traded locally and internationally at different points in the Leather and leather product (Gereffi et al., 1994).

The outlets for European produced leather products are particularly footwear (41%), leather goods (19%), furniture (17%), the automotive industry (13%) and clothes (8%). Italy is also the main European Union importer of finished leather, but with a substantially lower market share (15%) compared to raw and semi-finished leather. Over the last few years, restrictions on exports of raw and semi-finished leather by a number of countries have provided a challenge in terms of access to raw materials for the European Union industry, in particular with the decline in production of skins and hides (European Commission, 2018).

Leather and leather products export have been growing in recent years. This is mainly because of growing export levels of foreign owned tanneries engaged in the sector. Very few of the domestic tanneries have the technological capacities required for export production. Finished leather export destinations are China (50%), Hong Kong (17%), UK (7%), Italy, Thailand, India, Vietnam, and Indonesia. In terms of main exporters to the EU, Brazil had a market share of 25%, followed by India (18.2%), Pakistan (9.4%) and Turkey (6.3%), in addition to Russia and South Africa. European Union imports of crust or wet blue leather are substantially lower. In terms of exporters, China is by far the largest supplier of leather products to the EU with a share of 55% of total European imports (UN, 2018).

African countries are fast emerging as the leading suppliers to the global market for raw hides and skins. Ethiopia is fast emerging as one of the future markets for sourcing quality leather and hides

for the booming global leather industry. Leather and leather products are among the most widely traded and universally used commodities in the world. Already, the total value of annual trade is estimated at 1.5 times the value of the meat trade; more than five times that of coffee and more than eight times that of rice (LIDI, 2017).

In terms of leather imports, Italy is main destinations, almost a third of total European Union imports. This is due to the importance of Italy as a producer of leather in the European market and in the global market. In terms rank, Italy is the main EU importer of crust and wet blue leather with an overall share of 76% of total EU imports. Spain is the second importer with a share of 11.2% followed by France (4.3%) and Portugal (2.8%). With regards to exporters EU and Nigeria is the largest trader with a 49% share imports of crust and wet blue leather, followed by India (23.7%), Kenya (5.9%), Uganda (3.4%), and China (3.3%) (UN, 2018).

The leather industry's export target of $ 8 billion by the year 2020 can only be achieved by finalizing long-term raw material supply from Africa. Exporters in India have already identified Africa with its huge livestock population as a good source of hides and skins. African countries have 20% of the world's cattle, sheep and goats, but produce only 14.9% of world output of hides and skins. They have 10% of the world's cattle but produce only 4.5% of bovine hides. Their exports of hides and skins have fallen in recent years from 4% to 2%, and their tanning capacity from 9.2% to 6.8% (LIDI, 2017).

In 2017, the most important exported leather products were gloves (79%), bags (11%) and cases (8%). Other products such as jackets, belts and wallets are currently of lesser importance. The US is the largest importer of Ethiopian leather products (66% by value in 2017), followed by the EU (24%, in particular Germany, Italy and the UK), China (6%) and Japan (2%). Generally, in most countries, investment of leather product industry and macroeconomic policies based primarily on livestock or plant resources. While there is no specific investment promotion for the leather industry sector (Jabbar et al., 2002), this sector has been commonly identified as a priority sector for industrial development in most African leather producing countries.

Figure 2.2. Sample of Export Leather and Leather Products



Source: LIDI Documentary Picture of Leather Product, 2020

2.1.3 History of Leather Product in Ethiopian by Different Regime

An analysis of the three development phases revealed the shifting and conflictual relationship between different groups of firms and state institutions' strategies that structure the development industrial policy regime, and GVC integration of the leather sector. Successive regimes adopted different policies for the development of leather industry. The development of the leather sector, however, has been severely constrained by the lack of sectoral and local embeddeness of locally and foreign-owned tanneries, respectively, explaining the weak link between tanneries and manufacturers, as well as the absence of a joint project of transformation in the prevailing industrial policy regime. Ethiopia has seen three regimes over the last eight decades. That is, Imperial regime (up to 1974), Dergue regime (1974-91), EPRDF-led regime (since 1991).

2.1.3.1. Imperial Regime (Up to 1974)

The government under the Emperor Haile Selassie started to regulate the sector and established the Livestock and Meat Marketing Board in 1964 (Abebe and Schaefer, 2015). Ethiopia has one of the largest livestock sector in the world and the formal leather sector has almost existed for a century (LIDI, 2017).

2.1.3.2. Derg Regime (1974-91)

Derg regime (1974-1991) nationalized the economy and managed eight tanneries and six large shoe factories through the National Leather and Shoe Corporation (Abebe, 2014). Raw hide and skin exports pre-dominated during the Imperial and Derg periods, until being banned in the 1980s

to secure in put for the increasing capacity of nationalized state-owned leather product firms (Oqubay, 2015).

Ethiopia's developmentalism was inspired by East Asian development models and can be characterized as an elite-driven legitimization project, with strong links to the Tigray People's Liberation Front (TPLF), in the context of amulti-ethnic state. The development model includes a mix of import-substituting and export oriented industrialization, making extensive use of selective industrial policy (Oqubay 2015, 2018).

Derg-regime expelled foreign investors and established the National Leather and Shoe Corporation to manage eight tanneries and six large shoe factories (Abebe and Schaefer, 2015). With the end of the Derg-regime came a reorientation towards market-oriented economic reforms and privatization processes. This, in combination with an industrial policy focus implemented since the early 2000 allowed for the expansion of and upgrading in the Ethiopian leather and leather product sector, leading to increasing FDI inflows and local investments since the mid-to-late 2000 and early 2010.

2.1.3.3. EPRDF-Led Regime (Since 1991)

The end of the Derg regime in 1991 marked the beginning of Ethiopia's transformation, leading to the emergence of what has been described in the literature, and not least by the government itself, as a developmental state (Clapham 2018). Since 1991, the industrial policy regime of, and upgrading processes in, the Ethiopian leather sector have been divided into three phases, which are reflected in the sector's export structure.

2.1.3.3.1. First Development Phase (1991-1997)

The first development phase was characterized by general economic reforms and the increasing sectoral dominance of privatized and locally-owned tanneries. The operation of the agricultural demand-led industrialization strategy since 1994 incentivized investments, mostly through a horizontal industrial policy, but did not initially focus on the leather sector. As a result, state-owned tanneries and leather manufacturing companies were privatized and a new wave of private domestic investment in tanning and leather footwear manufacturing emerged, accounting for 21% of total sectoral investment inoperations between 1992 and 2014. Tanning provided an opportunity for local entrepreneurs to enter the export business and access foreign investment to finance more

profitable import businesses, there after shaping their strategic orientation. Manufacturers, by contrast, were mostly geared toward the protected local market in light of high margins and relatively strong competition in the global market (EIC, 2018).

Foreign investment in the tanning segment was largely restricted until the early 2000s in order to protect domestic tanneries from competition (Brautigam and Tang, 2013), highlighting their political influence and explaining why the sector was almost exclusively dominated by locally-owned firms during this period. The first and early second development period, however, were characterized by an increasing structural dependence of the Ethiopian developmental state on leather exports, explaining the growing economic and political weight of privately and locally-owned tanneries in the leather sector and the Ethiopian economy. The economic importance of tanneries was indicated by the 13% average proportion of leather exports in total exports between 1993 and 2003 (UN, 2019).

The emerging power of tanneries in the Ethiopian leather sector was institutionalized through the foundation of the Ethiopian Tanners Association in 1994, established by six state and two privately-owned tanneries with support from the government (Abebe, 2014).The association was dominated by privatized tanneries soon after its establishment, but according to Oqubay (2015), there is limited evidence that the privatization process benefitted social forces directly connected to the ruling party. There were, nonetheless, close links between the tanneries and the political elite; i.e., Sheba Tannery, which was founded by the Endowment Fund for the Rehabilitation of Tigray (EFFORT), a business group closely affiliated with the TPLF (Gebremichael, 2011).

Leather and Leather Products Technology Institute (LLPTI) was established by Council of minister regulation number 41/1998 and restructured by the name of Ethiopian Leather Industry Development Institute (LIDI) by council of minister regulation number 181/2010. Leather Industry Development Institute was founded in 1991 as the Institute of Leather Products Technology before giving its name today. The institute re-established in 2002 aims to further expands the industry's competitiveness and rapid development by accelerating the development and transformation of the leather and leather products industries through acceleration and rapid development. The level of industrialization in the country is very low, with the shares of the manufacturing sector accounting for less than five percent of Gross Domestic Product (GDP) in the past decades.

Recently, Ethiopia engaged the very low end of the leather and leather product exporting mostly raw hides and skins or low value leathers, despite having important locational advantages. Largeherds of goats, sheep and cattle, low labor costs and duty free quota free access to key intake markets. Quality of Ethiopia's sheep and goat skins is globally valued for its softness and durability. Given the size of livestock populations relative to the local market, exports and, thus, their integration into regional and GVC are an vital source of demand for the Ethiopian leather and leather product industry, although the sector was almost exclusively geared toward the local market until the 1990s.

In an effort to turn this growth pattern and the vision of the regime for the industrial sector into a reality the system gives great attention and priority for the leather sector and established LIDI with the main objectives of leather sector development and competitiveness of the sector in the global arena by council of ministers regulation No. 181/2010. One of the main priority sectors is the leather and leather product sector given its direct links to agriculture through the livestock sector as well as its labor intensity, relatively simple technology and large export potential. Ethiopian leather and leather product sector has experienced significant growth dynamics in production, employment and exports as well as upgrading processes in recent years (UN, 2018).

In addition to the long-term trade growth due to geographical and organizational shifts in the leather and leather product, they develop three further major trade trends can be identified in the last decade. First, leather and leather product trade growth by value has slowed down since 2009. However, leather products, particularly bags, have been an exception to this trend. Growth rates for leathser and leather footwear have been particularly weak. Second, global trade of leather and leather product by value has decreased since 2014 due to falling retail prices and a shift in consumer demands in key consumption markets, in particular a trend towards the use of synthetic materials. It remains to be seen whether or not this trend will continue in the near future. Third, developed countries such as China's market share in key consumption markets is decreasing in the last years due to rising wages, which opens a window of opportunity for low-cost suppliers such as Ethiopia is the best models (Jan and Werner, 2019).

2.1.3.3.2. Second Development Phase (1998-2007)

The second phase was characterized by the expanding capacity of industrial policy institutions and a more selective approach to industrial policy due to the increasing focus of the political elite on promoting industrialization and exports. The Export Promotion Strategy of 1998 first identified the leather and leather product industry as a strategic sector for promoting exports, foreign exchange income, and employment, given its labor intensity and comparative advantage in terms of the availability of raw hides and skins and low labor costs. The government established the Leather and Leather Products Technology Institute (LLPTI) during the same year in order toprovide sector-related training. The Industrial Development Strategy (IDS) of 2002/03 and the following five-year Plan for Accelerated and Sustained Development to End Poverty (PASDEP, 2005/06-2009/10) developed a more comprehensive strategy for promoting industrial development and for moving the leather and leather product to ward the production and exportation of higher-value leather and manufactured goods through selective industrial policy.

A key strategic industrial policy objective was the development of the finishing capacity of tanneries to increase high-value added leather exports and strengthen the link between tanneries and local manufacturers. Upgrading from semi-finished to finished leather is highly demanding (but, interms of added value, also potentially highly rewarding) because local tanneries not only need to invest in and develop the skills to produce more technology-intensive and buyer-specific finished leather, but also attract and fulfill the demands of different types of buyers leather manufacturers and global buyers.

2.1.3.3.3. Third Development Phase (2008-2018)

The third phase was characterized by an industrial policy shift that facilitated FDI-driven investment, upgrading, and exports at the cost of locally owned tanneries' economic and political power. The new dominancy of FDI, in particular from China, also recoupled the industry toward US and Chinese markets. The key industrial policies implemented and amended during the third development phase to some extent coincided with the five-year GTP (2010/11-2014/15 and 2014/15-2019/20) that prioritized foreign exchange earnings, employment growth, and the attraction of FDI in the sector, and included: (i) amended conditions and incentive structures for finance, access to foreign exchange, and input supply in support of exporting firms, (ii) strengthened sectoral institutional capacities through the reform and rebranding of the LLPTI to

the LIDI, supporting the industry through policy advisory and consulting services, marketing, logistics, testing, training, and more, (iii) the introduction of export taxes on semi-finished leathers to incentivize functional upgrading of tanneries and foster the link between tanneries and local manufacturers, and (iv) the attraction of FDI to industrial zones and parks through economic diplomacy and extended discretionary authorizations of foreign investment in the tanning sector (Brautigam et al., 2018).

2.1.4 Structure of Leather Sector in Ethiopia

Ethiopian Leather Industries Association was established in 1994 and represents the interests of local and foreign owned tanneries and leather manufacturers. The association currently has 75 members and provides market information services, market promotion activities, assists with the importation of inputs and functions as a bridge between the government and the private sector. Many micro- and small enterprises in the sector are also organized in clusters and cooperatives, often consisting of sub-networks. The most important clusters are located in Addis Ababa and include the Ethio-international footwear cluster cooperative society, the Merkato cluster and the Kirkos Leather Goods Cluster, comprising a total of 377 enterprises and employing almost 4,000 workers (UNIDO, 2016).

Many other civil society organizations, such as the Addis Ababa Institute of Technology, or the Women Entrepreneurs Association, are to some extent involved in the Ethiopian leather sector.

2.2 Empirical Literature

In today's world, no one can deny the importance of globalization and international market. A balance of payment of import and export is a macroeconomic device of international trade and that gives rise to world economy and best contribution for the country economic growth. In fact, financial flow and net export has become very important for every country of the world is it big or small developing nation or developed nation. Favorable export and net financial flow tricky is a major contributing factor of economic growth in any country economy and as surplus increases GDP (Berg and Miao, 2010).

2.2.1 Related Studies in the Rest of the World

The intention of this section is to review related studies elsewhere out of Ethiopia to have a deeper understanding of the export of leather and leather product. There are several studies that

have attempted to explore macroeconomic variables and leather and leather export determinants. Lee and Tang (2000) made to analyses an econometric regression to assess competitiveness and productivity levels in Canada and US established leather product industries. They found that Canadian manufacturing leather industrial sectors as competitive advantage as that of a United State industrialized sector in 1979. However, the Canadian manufacturing sector's relative competitive position worsened between 1979 and 1995 while its relative output of leather and leather product increased by about 4%. This some how reflects the points of leather product industry as generic and highly contribution for the enhancement of economic growth.

The inter linked global economy, consumers are used to seeing products and produce from every corner of the world in their local malls and stores. These overseas products or imports provide more choices to consumers and help them manage strained household budgets. But too many imports coming into a country in relation to exports which are products shipped from the country to a foreign destination can distort a nation's net export and devalue its currency. The value of a currency in turn is one of the biggest determinants of a nation's economic performance of the country. As a result, even in an event of depreciation in their exchange rate, imports are still bound to increase given the necessity of the produces (Alege et al., 2015).

Arugna et al., (2005) explors archaeological studies have shown that hides and skins have been used since antiquity as clothes, vessels, bedding, and possibly structurally in ancient dwelling places. At present, leather is used in various applications. Hides and skins raw materials for the tanning industry are renewable and easily perishable resources. Their production is dependent on the rearing, management and disposal of the livestock population. The availability of hides and skins through slaughtering or death of livestock is particular importance to the leather industry. Hides and skins could be obtained from fish, birds, and reptiles as well as wild and domesticated animals.

Many empirical analyses used both multi-country panel regressions and econometric models applied to individual countries conducted to show how financial flow affects the net export of developing and developed countries. Among the empirical studies dealing with the exchange rate, net export and economic growth nexus is a great majority issue, to find a correlation between exchange rate and economic growth for broad geographical samples of developed and developing

countries. More overvalued exchange currency trended leads to slighter per capita growth rate and net export improvement (Donald et al. 2010).

Brinkman (2010), in a study focused on the competitive position of Canadian husbandry, provides a conceptual framework integrating the various determinants of competitiveness leather product. The effectiveness of the production of leather is the result of a combination of both domestic and international factors. At the national level, natural resource endowments and human capital are key determinants of competitiveness of leather product. The technical progress acts on factor productivity of leather product and thus determines the comparative advantage. A major contribution of the research is the construction of a technology index, which intended to capture the technological capability of firms. Firm-level capabilities classified into production, investment and linkage activities following the taxonomy espoused by Lall et al., (1992).

A scoring system assigned in each classification to build the index. A corollary objective of the study is to determine the factors affecting technological capabilities of firms. The study showed that firm size, engineering and technical workforce, employee training and external technical assistance have significant and positive influence on export behavior while foreign ownership and age in production showed no significant influence. A related study stressing technological capabilities and firm-level export competitiveness for East and South East Asian economies was also conducted focusing on three industries electronics, auto and garments (Rasiah et al., 2003).

Van Dijk (2002) attempted to determine the factors affecting export performance of Indonesian manufacturing firms. It highlighted the importance of sectorial variation in determining export activities and concluded that relative size, foreign ownership and age were significant factors across all sectors while skilled labor differs according to the industry, which the firm belongs. The study also demonstrated that research and development activities in Indonesia only benefit exports in relatively mature industries, while capital intensity does not influence export behavior in scale-intensive firms.

Jan Grumiller and Werner Raza, (2019), the Ethiopian leather and leather products sector, an assessment of export potentials to Europe and Austria. Structural transformation and export diversification into higher value-added products and away from primary commodities remain major development objectives for low-income countries (LICs). Sectors such as apparel or leather products have traditionally been gateways to export diversification for LICs and are generally

regarded as first steps for developing countries embarking on an export-oriented industrialization process. Given their rather low entry barriers and labor-intensive nature, the sectors can absorb large numbers of unskilled workers and provide upgrading opportunities into higher value added activities within and across sectors. The defining characteristics of these sectors also mean that they are very competitive, leaving many suppliers with limited leverage and challenges in ensuring social and environmental compliance and longer term development benefits.

2.2.2 Related Studies in Africa

In Sub-Saharan Africa (SSA), many countries have a large livestock sector, but only a few countries have managed to successfully integrate themselves into the Leather Product beyond the supply of raw materials or low value leathers (UN, 2019). A major challenge for SSA countries is the development of a tanning industry, given the limited supply of quality raw hides and skins in the context of traditionally-organized livestock sectors.

Francis Wanyoike et al, 2018, an analysis of the hides and skins value chain in Somaliland. Livestock is the main source of livelihood and national income in Somaliland. However, it is increasingly being recognized that Somaliland needs to diversify its export portfolio and range of export markets in response to the declining rate of growth of live animal exports. Enhanced trade in hides and skins, leather and leather products presents a potential means for fostering the diversification of the Somaliland exports. Surprisingly, despite a growing body of literature on the marketing of live animals in Somalia, not as much is known about the marketing of hides and skins. Despite insignificant levels until the 2010s, Ethiopia accounted for 85% of leather footwear and 19% of leather product exports from SSA by 2017 (UN, 2019).

A value chain analysis was conducted to map the hides and skins value chain in Somaliland, generate an understanding of the constraints hindering the performance of the value chain and identify potential opportunities to upgrade the value chain. The findings show that the hides and skin sub-sector employs over 1,190 individuals, 1,050 men and 140 women. Hides and skins collectors account for most of the value chain actors (77%) compared to wholesalers (17%), exporters (5%) and dry hides and skins exporters (4%). Tanning activities generate relatively high number of jobs and value addition, but only up to the wet blue processing stage. The exports of hides and skins sector has declined in recent years by 30% between 2014 and 2016 and this resulted

in the closure of two tanning factories. The situation is attributed to increased competition in the international market, according to the interviewed value chain actors.

The financial loss to Somaliland due to the reduced volume of hides and skins exported in 2016 was estimated at more than USD 1.9 million worth of sheep and goat skins and USD 1.12 million worth of camel hides. The challenges facing the sector include the low quality of hides and skins due to defects accumulated before, during and after the slaughtering of animals and the lack of harmonized policy and coordination among government agencies involved in the regulation of the sub-sector. It was recommended that government and other development agencies needed to support the sub-sector to unlock its potential in the fight against unemployment and poverty starting with the formulation of a leather sector development policy and strategy.

The developed strategy should, among others, put emphasis on improving the quality of hides and skins produced in the country, upgrading of the existing animal slaughter facilities and equipment, and building the capacity of personnel involved. Other aspects should include the adoption of salt recovery technologies such as those being used in tanneries in Ethiopia in order to make the industry more environmentally friendly, and the intensification of value addition beyond the wet blue, so as to produce finished leathers as well as leather products.

2.2.3 Related Studies in Ethiopia

Lisanework et al., (2018), explores leather and leather products export plays an important role in Ethiopia's economy, influencing the level of economic growth, employment and balance of trade. Given the central role of leather and leather products exports in the economy, it was important to identify the factors affecting leather export. Thus, this paper identify the factors that affect Ethiopia's leather and leather products using gravity model for a sample of 43 trading partners, over a period of 2000-2016.

In addition, the paper investigates whether there is unexploited trade potential between Ethiopia and its trading partners within this sector. The empirical results show that importer's GDP, FDI and Ethiopia's domestic infrastructure exert positive and significant impact on leather and leather products exports, while geographical distance had a negative and significant impact. On the other hand, results also point out that market access preference, bilateral real effective exchange rate and Ethiopia's GDP play insignificant role in enhancing exports performance. Furthermore, the analysis shows that export potential exists with 31 of sample countries while 12 destination

markets over used. Finally, the paper ends with some policy recommendations aiming at to improve the performance of Ethiopian leather and leather products exports (Lisanework, 2018).

Asresu et al., (2014) The study aimed to identify factors that affect the decision and extent of market participation. Data were collected from 357 households and 1030 goats that are marketed. Focus group discussion was conducted to point out households marketing strategies. The study attempted to see both supply and demand side issues in different angles.

To this effect, the ordered probit and multiple linear model were estimated simultaneously using full information maximum likelihood estimation. All factors that affect market participation decision except distance to market, goat owned, and price of goat determined the extent of participation of net buyers, autarkic and net sellers. Transaction costs had indispensable role on why commercialization of goat is limited. Implicit price analysis using ordinary least square estimation resulted estimates with standard errors that are heteroscedastic (Asresu, 2014).

As a result the study employed alternative robust estimation methods and based on Akaike, Bayesian and log-likelihood criteria of model selection, the modified structural heteroscedastic-in-mean is more appropriate for examining implicit price function. Empirical results regressed using those models as well as qualitative analysis of focus group discussion was consistent especially regarding marketing behavior of households. That is the negative sign of price risk premium shows that net sellers are not responsive to the change in price implying sellers that opt to sell are somewhat more desperate for cash. This is also in line with marketing strategies of households. The study mainly recommended improving access to information to promote both market participation and market orientation (Asresu, 2014).

Kifelew et al., (2018), the main purpose of this study was to identify the determinant factors that influence the export competitiveness of leather industry in Ethiopia. The researcher used explanatory type of research design to explore the relationship between competitiveness and its determining factors. The research study was based on both primary and secondary data. The primary data obtained through a structured questionnaire prepared for leather manufacturer and export companies Whereas the secondary data from reports, published and unpublished documents from leather manufacturer and export companies and different organization. The total population of the study was 340 managers of 68 leather manufacturer and export companies which are 5 managerial position employees from each leather manufacturer and export companies.

The random sampling technique was used to select 184 leather manufacturer and export companies managerial position employees. The study used raw material, quality, marketing strategy, government regulation and incentives, skilled labour force, infrastructure, capital, technology, managerial capability and industry and institution linkage as independent variables and competitiveness as the dependent variable. Demographic and socio-economic conditions of sample respondents and determinant factors of competitiveness analyzed by using descriptive statistics like mean, standard deviations and percentage. Multiple Regression analysis applied to analyze the data generated from structured questionnaire and to identify the impact level of independent variables on the dependent variable. The study found that of the internal factors: marketing strategy, quality, skilled labour, information technology and managerial competency have a positive impact on competitiveness, whereas from the external factors raw material, government regulation and Industry and Institution linkage have a positive impact on competitiveness. Capital from the internal factors and infrastructure from the external factors are not the determinant factors of competitiveness (Kifelew, 2018)

Berhanu (2005) and Bigsten and Gebreyesus (2009), ones which were quantitative principally address the export of leather product as a whole and did not deal with specific sectors ignoring the fact that disaggregating the sector would have different response in export performance of leather product and investigate the internal and external factors to the firms. The causes of the leather product export keenness of diverse productions in different countries, even yet a common covenant cannot reach for sure, Sisay (2010), Yishak (2009) and Lemlem (2009).

Leather and leather products sector was identified as one of the main priority sectors. Ethiopia has adopted an active, state driven industrial policy aimed at linking the Leather sector to global value chains. The Leather and leather products represents a classic example of a buyer-driven value chain which is characterized by decentralized, globally dispersed production networks, coordinated by lead firms, which control activities that add “value” to productsbut often outsource all or most of the manufacturing process to a global network of suppliers. Similar to other industries, the Leather and leather products has experienced important geographical and organizational shifts in the last few decades. These shifts entailed further participation of developing and emerging economies in the transformative stages of the industry, beyond the supply of hides and skins for manufacturing in the advanced economies, and are reflected in increasing global trade values over time. China,

in particular, has emerged as a key location for the manufacturing of leather products (Jan et al., 2019)

In addition to the long-term trade growth due to geographical and organizational shifts in the leather and leather products, three further major trade trends can be identified in the last decade. First, Leather and leather products trade growth by value has slowed down since 2009, with the important exception of leather bags. Second, global trade of Leather and leather products by value has decreased since 2014 due to falling retail prices and a shift in consumption patterns in key markets, in particular a trend towards the use of synthetic materials. It remains to be seen whether or not this trend will continue in the near future. Third, China's market share in key consumption markets has been decreasing in the last few years. The EU remains an important player in the global leather trade as both an importer and an exporter of leather and leather products. The leather and leather products industry has, however, experienced significant changes over the last few decades.

Similar to apparel, a growing percentage of leather products consumption is now met through imports. The dynamics of EU imports were similar to global trends, with increasing imports in the last two decades, a slowdown since 2009 and depending on the product partially negative growth rates since 2014. China enjoys a dominant position in many market segments in the EU, but its share is decreasing. A number of EU countries maintain relatively large leather manufacturing sectors, in particular Italy, which managed to build a very strong position in the high-value added luxury segment of the market (Werner et al., 2019).

Birkinesh Gonfa, (2012) explore competitiveness of Ethiopian shoe industry and response to export market. The main purpose was to find the factors that are impediments to competitiveness of the shoe industry at firm level and to find out the peculiar problems of shoe manufacturing in the export activities. The result depicts that the very low status of competitiveness of the Ethiopian shoe industry. At the firm level, all the determinants of competitiveness are found to be insignificant. Among the factors, related and supporting industries and factor conditions mainly limit the firms from utilizing their cost advantage to sustain market share in the domestic as well as on the international market.

Trade openness, the higher the demand for national exports, the higher the demand for the national currency. The reason is that as terms of trade is the ratio between the export price and the import

price for overall commodity prices. A fluctuation in terms of trade openness is primarily reflecting changes in the commodity prices rather than volume of trade. The findings on the effects of trade openness on import demand show that an increase in the tariff rate reduces imports both at the aggregate and disaggregated levels. An increase in income positively influences the aggregate and disaggregated levels of imports. An increase in prices positively influences the aggregate and disaggregated levels of imports (Wyplosz et al., 2012).

Broad money is a measure of the total amount of money held by households and companies in the economy. Broad money is made up of bank deposits which are essentially from commercial banks to households and companies and currency mostly from the central bank. The two types of broad money bank deposits make up the vast majority 97% of the amount currently in circulation. Instead, it credits their bank account with a bank deposit of the size of the mortgage. At that moment, new money is created. For this reason, some economists have referred to bank deposits as fountain pen money created at the stroke of bankers' pens when they approve loans (Michael et al, 2014).

Wegayehu, (2016) studies the effect of export tax on the competitiveness of ethiopia's leather industry. Most countries have implemented export-oriented development strategies with the objectives of improving their economic stability and improving resource allocation efficiency. Conversely, export taxes can have a negative impact on the producers of raw materials and externalities for trade partners. The government of Ethiopia applied a 150% export tax on raw hides and skins (RHS) and semi-finished leather products in 2008, and another 150% export tax on crust leather in 2012 in order to encourage the leather manufacturing industry. The aim of this study is to examine the export trends of Ethiopia's raw hides and skins and finished leather products, and to analyse the effect of export tax on Ethiopia's leather industry's export competitiveness. A linear trend analysis model was used to analyse the export trends of raw hides and skins and finished leather products. This study evaluated export volume data from 1997 to 2014 in order to estimate the trend coefficients. The results of the model showed that Ethiopia's row hide and skin and semi-processed leather products export had declined by -38.06% and significant at 1% significant level; this is due to the heavy export tax imposed by the government to increase the production and export of finished leather products. Mean while, finished leather products and footwear have increased by 75.34% and 44.37% respectively, and significant at 1% significant level. The comparative advantage analysis was used to examine the revealed

comparative advantage (RCA) of Ethiopia by comparing selected countries. The results indicated that Ethiopia was a RCA of raw hides and skins and semi-processed leather products more than one (RCA > 1) before 2008; after the export tax implementation in 2008, the RCA became decreased, conversely, the RCA of Ethiopia's finished product more than one for the period 2006 to 2014 and increased more after 2008. South Africa has comparative advantage only on the export of raw hides skins and semi-processed leather product (RCA>1). Nigeria was not stable RCA for both raw hides and skins and finished leather products and in most year revealed comparative advantage greater than one (RCA >1). The RCA indexes of footwear for all three countries were less than one except Ethiopia in (2007, 2008 and 2012).

The RCA provides information on advantage to exports, such as product comparisons with other competitive countries. However, the RCA does not show the sources of advantage (growth), therefore the constant market share (CMS) model was used to indicate the source of advantage. The CMS model has been used to evaluate the competitiveness of Ethiopia's leather products. The export value data of 2007 were used as the base year, whereas data in 2013 were considered as the year after the export tax implementation and increase. The results indicate that the implementation of the export tax has reduced the competitiveness of raw hides and skins and semi-processed leather products, but increased the competitiveness of the finished leather products in the world markets (Wegayehu et al., 2016) The overall results showed positive export growth (2.55), which is most likely achieved by an increase in the export competitiveness of the leather industry of 2.25. The positive competitiveness value indicates that Ethiopian finished leather products are competitive with other exporters in selected markets (Italy, China and Hong Kong). Conversely, Ethiopia's leather products have negative commodity composition effects and market composition effects (-0.132 and -0.262, respectively). The negative commodity composition effect shows that, because of the export tax, the export of Ethiopian raw hides and skins and semi-processed leather products have decreased, while the imports of these products have grown faster in selected markets.

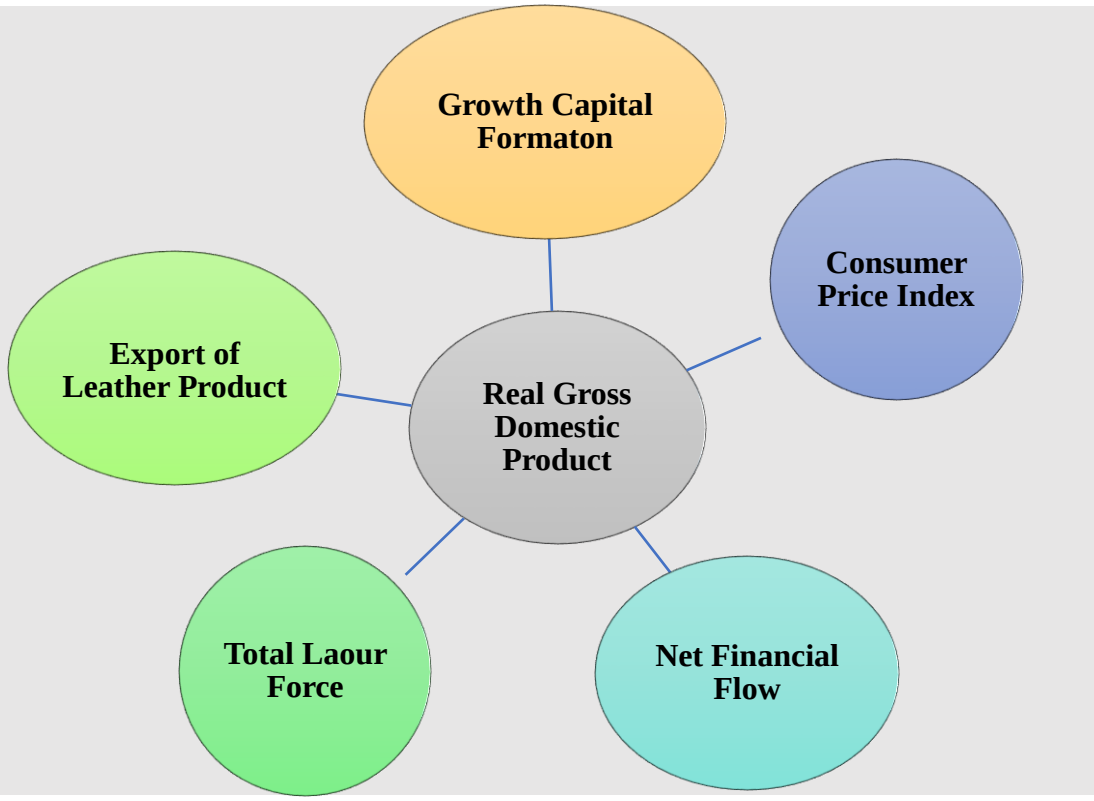
The same is true for negative market composition effects; because of the export tax, the demand for raw hides and skins and semi-finished products decreased in selected markets. Finally, after review of different review, mention and put clear research gap. Majority of studies was concentrated on leather and leather products exports, export performance and exports potentials

but not add its contribution of economic growth and use of time series is very well and fills the paper gaps and achieve the ultimate objective.

2.3 Conceptual Framework

The framework is used to empirically analyze how lead and upstream firms, as well as different institutions' strategies, that they have structured and restructured the Ethiopian leather and leather products export, industrial policy regime, and coupling and upgrading the product in order to maximize the competitiveness of the product. Empirically, the paper analyzes the influential association between export of leather and leather product and its contribution of economic growth and the state's strategies, that structure and re-structure the development, industrialpolicy regime, and GVC/GPN integration of the Ethiopian leather and leather products export. Generally, this conceptual frameworks adopted from the empirical literature and research model regarding leather and leather products exports and its contribution to economic growth in Ethiopia**.** The general framework of economic growth and its contributing aspect is explained in the following diagram.

Figure 2.3: Conceptual Frameworks



Source: own computations, 2021

CHAPTER THREE

3 METHODOLOGY OF THE STUDY

3.1. Type and Source of Data

Data type and source the study was employed full of secondary data. The data was analyzed by applying time series model that, the year covered from 1984/85 up to 2019/2020. The sources of data would collect from National Bank of Ethiopia, Ministry of Finance and World Bank, Central Statics Agency, Ethiopian Gumruk Commussion and Statistical Publication from different governmental ministerys.

3.2. Method of Data Analysis

The study applies both descriptive and econometrics method of analyses. The descriptive statistics could be used trend analysis, Mean, Median, Standared Devations, Maximum, Minimum, Skewness and Kurtosis in order to show the effectiveness of leather and leather product export and its contribution for economic growth in Ethiopia. The econometric analysis could be used for Unit Root Test by using Agumented Decky Fuller test, Vector Error Corection Model, and Johanssen Cointegration test by statistical software package of Eviews 9.0 for data presentation and analysis.

3.3. Model of Specification

In this paper, the researcher was completely used time series data and the study able to investigate and analysis leather and leather product export effects and its contribution to the economic growth in Ethiopia. The dependent variable of RGDP and independent variable is given by natural logarithms and as a function of independent macroeconomic variable. The study has been used economic frame work and simple statistical description. The equation of regressions on this study is generally built around two sets of variables of dependent variable and independent variables. The model is formulated as a function of real growth domestic is the dependent variables and a function of export and other supportive variable are independent variables follow;

$$RGDP_t = F(EXLP_t, GCF_t, TLF_t, NFF_t, FR_t, U_{t1}) \quad (3.1)$$

Where, $RGDP_t$= is Real aggregate output at time t and the subscript t denotes the time period.

$EXLP_t$= is Export of leather product at time t

GCF_t= is Gross capital formation (investment) at time t

TLF_t= is Total labor force at time t

NFF_t = is net financial flow leather and leather product at time t

FR_t= is foreign reserve at time t

Therefore, the given function of the regression is developed as;

$$RGDP_t = \beta_0 + \beta_0 EXLP_t + \beta_0 GCF_t + \beta_0 TLF_t - \beta_o NFF_t + \beta_0 FR_t, + \varepsilon_t \quad (3.2)$$

The goal of most empirical studies in econometrics is to determine whether a change in one variable causes a change in, or helps to predict another variable. Therefore, based on the objectives estimated using Johansen co-integration test, VAR, VECM and granger causality test environment. All variables are transformed into natural logarithms so, that the estimated coefficients are interpreted as elasticities. The elasticity is interpreted as the response of the dependent variable that is explained by a 1% increase in the independent variable. Therefore, their first differences approximate growth rates and export of leather and leather product. On the other hand, to eliminate the impact of heteroscedasticity for economic variable time series data, all variables are in natural logarithm.

$$LnRGDP_t = \beta_o + \beta_1 lnEXP + \beta_2 lnGCF + \beta_3 lNTLF - \beta_4 lnNFF + \beta_5 lnFR + \varepsilon_t \quad (3.3)$$

Where, β_o= intercept Term, β_o and β_1 = parameter known as partial regression coefficient, ε_t= denotes error term an explained variable, t = denotes variable at time t.

Where, $LnRGDP_t$= is Real aggregate output at time t and the subscript t denotes the time period.

$LnEXLP_t$ = is Export of leather product at time t

$LnGCF_t$ = is Gross capital formation (investment) at time t

$LnTLF_t$ = is Total labor force at time t

LnNFF = is Net financial flow $leather\ product\ at\ time\ t$

$LnFR_t$ = is foreign reserve at time t

3.4. Econometrics Methods of Data Analysis

3.4.1. Augmented Dickey–Fuller Test

Augmented Dickey-Fuller unit root test is the common method of analyzing stationarity of a univariate time series. It follows a unit-root process. The null hypothesis is that the variable contains a unit root, and the alternative is that the variable was generated by a stationary process. We may optionally exclude the constant. Hamilton (1994) describes the four different cases to which the Augmented Dickey–Fuller test can be applied. ADF reports the one-sided critical values and p-value for the test of the null against the alternative hypothesis.

3.4.2. Unit Root Test

It is fundamental to test for the statistical properties of variables when dealing with time series data. Time series data are rarely stationary in level forms. Regression involving non-stationary, which is a variable that have no clear tendency to return to a constant value or linear trend time series often lead to the problem of spurious regression. This occurs when the regression results reveal a high and significant relationship among variables. when in fact, no relationship exist (Gujarati 2004).

Regression models involving time series data are often used for forecasting. We would like to know if such forecasting is valid if the underlying time series are not stationary. Empirical work based on time series data assumes that the underlying time series is stationary. Sometimes auto-correlation results because the underlying time series is non-stationary. In other words, a nonstationary time series will have a time-varying mean or a time-varying variance or both. In order to model atime series, the series has to be stationary. In practical terms, the series is stationary if it tends tow and more or less uniformly about some fixed level. The Augmented Dickey Fuller (ADF) unit root test which adjusts the presence of serial correlation by including additional lags as compared to Dickey Fuller. The hypothesis used to test unit root for all the above tests is stated as follows.

H0 = there is unit root, i.e., the time series is non-stationary

H1= there is no unit root, the time series is stationary (level stationary)

If the time series data is not stationary at level the researcher make it stationary by differencing up to second order, but if it is not stationary up to second order the time series data which the researcher collected is not economically realistic, it is better to revise the data. But if the non-stationary is due to the existence of trend it became stationary by de trending (including time period) of the time series data (Gujarati, 2004). The regression models of the ADF unit root test below:

$$\Delta Y_t = \beta_o + \beta_1 t + \delta Y_{t-1} + \sum_{i=1}^{q} \xi_1 \Delta Y_{t-1} + \varepsilon_t \quad (3.4)$$

Where ΔY_t *and* ΔY_{t-1}Are $\Delta EXLP_t$ *and* $\Delta EXLP_{t-1}$ Respectively

3.4.3. Optimal Lag Length Selection

To decide the autoregressive lag length for a time series data, optimal lag length selection is very essential in studies. Various lag length selection criteria such as the Aikaike's information criterion (AIC), Schwarz information criterion (SIC), Hannan-Quinn criterion (HQC), Final prediction error (FPE) and Bayesian information criterion (BIC) have been employed. As the outcomes of these criteria may influence the ultimate findings of a study, a throughout understanding on the empirical performance of these criteria is necessary. Before go deep into the test of co-integration, there was need for appropriated selection of the optimal lag length has been used. Estimated the lag length in many econometric analyses is very crucial exercise. The lag length in this study would be selected had be use explicit statistical information criteria obtained through unrestricted VAR estimate.

3.5. Vector Error Correction Models (VECM)

Johansen proposed an approach to investigate long-run relationship among non-stationary variables. The study was used Johansen and Juselius (1990), co-integration approach for explored long-run relationship between export and economic growth. To analyze the effectiveness of leather export to economic growth, the proxy variable, the study could be used vector error correction models (VECM). Vector Error Correction Model can be derived from ARDL through a simple linear transformation (Pesaran et al., 2001).

The reasoning for the use of these methodologies, that could allow the possibility for export of leather and leather product and economic growth to be endogenous, a suggested by endogenous growth models. The VECM integrates the short-run dynamics with the long-run equilibrium

without losing long-run information. The first step requires a determination of the order of integration of the variables of interest and the two popular tests: namely Dickey Fuller Test (DFT) and Augmented Dickey Fuller (ADF) test. The hypothesis stated as follows.

Ho: long run coefficients = 0, No co integration

H1: long run coefficients ≠ 0, there is co integration

Co-integration is a statistical property that describes long-run relationship of economic time series. This is known as the error correction term since the deviation from long-run equilibrium is corrected gradually through a series of partial short-run adjustments. When the variables are co-integrated, the corresponding error correction representations must be included in the system. By doing so, one can avoid misspecification and omission of the important constraints. Thus, the VAR in can be re-parameterized as a Vector Error Correction Model (Hamilton, 1994).

A vector error correction model (VECM) is a modeling technique which added error correction features to a multi-factor model such as a vector auto regression model. And it is a restricted VAR designed for use with non-stationary series that are known to be co-integrated. The VECM has co-integration relations built into the specification. So that, it restricts the long-run behavior of the endogenous variables to converge their co-integrating relationships while allowing for short-run adjustment dynamics. An error correction model is defined as a dynamic model in which the movement of a variable in any period is related to the previous period's gap from the long-run equilibrium. Although it may be possible to estimate the long-run or co-integrating relationship, $Y_t = \beta X_t + \varepsilon_t$ economic systems are rarely in equilibrium, as they are affected by institutional and/or structural changes that might be temporary or permanent. A simple dynamic model of a short-run adjustment model is given by:

$$Y_t = \varphi_o + \varpi_0 X_t + \varphi_1 X_{t-1} + \varphi_1 Y_{t-1} + \varepsilon_t \quad (3.5)$$

Where, Yt is dependent variable, and Y_{t-1} are lagged values; X_t is independent variable, and X_{t-1} are lagged values; $\varphi_0, \varpi_0, \varphi_1$ and ϖ_1, are parameters; ε_t is the error term assumed to be $\varepsilon_t \sim IID(0, \sigma^2)$. The problems associated with the use of the short-run model are multicollinearity, and spurious correlation. The problems are solved by estimating the first difference of equation to get,

$$\Delta Y_t=\varphi_o + \varpi_0 \Delta X_t + \varphi_1 \Delta X_{t-1} + \varphi_1 \Delta Y_{t-1} + \varepsilon_t \quad (3.6)$$

This, however, introduces problems of loss of information about the long-run equilibrium and the economic theory is differenced away. Thus, the possible solution is to adopt the error-correction mechanism (ECM) formulation of the dynamic structure. The setup is as follows.

$$\Delta Y_t= \varpi_0 \Delta X_t - (1-\varphi_1)[Y_{t-1} - \beta_o - \beta_1 X_{t-1}] + \varepsilon_t \quad (3.7)$$

Error correction mechanism satisfies the assumptions of classical normal linear regression model. Among others the assumption includes, a linear regression model, residuals are normally distributed, there is no serial correlation among residuals, and there is no perfect multi-collinearity. Where $-(1-\varphi_1)$ is speed of adjustment $\varepsilon_{t-1} = Y_{t-1} - \beta_o - \beta_1 X_{t-1}$, and the error correction mechanism that measures the distance from the equilibrium point. Therefore, the coefficient of ε_{t-1} should be negative in sign in order for the system to converge to equilibrium. The size of the coefficient $-(1-\varphi_1)$ is an indication of the speed of adjustment towards equilibrium in that; Small values of $-(1-\varphi_1)$ tending to -1, indicate that economic agents remove a large percentage of disequilibrium in each period; Larger values, tending to 0, indicate that adjustment is slow; Extremely small values, less than -2, indicate an overshooting of economic equilibrium; Positive values would imply that the system diverges from the long-run equilibrium path. Given from the above reality that, the variable was subjected to use Johansen co-integration test and if it is found that the variables are co-integrate.

The Granger causality theorem and testing relationships those constitute a vector error correction (VEC) model for output growth. Where, $-(1-\varphi_1)$ is the speed of adjustment; $\varepsilon_{t-1} = Y_{t-1} - \beta_o - \beta_1 X_{t-1}$As error-correction mechanism which measures the distance of the system away from equilibrium. Therefore, the coefficient of ε_{t-1} should be negative in sign in order for the system to converge to equilibrium. The size of the coefficient $-(1-\varphi_1)$ is an indication of the speed of adjustment towards equilibrium in that; Small values of $-(1-\varphi_1)$ tending to -1, indicate that economic agents remove a large percentage of disequilibrium in each period; Larger values, tending to 0, indicate that adjustment is slow; Extremely small values, less than -2, indicate an overshooting of economic equilibrium; Positive values would imply that the system diverges from

the long-run equilibrium path. Given from the above reality those, the variables are subjected to test by Johansen co-integration test and if it is found that the variables are co-integrate. Followed by using the Granger causality theorem, explains the relationships that constitute a vector error correction (VEC) model for output growth.

$$RGDP_t = \beta_O + \sum_{K}^{r} \emptyset_1 u_{t-k} + \sum_{q=1}^{N} \beta_1 RGDP_{t-q} + \sum_{q=1}^{N} \beta_2 EXLP_{t-q} + \sum_{q=1}^{N} \beta_3 GCF_{t-q} + \sum_{q=1}^{N} \beta_4 TLF_{t-q} - \sum_{q=1}^{N} \beta_5 NFF_{t-q} + \sum_{q=1}^{N} \beta_6 FR_{t-q} + \varepsilon_{1t} \quad \text{(3.8)}$$

$$EXLP_t = \alpha_O + \sum_{K}^{r} \emptyset_2 u_{t-k} + \sum_{q=1}^{N} \alpha_1 EXLP_{t-q} + \sum_{q=1}^{N} \alpha_2 RGDP_{t-q} + \sum_{q=1}^{N} \alpha_3 GCF_{t-q} + \sum_{q=1}^{N} \alpha_4 TLF_{t-q} - \sum_{q=1}^{N} \alpha_5 NFF_{t-q} + \sum_{q=1}^{N} \alpha_6 FR_{t-q} + \varepsilon_{1t} \quad \text{(3.9)}$$

3.6 Johansen Approach

This approach allows us to estimate and test for the presence of multiple co-integration relationships. In this method there is no a priory separation of variables into endogenous and exogenous variables. Johansen (1990), maximum Likelihood co-integration method is developed to solve the shortcomings of Engle-Granger procedure**.** Engle-Granger Approach is a residual based test of co-integration and requires the integration of the same order for all variables in the model. Once the variables are found to have the same order of integration, it takes two steps. The first step is estimating the cointegrating test through OLS. In this step, residual calculated from the estimated equation and then its stationarity is tested. If the residuals are stationary, it implies that the variables are co-integrated (Gujarati, 2004).

Basically, it can estimate more than one cointegration relationship, if the data set contains two or more time series. It relies heavily on the relationship between the rank of a matrix and its characteristic roots. However, since Johansen co-integration technique require that all the variables in the system have the same order of integration, the application of the Johansen technique are fail and when the underlying repressors' have a different order of integration (Pesaran*et al.,* 2001).

That means the trace and maximum Eigen-value tests may lead to erroneous co-integrating relations with other variables in the model when integrate of order variables are present in the system (Harris, 1999). The VAR model is formulated to determine co-integrating vector in Johansen procedure, following Davidson and Mckinnon (1999). The relationship among the co-integrated variables is tested using the VECM which avoids arbitrary selection of dependent and independent variables. The VECM describes how variables are adjusted towards the long-run equilibrium state. The coefficients of the error-correction terms indicate the proportion by which the long run disequilibrium in the dependent variables is corrected in the short-term period. Johansen represented Ho: $\pi = \alpha\beta'$ and α and β are matrices where the rows of are the r co-integrating vectors while the matrix represents the coefficient of speed of adjustment. This approach enables us to determine the number of co-integrating vectors and estimate the co-integrating vectors.

3.6. Granger Causality Test

Causality tests assume that the time series involved in analysis are stationary. Therefore, tests of stationarity should precede tests of causality.The existence of co-integration alone does not show the direction of causality. Hence, the relationship between the variables is unidirectional or bidirectional. Since the underlying series are integrated of the same order, the ordinary Granger causality test can be applied to perform causality tests. Vector Autoregression (VAR) models themselves do not allow us to make statement about causal relationships. So, the study uses Granger Causality Test.

The concept of granger causality relates to whether one variable can help improve the forecast of another. A dependent variable is said to be caused by an independent variable, if dependent variable can be predicted better from past values of both dependent variable and independent variable than from past values of dependent variable alone. Granger causality tests are tests of forecast capacity, that is, to what extent does one series contain information about the other series. It is more of an indicator of precedence than a real causal identification. Two methods for testing for causality among time-series variables are Granger causality tests (Granger, 1969) and co integration analysis (Engle, 1987).

$$RGDP_t = \alpha_O + \sum_{K}^{r} \emptyset_2 u_{t-k} + \sum_{q=1}^{N} \alpha_1 RGDP_{t-q} + \sum_{q=1}^{N} \alpha_2 EXLP_{t-q} + \sum_{q=1}^{N} \alpha_3 TLF_{t-q} + \sum_{q=1}^{N} \alpha_4 GCF_{t-q} - \sum_{q=1}^{N} \alpha_5 NFF_{t-q} + \sum_{q=1}^{N} \alpha_6 RF_{t-q} + \varepsilon_{1t} \quad \text{(3.10)}$$

The null and alternate hypotheses in this case are;

H_0: Economic growth doesn't granger cause for export of leather product.

H_1: Economic growth granger causes for export of leather product.

Ggrowth hypothesis' which suggests that export of leather product have no effect on the economic growth. It may be due to little share of GDP in the production function. That means economic First, growth is Granger cause of export of leather product. The growth hypothesis implies that export of leather product designed to increase export to GDP ratio. Unidirectional Granger-causality from real output to export of leather product would lend support for the conservation hypothesis.

$$EXLP_t = \alpha_O + \sum_{K}^{r} \emptyset_2 u_{t-k} + \sum_{q=1}^{N} \alpha_1 EXLP_{t-q} + \sum_{q=1}^{N} \alpha_2 RGDP_{t-q} + \sum_{q=1}^{N} \alpha_3 TLF_{t-q} + \sum_{q=1}^{N} \alpha_4 GCF_{t-q} - \sum_{q=1}^{N} \alpha_5 NFF_{t-q} + \sum_{q=1}^{N} \alpha_6 FR_{t-q} + \varepsilon_{1t} \quad \text{(3.11)}$$

The null and alternate hypotheses in this case are;

H_0: Export of leather product doesn't granger cause of economic growth.

H_1: Export of leather product granger cause of economic growth.

Second, feedback hypothesis suggest that export of leather product and economic growth are interdependent. Bidirectional causality between export of leather product and economic growth shows such behavior. Third, the feedback hypothesis asserts that export of leather product and real output are interdependent and act as complements to each other. The existence of bidirectional Granger-causality between export of leather product and real output substantiates the feedback hypothesis. That is export of leather product and economic growth decisions are taken independently. Furthermore, the neutrality hypothesis views as export of leather product a relatively minor factor in the policies may not adversely impact real output. The short-run causality between export of leather product and economic growth was examined using the difference of the variables. Therefore, the above models are estimating in anticipation of yielding four distinct cases.

That is,

$$\Delta RGDP_t = \beta_O + \sum_{q=1}^{N} \beta_1 RGDP_{t-q} + \sum_{q=1}^{N} \beta_2 EXLP_{t-q} + \sum_{q=1}^{N} \beta_3 TLF_{t-q} + \sum_{q=1}^{N} \beta_4 GCF_{t-q} - \sum_{q=1}^{N} \beta_5 NFF_{t-q} + \sum_{q=1}^{N} \beta_6 FR_{t-q} + \varepsilon_{1t} \quad (3.12)$$

$$\Delta EXLP_t = \alpha_O + \sum_{q=1}^{N} \alpha_1 EXLP_{t-q} + \sum_{q=1}^{N} \alpha_2 RGDP_{t-q} + \sum_{q=1}^{N} \beta_3 GCF_{t-q} + \sum_{q=1}^{N} \beta_4 TLF_{t-q} - \sum_{q=1}^{N} \alpha_5 NFF_{t-q} + \sum_{q=1}^{N} \alpha_6 FR_{t-q} + \varepsilon_{2t} \quad (3.13)$$

Finally, independence is suggested when the set of export of leather product and RGDP coefficients are not statistically significant in both cases. Data that had undergone logarithmic transformation that show no sign of causality while the untransformed data is yield significant results.

3.7. Diagnostic Test

The reliability of the VAR and VCEM model was examined in three diagnostic tests: Breusch-Godfrey (Serial Correlation), L.M. White (Heteroskedasticity) and Multivariate normality test of the VAR residuals for all the models. In order to achieve both general and the specific objectives of the study, heterosckadasity, multicolinerity, autocorrelation and the like would incorporate in econometrics part are used.

3.7.1. Heterosckadasity Test

The decision rule is that if the prob > chi^2 is sufficiently greater than 5% significanceat level, reject the alternative hypothesis and accept the null hypothesis. The researcher conclude that there is no a problem of heteroscedasticity. Because theprob > chi^2 greater than the chosen significance level and the result of the skewness and kurtosis also that there were no the problem of the normality in the model. Because the average value was greater than the 5% critical value.

3.7.2. Multicolinerity Test

Multicollinearity refers to the situation where explanatory variables are highly inter-correlated meaning that one can be linearly predicted from the others with a substantial degree of accuracy.

3.7.3. Autocorrelation Test

The prob > chi^2 is greater than 5% level of significance. So, we fail to reject null hypothesis which is at lag order one, two and three and no cerealcorrelation or reject alternative hypothesis which is autocorrelation at lag order. There for, the researcher conclude that no autocorrelation problem. The LM test indicates the presence of residual autocorrelation at lag orders. The results suggest that the residuals from the VAR model have problem of autocorrelation. The null that there is no autocorrelation at lag order is rejected. Even though the log-normalized price changes in each market are stationary, their simultaneous estimation doesn't support the previous test of stationarity.

3.7.4. Stability Tset

This test enables to check the eigen value stability condition in a VEC model fit. Inference after VEC requires that cointegrating equations be correctly specified. Although the methods implemented in rank determination identify the number of stationary cointegrating equations, they assume that the individual variables are I(1). This test provides indicators of whether the number of cointegrating equations is misspecified or whether the cointegrating equations, which are assumed to be stationary, are not stationary.

3.7.5. Normality Test

The assumptions of the classical linear regression model require checking whether the disturbances are normally distributed or not. According Chris brooks (2008), one of the most commonly applied tests for normality is the skewnes and kurtosistest. This test computes and reports a series of statistics against the null hypothesis that the disturbances in a VEC model are normally distributed. For each equation and all equations jointly, up to three statistics may be computed: a skewness statistic, a kurtosis statistic, and the Jarque–Bera statistic. By default, all three statistics are reported; if you specify only one statistic, the others are not reported. The Jarque–Bera statistic tests skewness and kurtosis jointly. The single-equation results are against the null hypothesis that the disturbance for that particular equation is normally distributed.

3.8. Description and Expected Sign of both Dependent and Independent Variables

Variables	Definition of variable	Expected sign
RGDP	Real GDP is a macroeconomic measure of the value of economic output adjusted for price changes	Undetermine
EXLP	Export of leather product	Positive (+)
TLF	Total Labor Force other growth determinants such as labor force can be included in the model.	Positive (+)
GCF	Grants being funds given to the government for specific purpose such as construction of roads, purchase of rice etc.	Negative (+)
NFF	Net financial flow is export minus import	Negative (-)
FR	foreign reserve	Positive (+)

CHAPTER FOUR

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics of Variables

Before estimating the data, it's important to describe the properties and behavior of the study variables. It is useful to take some corrective measures. So, that the variables are certainly applicable for the estimation process. The result given in the table below describes some behavior of the variables.

Table 4.1: Summary of Statistics

	LN_EXLP	LN-FR	LN-GCF	LN-NFF	LN-RGDP	LN-TLF
Mean	0.284530	8.731790	11.31911	19.12948	12.57552	17.28577
Median	0.002674	8.985722	10.96447	18.90183	12.29636	17.25583
Maximum	4.044288	11.35867	13.42349	21.12463	13.80066	17.78948
Minimum	5.113166	3.732896	9.726420	17.37772	11.67706	16.80347
Std. Dev.	2.885763	2.035180	1.110777	1.082818	0.708624	0.304266
Skewness	0.092519	-0.580041	0.683085	0.243662	0.470056	0.121598
Kurtosis	1.594849	2.554876	2.290991	1.836584	1.776125	1.749212
J-Bera	2.929337	2.251556	3.454961	2.320240	3.473284	2.367773
Sum	9.958541	305.6126	396.1687	669.5317	440.1432	605.0018
Observaion	35	35	35	35	35	35

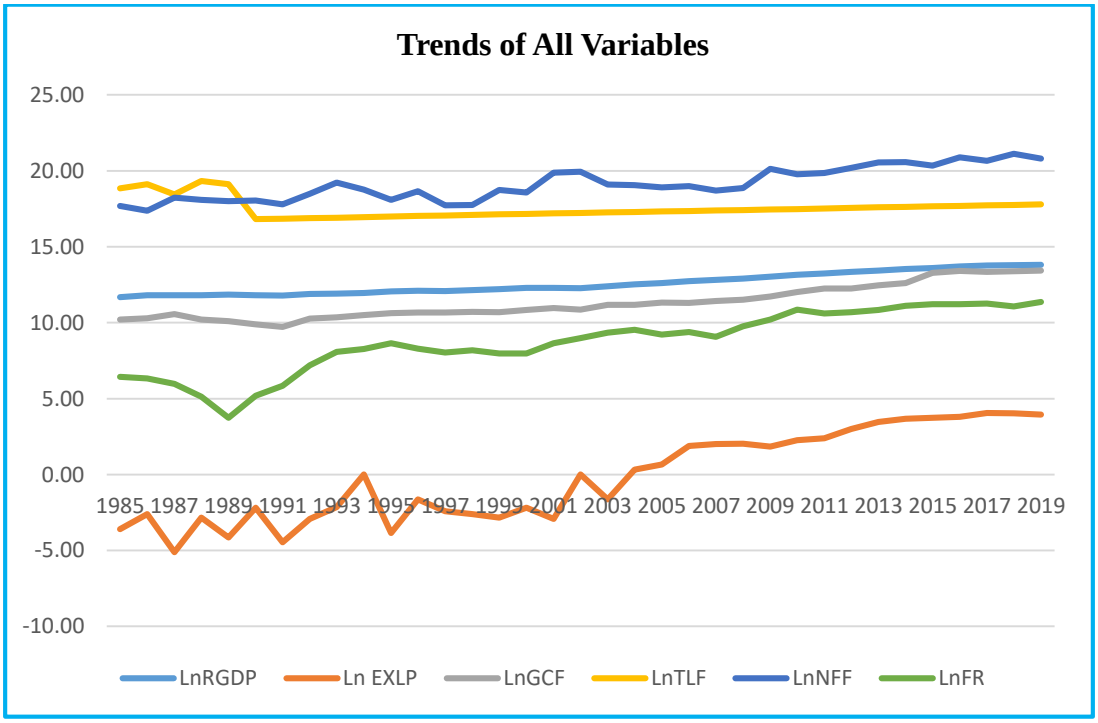
Source: Own Computations, by using Eviews 9.0, 2021

From the above summery of statistics table, the observation of all variables are equivalent and incorporate 35 observations. The growth performance of RGDP growth rate of which is equals 12.5%. This shows that, average output level or economic growth of goods and services is better progress and growth upgrading in our country of Ethiopia. A standard deviation of 0.708 with a minimum value of 11.67 and a maximum value of 13.8 for the period under study. Leather and leather product export had a mean of 0.28 and a standard deviation of 2.88 with a minimum of 5.11 and a maximum of 4.04. This result shows that, the export of leather product improvement is highly vital for economic growth and development. The stability in the long-run association between leather product export and economic growth strongly associated each other. The remaining of other variables like gross capital formation, total labour force and net financial flow and foreign reserve are inferred adjust like leather and leather export product and economic growth.

4.2. Trends of all Variables

The first objective of this study is to explores the economic growth trends of Ethiopia's lather and leather product export assistances, and the study covers over the last 35 years by using a trend analysis time serious model. A near trend analysis provides visible information on whether there has been an upward or downward trend in the economic growth of the products' of leather and leather product exports. A semi-log regression variable was estimated in which the export volumes of each product with regressed over time (over the period 1984/85 to 2019/20. Basically, Ethiopia is practiced a good trend of economic growth improve the productivity items for consumption, import-export leather and leather product. Ethiopia has experienced of strong export of leather and leather export that is leads to contribute economic growth in recent years.

Figer 4.1: Trends of All Variables in Ethiopia (1984/5-2019)



Source: Own Computations, 2021

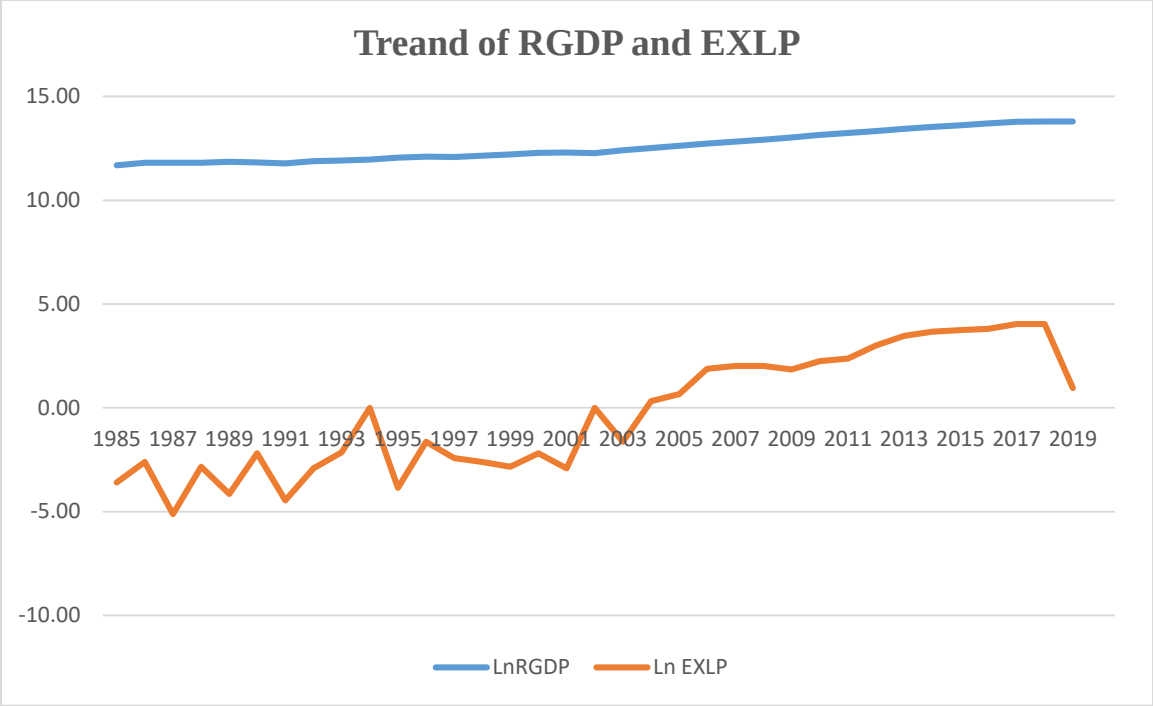
4.2.1 Trends of Real Gross Domestic Product and Leather and Leather Product Export

Real growth domestic product in Ethiopia has slowly and linearly improved during 1984/85-1990/1991. After the years of 1992/1993-2019/2020, real growth domestic product is instantly better at enlarged rate and finally value-added. These indicate that, the economic growth performance of the Ethiopia from 1984/5 to 2019/20 is relatively well and the association is a positive association with leather and leather product export that leads to achieve our objectives. The report of MoF (2017/18) recognizes that both domestic and foreign transaction can boost employment and productivity through technology transfer and generating foreign exchange. The share of export in Ethiopia is due to aggressive enhancement of infrastructure and social services and the creation of an enabling environment, for the participation of the private sector along with the public sector aggressive investments. As shown the result below, Ethiopia achieving better conomic development by improving export of leather and leather products. There fore, it is not only the total level of investment that matters for growth but also a particular focus on private investment is crucial for policy making.

The trend of leather and leather product export in Ethiopia has relatively increased by the small rate during 1984/85-2001. This implies that, the export of leather product in Ethiopia has been low and little contribution to economic growths. And the foreign exchange of Ethiopian leather and leather product value is highly fluctuate and not stable. After the year 2002/2003 to 2004/2005, the export of leather and leather product is sharply fluctuation and moderately stable until the recent year. This indicates that, the export of leather product is highly increased and a significant fluctuations.

The tendency of Ethiopian export of leather and leather product and semi-processed leather products result is coincide on the above mentioned export value trend of variables. Local supply of finished leather from foreign owned tanneries to local manufacturers for further processing and export was liberalized in order to foster the link between tanneries and manufacturers and thus improve the local supply of finished leather. The raw hide and skin was likely affected by the export taxes imposed by the government in 2008/2009 up to 2010/11 on export of raw hide and skin and in 2012 on export of semi-processed leather products (LIDI as it is cited in Wegayehu et al., 2016).

Figure 4.2.: Trend of RGDP and Leather and Leather Product Export in Ethiopia (1984-2019)



Source: Own Computations, 2021

4.3 ADF Unit Root Testing Result

First, it is necessary to test the nature of stationarity of the variables before running regression analysis. This helps us to avoid the possibility of running spurious regression, which makes the result to be unreliable and inconsistent. This test can be done using the Augmented Dickey-Fuller (ADF) unit root tests. When the ADF test statistics is larger than the critical value in absolute terms at 5% (0.05) level of significance, the null hypothesis of unit root is rejected, and if the ADF test statistics is less than the critical value in the absolute terms, we fail to reject the null hypothesis. The empirical analysis requires the determination of the appropriate lag length because the estimation result may be sensitive to the number of lags included in the model (Davidson and Mackinnon, 1999). This is determined using the model selection criteria by Akaike Information Criteria (AIC), and Schwarz (Bayesian) Information Criteria (SBIC).

Table 4.2: Unit Root Test Result

Variables	Included test equation	**Unit root**	**ADF test statistic**	**Critical value**			**P-value**	**Order of Integration**
				1% level	5% level	10% level		
LnRDDP	Intercept only	Level	-4.061325	-3.64634	-3.64634	-3.64634	0.0215*	**I(0)**
		1st difference	-4.780285	-3.64634	-3.64634	-3.646342	0.0035*	**I(0)**
	Trend & Intercept	Level	-2.67325	-4.26273	-4.26273	-4.262735	0.2533	**I(1)**
		1st difference	-4.78028	-4.26273	-4.26273	-4.262735	0.0028*	**I(0)**
	None	Level	3.067537	-2.63690	-2.63690	-2.636901	0.9991	**I(1)**
		1st difference	-0.81734	-2.64167	-2.64167	-2.641672	0.3537	**I(0)**
LnEXLP	Intercept Only	Level	-0.76995	-3.64634	-3.64634	-3.646342	0.8145	**I(1)**
		1st difference	-11.5448	-3.64634	-3.64634	-3.646342	0.0000*	**I(0)**
	Trend & intercept	Level	-2.27318	-4.26273	-4.26273	-4.262735	0.4360	**I(0)**
		1st difference	-2.27318	-4.26273	-3.55297	-3.209642	0.0436	**I(1)**
	None	Level	-0.91599	-2.63690	-2.63690	-2.636901	0.3122	**I(0)**
		1st difference	-11.3888	-2.63690	-2.63690	-2.636901	0.0000*	**I(0)**
LnTLF	Intercept Only	Level	0.569809	-3.64634	-3.64634	-3.646342	0.9866	**I(1)**
		1st difference	-7.03395	-3.64634	-3.64634	-3.646342	0.0000*	**I(0)**
	Trend & intercept	Level	-2.00570	-4.25287	-4.25287	-4.252879	0.5775	**I(0)**
		1st difference	-7.00461	-4.26273	-4.26273	-4.262735	0.0000*	**I(0)**
	None	Level	6.585484	-2.63690	-2.63690	-2.636901	0.0000*	**I(0)**
		1st difference	-0.96431	-2.63921	-2.63921	-2.639210	0.2922	**I(1)**
LnGCF	Intercept Only	Level	0.858939	-3.63940	-3.63940	-3.639407	0.9936	**I(0)**
		1st difference	-5.40821	-3.64634	-3.64634	-3.646342	0.0001*	**I(0)**
	Trend & intercept	Level	1.881798	-4.25287	-4.25287	-4.252879	0.6419	**I(I)**
		1st difference	-5.78716	-4.26273	-4.26273	-4.262735	0.0002	**I(0)**
	None	Level	2.933553	-2.63473	-2.63473	-2.634731	0.9987	**I(0)**
		1st difference	-2.92151	-2.63921	-2.63921	-2.639210	0.0048*	**I(1)**
LnNFF	Intercept Only	Level	-1.39508	-3.63940	-3.63940	-3.639407	0.5731	**I(0)**
		1st difference	-7.19670	-3.64634	-3.64634	-3.646342	0.0000*	**I(0)**
	Trend & intercept	Level	-3.67568	-4.25287	-4.25287	-4.252879	0.0380*	**I(0)**
		1st difference	-7.06454	-4.26273	-4.26273	-4.262735	0.0000*	**I(0)**
	None	Level	0.898321	-2.63473	-2.63473	-2.634731	0.8974	**I(0)**
		1st difference	-6.97782	-2.63690	-2.63690	-2.636901	0.0000*	**I(0)**
LnFR	Intercept Only	Level	-0.64867	-3.63940	-3.63940	-3.639407	0.8463	**I(0)**
		1st difference	4.361447	-3.64634	-3.64634	-3.646342	0.0016	**I(0)**
	Trend & intercept	Level	-4.47293	-4.27327	-4.27327	-4.273277	0.0062	**I(1)**
		1st difference	-4.29013	-4.26273	-4.26273	-4.262735	0.0094	**I(0)**
	None	Level	1.341034	-2.63473	-2.63473	-2.634731	0.9517	**I(0)**
		1st difference	-4.16476	-2.63690	-2.63690	-2.636901	0.0001*	**I(0)**

Source: Own computation Using Eviews 9.0, 2021

As shown in the table above, in both Augmented Dickey-Fuller and Phillip and Perron tests the growth of the variables of real gross domestic product (RGDP), leather and leather product export (EXLP), and net financial flow (NFF) are stationary at level, integrated of order zero (I(0)),

whereas growth total labor force (TLF), gross capital formation (GCF), are notstationary at level but stationary at the first difference, integrated of order one (I(1). This implies the series are of mixed order of I(1) and I(0) and therefore, for the given time series, the methodology is quite appropriate to be adopted. This gives the stepping stone for the nextco-integration analysis and error correction estimation that may proceed to the existence of co-integration.

Table 4.3: Short Summery of ADF Unit Root Test

Variables	Unit root	ADF test statistics	P-Value	Critical value			Order of Integration
				1% level	5% level	10% level	
LNRDDP	Level	-2.673257	0.2533	-4.26273	-3.55297	-3.20964	**I(0)**
	1st difference	-2.673257	0.0028	-4.26273	-4.26273	-4.26273	**I(1)**
LNEXLP	Level	-2.273183	0.4360	-4.26273	-4.26273	-4.26273	**I(0)**
	1st difference	-2.273183	0.04360	-4.26273	-3.55297	-3.20964	**I(1)**
LNTLF	Level	-2.005707	0.5775	-4.252879	-4.252879	-4.252879	**I(0)**
	1st difference	-7.004610	0.0000	-4.262735	-4.262735	-4.262735	**I(1)**
LNGCF	Level	-1.881798	0.6419	-4.252879	-4.252879	-4.252879	**I(I)**
	1st difference	-5.787163	0.0002	-4.262735	-4.262735	-4.262735	**I(0)**
LNNFF	Level	-3.675686	0.0380	-4.252879	-4.252879	-4.252879	**I(0)**
	1st difference	-7.064543	0.0000	-4.262735	-4.262735	-4.262735	**I(0)**
LNFR	Level	-0.648674	0.8463	-3.63940	-3.63940	-3.63940	**I(0)**
	1st difference	4.361447	0.0016	-3.64634	-3.64634	-3.64634	**I(0)**

Note: *, ** and *** indicates the significance level of variables at 1%, 5%, and 10 % respectively. The null hypothesis is that theis series is non-stationary or the series has a unit root against alternative hypothesis that the series are stationary.

Source: Own Computation Using Eviews 9.0, 2021

4.4 Johanssen Cointegration Test

Co-integration is the formal statistical justification of the existence of this relationship among the variables for the long-run equilibrium. The co-integration test is performed to determine the existence of the long run relationship between the variables of interest. Pesaran and Shine (1999), as cited in Narayan (2004) for the annual data, they recommended choosing a maximum of two lag lengths but for small data, it is advisable to use 1 lag because when the lag length increases, the observation fail to show the appropriate long run relationship among variables.

Table 4.4: JohanssenCointegration Test

Series: LNRGDP LN_EXLP LNGCF LNTLF LNNFF				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. Of CE(s)	Eigen value	Statistic	Critical Value	Prob.**
None *	0.660937	73.63815	69.81889	0.0240
At most 1	0.419794	37.94635	47.85613	0.3043
At most 2	0.324010	19.98207	29.79707	0.4241
At most 3	0.189473	7.060014	15.49471	0.5707
At most 4	0.003861	0.127674	3.841466	0.7208
Trace test indicates 1 cointegratingeqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**mackinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. Of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.660937	35.69180	33.87687	0.0301
At most 1	0.419794	17.96428	27.58434	0.4981
At most 2	0.324010	12.92206	21.13162	0.4594
At most 3	0.189473	6.932340	14.26460	0.4972
At most 4	0.003861	0.127674	3.841466	0.7208
Max-eigenvalue test indicates 1 cointegratingeqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**mackinnon-Haug-Michelis (1999) p-values				

Source: Own computation Using eviews 9.0, 2021

4.5 Optimum Lag Length

In the Johanssen approach, the first step is testing for co-integration and estimating a VAR model is to determine the optimal lag length of the VAR. Johanssen co-integration analysis is very sensitive to the number of lags included in the model, the more lags we include, the more initial values we lose. If we include too few lags, the size of the test is incorrect (Wooldridge, 2000).

Co-integration test is usually preceded by a test of optimal lag length as the result of the test is affected by the number of lags included in the VAR model. The Likelihood Ratio test [LR], the Final Prediction Error test [FPE], the Akaike information criteria [AIC], the Shwarz information

criteria [SIC] and the Hannan-Quinn information criteria [HIC] are used to determine the optimal lag length of the VAR model for cointegration test. Lag that provides the minimum value is chosen as the optimal lag length that means, among the IC that provides majority lag has been choose as optimal lag length. While, checking up to four lag orders to include the 5% level of significance suggest that lag 1 be the optimum lag length. This has been confirmed by LR, FPE, SC and HQ in both cases. The stability of VAR and VECM is shown that the VAR and VECM are stable. The smaller value of the information criteria, the better model is the lag exclusion test confirms the first lag to be the appropriate lag. Thus, the next step is to estimate Johanssen test of co-integration, VAR, VECM, Granger causality and impulse response and variance decomposition models.

Table 4.5: VAR Lag Order Selection Criteria

VAR Lag Order Selection Criteria						
Endogenous variables: LNRGDP LN_EXLP LNGCF LNTLF LNNFF						
Exogenous variables:						
Lag	Logl	LR	FPE	AIC	SC	HQ
1	113.6428	NA	2.29e-09*	-5.718890	-4.562449*	-5.341919*
2	139.0618	34.43869	2.48e-09	-5.745925*	-3.433042	-4.991982
3	162.0254	23.70429	3.90e-09	-5.614539	-2.145216	-4.483626
4	188.5594	18.83062	7.68e-09	-5.713511	-1.087746	-4.205627
* Indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						

Source: Own computation Using Eviews 9.5, 2021

4.6 Vector Error Correction Model

VECM is a restricted VAR model that has co-integration restrictions built in to the specification. It is use with non-stationary series that are known to be co-integrated. The VEC specification restricts the long-run behavior of the endogenous variables to converge their co-integrating relationships while allowing a wide range of short-run dynamics.

The co-integrating term [the error correction term] corrects the deviation from long-run equilibrium gradually through a series of partial short run adjustments. The coefficient estimate for the error correction term is the lagged dependent variable and the short-run dynamics are captured by the first differenced variables while the long run is captured by level variables in the error correction model.

Table 4.6: Vector Auto Regressive Model

Vector Error Correction Estimates	
CointegratingEq:	Cointeq1
LNRGDP (-1)	1.000000
LN_EXLP (-1)	-0.123953
	(0.02439)
	[-5.08238]
LNGCF (-1)	-0.002949
	(0.05924)
	[-0.04979]
LNTLF (-1)	-1.021856
	(0.27204)
	[-3.75632]
LNNFF (-1)	-0.108260
	(0.04484)
	[-2.41431]
C	7.173319

Source: Own Computation Using Eviews 9.0, 2021

Table 4.9, presents Error Correction Model results and the estimation result reveals that the error correction terms represented by for the lagged dependent variable coefficient of the given equation is statistically significant and have negative signs, as expected and confirms the existence of co-integration among variables at 5% level of significance.

Table 4.6: Vector Auto Regressive Model

Error Correction:	D(LNRGDP)	D(LN_EXLP)	D(LNGCF)	D(LNTLF)	D(LNNFF)
Cointeq1	-0.275083	-0.877278	-0.490762	-0.012039	2.032909
	(0.05895)	(1.72385)	(0.28640)	(0.01823)	(0.72135)
	[-4.66637]	[-0.50891]	[-1.71354]	[-0.66051]	[2.81820]
D (LNRGDP (-1))	0.180293	0.421897	1.243432	0.092095	3.440888
	(0.16564)	(4.84382)	(0.80476)	(0.05122)	(2.02691)
	[1.08844]	[0.08710]	[1.54510]	[1.79814]	[1.69760]
D (LN_EXLP (-1))	-0.020119	-0.903864	-0.006046	-0.001441	0.071193
	(0.00711)	(0.20783)	(0.03453)	(0.00220)	(0.08697)
	[-2.83086]	[-4.34915]	[-0.17509]	[-0.65566]	[0.81864]
D (LNGCF (-1))	-0.003974	-0.052560	-0.060227	-0.003500	0.413736
	(0.04189)	(1.22488)	(0.20350)	(0.01295)	(0.51256)
	[-0.09486]	[-0.04291]	[-0.29595]	[-0.27026]	[0.80720]

Error Correction:	D(LNRGDP)	D(LN_EXLP)	D(LNGCF)	D(LNTLF)	D(LNNFF)
D (LNTLF (-1))	-0.033569	39.31827	-6.677797	-0.323942	-6.527382
	(0.65519)	(19.1593)	(3.18315)	(0.20258)	(8.01725)
	[-0.05124]	[2.05218]	[-2.09786]	[-1.59905]	[-0.81417]
D (LNNFF (-1))	-0.012905	1.008809	-0.060164	0.003751	-0.254121
	(0.01285)	(0.37584)	(0.06244)	(0.00397)	(0.15727)
	[-1.00408]	[2.68412]	[-0.96349]	[0.94385]	[-1.61580]
C	0.056170	-0.944653	0.221494	0.032722	0.041646
	(0.01912)	(0.55915)	(0.09290)	(0.00591)	(0.23398)
	[2.93760]	[-1.68945]	[2.38428]	[5.53456]	[0.17799]
R-squared	0.529472	0.588433	0.285750	0.220781	0.420481
Adj. R-squared	0.420888	0.493456	0.120923	0.040961	0.286745
Standard errors in parentheses *** p < 0.01, ** p < 0.05, * p < 0.1 The coefficient estimate for the error correction term is also that for the lagged dependent variable.					

Source: Own Computation Using Eviews 9.0, 2021

Besides, the model passes all the post estimation diagnostics tests including the normality, heteroscedasticity, serial correlation, model specification, and model stability. Moreover; The value of the R-Squared implies that about 52.94% of variations in real gross domestic product are explained by the variations in the independent variables considered.

4.7 Long Run and Short Run Test of Variables

The numbers in parenthesis under the estimated coefficients are the asymptotic standard errors. For the coefficients that are normalized to one. Where, c is constant and it exerts a positive effect on growth in RGDP. From below table, equation it can be observed that LNEXLP, LNGCF and LNNFF have appositive and statistically significant association with RGDP in the long run. However, LNTLF have a positive and insignificant effect on RGDP in the long run. A 1% change in LNEXLP is 12.3953% increase in LNRGDP respectively. Thus, we can conclude that, in the long run improving leather and leather product export and net financial flow and labor force contribute for economic growth in Ethiopia.

Table 4.7: The Long Run and short run Test of Variables

Dependent Variable: D(LNRGDP)				
Method: Least Squares (Gauss-Newton / Marquardt steps)				
D(LNRGDP) = C (1) *(LNRGDP (-1) - 0.123953074404*LN_EXLP (-1) -				
0.00294919601248*LNGCF (-1) - 1.02185558914*LNTLF (-1) -				
0.108260473798*LNNFF (-1) + 7.17331925427) + C (2) *D (LNRGDP (				
-1)) + C (3) *D (LN_EXLP (-1)) + C (4) *D (LNGCF (-1)) + C (5) *D (LNTLF (-1))				
+ C (6) *D (LNNFF (-1)) + C (7)				
	Coefficient	Std. Error	T-Statistic	Prob.
C (1)	0.275083	0.058950	-4.666371	0.0001
C (2)	0.180293	0.165643	1.088441	0.2864
C (3)	-0.020119	0.007107	-2.830864	0.0088
C (4)	-0.003974	0.041887	-0.094863	0.9252
C (5)	-0.033569	0.655186	-0.051236	0.9595
C (6)	-0.012905	0.012853	-1.004084	0.3246
C (7)	0.056170	0.019121	2.937597	0.0068
R-squared	0.529472	Mean dependent var		0.060371
Adjusted R-squared	0.420888	S.D. dependent var		0.049891

Source: Own Computation Using Eviews 9.0, 2021

The result from the above table shows that lag one of all variables are used, only LNRGDP (-1), export leather product and net finatial flow are statistically significant, meaning in the long run the impression on economic growth is enhance and increase, when they observed from the previous one years of growth in Real GDP itself. On average, it can be explained that 1% increase in the previous one-year real GDP increase the current Real GDP growth by 27.5%. Among the coefficients of variables only one got statistically significance, however measuring the statistical significance of two independent variables jointly would be very important in order to clearly say, whether two independent variables at a given lag length are jointly significant or not. To do this, Wald test of coefficient restriction is examined with null hypothesis of two coefficients can't jointly influence dependent variable.

4.8 Granger Causality Tests

The dynamic relationship is the simplest technique use to examine the cause-and-effect relationship between variables in a bivariate system and it is applied in the context of the simple linear regression model. However, the simple linear regression model fails to capture the underlying dynamic causality between variables which is efficiently analyzed by Granger (1969) in terms of the Granger causality test. To further investigate the dynamic relationship between the

variable, we employed Granger causality test using the VAR model. In order to infer the direction of causation between two variables, Granger causality test analysis must make sense.

Table 4.8: Granger Causality Test

Pairwise Granger Causality Tests			
Null Hypothesis:	Observation	F-Statistic	Prob.
LN_EXLP does not Granger Cause LNRGDP	34	4.99789	0.0327
LNRGDP does not Granger Cause LN_EXLP		13.8935	0.0008
LNGCF does not Granger Cause LNRGDP	34	1.97706	0.1696
LNRGDP does not Granger Cause LNGCF		10.1208	0.0033
LNTLF does not Granger Cause LNRGDP	34	4.27913	0.0470
LNRGDP does not Granger Cause LNTLF		0.00044	0.9834
LNNFF does not Granger Cause LNRGDP	34	0.11973	0.7317
LNRGDP does not Granger Cause LNNFF		13.5165	0.0009
LNGCF does not Granger Cause LN_EXLP	34	6.36155	0.0170
LN_EXLP does not Granger Cause LNGCF		6.65589	0.0148
LNTLF does not Granger Cause LN_EXLP	34	16.9429	0.0003
LN_EXLP does not Granger Cause LNTLF		0.18127	0.6732
LNNFF does not Granger Cause LN_EXLP	34	5.23355	0.0291
LN_EXLP does not Granger Cause LNNFF		1.71961	0.1994
LNTLF does not Granger Cause LNGCF	34	5.60655	0.0243
LNGCF does not Granger Cause LNTLF		0.00822	0.9283
LNNFF does not Granger Cause LNGCF	34	0.96247	0.3342
LNGCF does not Granger Cause LNNFF		9.79227	0.0038
LNNFF does not Granger Cause LNTLF	34	0.56428	0.4582
LNTLF does not Granger Cause LNNFF		11.7190	0.0018

Source: Own computation Using Eviews 9.0, 2021

Causality tests assume that the time series involved in analysis are stationary. Therefore, tests of stationarity should precede tests of causality. It can be seen from the table above, we reject the null hypothesis that LNRGDP does not granger cause of LNEXLP and LNGCF but, we fail to reject the null hypothesis that LNTLF does not granger cause of LNRGDP, therefore this indicates that the Granger causality run one way from LNRGDP to LNEXLP. Thus, in the long run the granger causality is unidirectional.

4.9 Diagnostics Testing Result

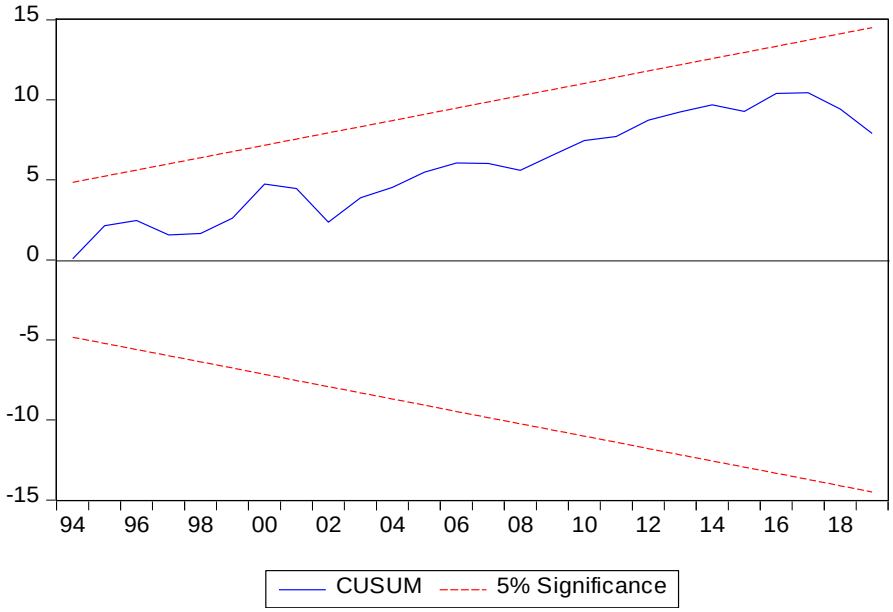
Prior to doing any statistical regression analysis of the model, different diagnostic tests should be undertaken to check the fulfillment of different assumptions. In other words, a diagnostic test is required to check the standard property of the model. In this study, the researcher is carried out a

number of diagnostic check, which includes a Serial correlation test (Brush & God fray LM test), Functional form (Ramsey's RESET) test, Normality (Jaque-Bera test), and Heteroscedasticity test. In order to reject or accept the null hypothesis, a decision is made by looking at the p-values associated with the test statistics. That is the null hypothesis is rejected when the p-value is smaller than the standard significance level (i.e. 5%). The diagnostic test of residuals shows that the model has desirable properties of OLS, Residual test of normality, serial correlation LM test and heteroscedasticity test is conducted and the result is presented here.

4.9.1 Test of Stability

This test enables to check the eigenvalue stability condition in a VEC model fit. Inference after VEC requires that co-integrating equations be correctly specified. Although the methods implemented in rank determination identify the number of stationary cointegrating equations, they assume that the individual variables are I(1). This test provides indicators of whether the number of co-integrating equations is mis specified or whether the cointegrating equations, which are assumed to be stationary, are not stationary.

Figure 4.3: Stability Test of VAR Model



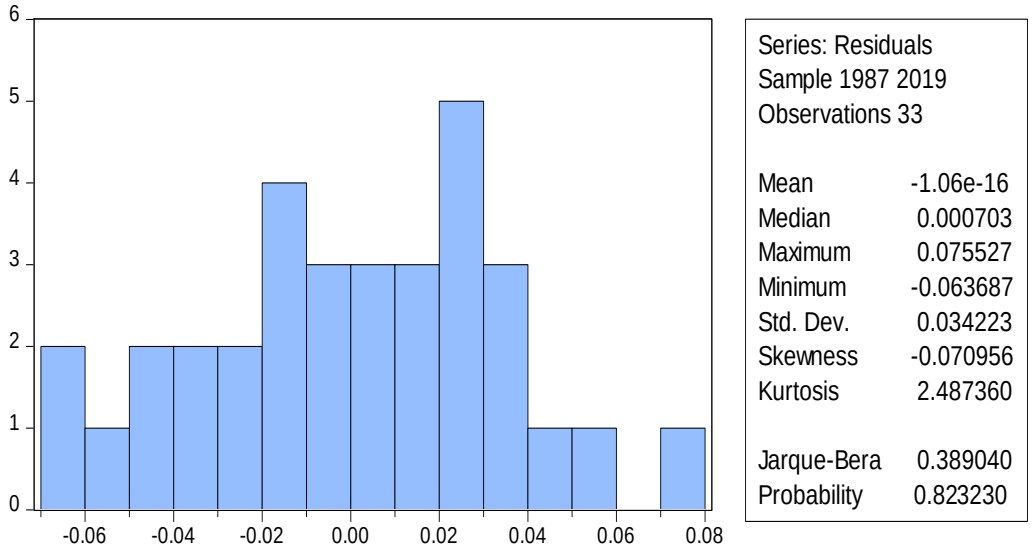
Source: Own Computation Using eviews 9.0, 2021

According to the above figure, the Cumulative Sum (CUSUM) squares plots bounds with in the plus and minus standard errors, and the CUSUM plots bounds with in the plus and minus 5 standard errors.

4.9.2 Normality Test

This test is concerned with whether the disturbances terms are normally distributed or not is one of the assumptions of Clasical Linear Regraton Model. To fulfill this assumption the data distributional pattern should have a kurtosis value of three and follow the normal distribution pattern with mean equals to median which also equals its mode. Normality test can be conducted either Graphical plot or numerically through commands. Accordingly, it is one of the most commonly applied tests for normality. The decision rule is when the *p*-value is greater than 5%, then accept the null hypothesis of normally distribute. According to the Shapiro-Francia test result the variables have is normality distribute. As it is shown in below figure it is normally distributed for the period of study since the p-value is greater than 5 % (82.32%).

Figure 4.4: Summery Results of Normality Test.



Source: Own Computation Using eviews 9.0, 2021

4.9.3 Serial Correlation

Serial correlation same as autocorrelation correlation, the error is that arises when the error terms at successive points in time are related. Durbin-Watson tests, a test to determine whether first-order autocorrelation is present and used to detect serial or autocorrelation. Thus, for our purposes, we consider serial correlation only to be a potential and one of the assumptions of the regression model is the error terms are independent.When autocorrelation is present, serious errors can be made in performing tests of statistical significance based upon the assumed regression model. It is

therefore important to be able to detect autocorrelation and take corrective action. As it shown here the p-value is greater than 5% (84.9) so, we fail to reject the null hypothesis which says that there is no serial correlation.

Table 4.9: Summery Results of Serial Correlation Test.

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.027338	Prob. F (1,25)	0.8700
Obs*R-squared	0.036047	Prob. Chi-Square (1)	0.8494

Source: Own Computation Using Eviews 9.0, 2021

4.9.4 Hetroscedasticity Test

The test of hetroskedasticity is conducted in this study to know weather the variance of the error term is constant or varying. This theoretically assumed that the variance of the error term is assumed to be constant or var $(\in_t) = \delta^2$, this also known as homoscedasticity assumption. Heteroscedasticity arises as a result of the presence outliers. The standard errors and t statistics are justified only as the sample size becomes large, even if the CLRM assumptions are true. With small sample sizes, the *t* statistics can have distributions that are not very close to the t distribution, and that could throw off our inference.

Table 4.10: summery results of Hetroscedasticity test.

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.755054	Prob. F (10,22)	0.1304
Obs*R-squared	14.64374	Prob. Chi-Square (10)	0.1456
Scaled explained SS	11.19709	Prob. Chi-Square (10)	0.3424

Source: Own Computation Using Eviews 9.0, 2021

As the above table shown, there is no heteroscedasticity since the p-value is greater than 5%. Therefore, we reject the null hypothesis which says that there is no heteroscedasticity.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Leather and leather products are the most widely traded products in worldwide market. In the global markets, leather and leather product plays a crucial role in enhancing economic growth and development. The export of Leather and leather product is crucial for achieving sustained economic growth in developed and developing countries. The escalation of potential market size can lead to increasing returns, economies of scale, and increased capacity utilization.The leather and leather products sector contributes on average value about 6 to 8% of the gross value product of all manufacturing industries and contributes about 6% to national GDP.

The main stream and source of leather product is raw hides and skins, are produced as a result of essence production. Ethiopian leather industry involved more than 80 years in the making of leather and leather products, the industry lacks competitiveness both in the national and global markets. The production of leather and leather products export or a plan to participate in the sector has been benefited to economic growth generated from the present study. The aims of the study were to explore leather and leather product export and the contribution of economic growth. The study was limited and to investigate the overall production of leather and leather product quality and volume of exports and its contribution to economic growth in Ethiopia.

Leather and leather product export is often associated with the effectiveness of the country economic growth at the global level. Currently, Ethiopia is mainly exporting mainly finished leather followed by growing shoe exports. Other leather items with gloves, bags and small leather articles have a large potential for exponential growth. The recent expansion in leather gloves production is proof of existing capacity as well as the potential to export with a steady growth of volume and value. A leather and leather product sector is one of the leading manufacturing sectors for Ethiopia.

The study showed that scale, human resource and institutional and systemic capabilities are some of the major factors that positively stimulate a firm’s export performance leather export. The overall capacity of industrial policy institutions to directly support the Ethiopian leather and leather product sector remained relatively weak during the first development period. The economic

importance of tanneries was indicated by the 13% average proportion of leather exports in total exports.

The quality of Ethiopia's sheep and goat skins is internationally valued for its softness and durability. Basically, Ethiopia is practiced a good trend of economic growth improve the productivity items for consumption, import-export leather and leather product. Ethiopia has experienced of strong export of leather and leather export that is leads to contribute economic growth in recent years. The tendency of Ethiopian export of leather and leather product and semi-processed leather products result is coincide on the above mentioned export value trend of variables. Local supply of finished leather from foreign owned tanneries to local manufacturers for further processing and export was liberalized in order to foster the link between tanneries and manufacturers and thus improve the local supply of finished leather.

Leather is often the major material input, and is cut and assembled into use shoes, clothing, leather goods, furniture. Leather product is an intermediate industrial product, with numerous applications in downstream sectors of the consumer products industry, that is clothing, leather goods, furniture, shoes and many other items of daily use. One of the main priority sectors is the leather and leather product sector given its direct links to agriculture through the livestock sector as well as its labor intensity, relatively simple technology and large export potential. Ethiopian leather and leather product sector has experienced significant growth dynamics in production, employment and exports as well as upgrading processes in recent years.

5.2. Policy Recommendation

Based on the empirical analysis made, the following policy implication are derived. As it existed and observed from the empirical results, leather product export is one of the mechanical tools and major contributions to economic growth and significant variable. This implies that Ethiopia should eliminate or at least minimize import of leather product and boost export of leather and leather product so as to improve their net export performance and economic growth by addressing the key constraints of leather industry sector particularly focusing on promoting exports leather products. The policy implications offer from this result are that governments of Ethiopia should use trade openness reforms of leather product, particularly the tariff rate to minimize the importation of goods that can be produced locally of leather product export. This is confirmed the fact that, the device of leather product exports is a positive effect on economic growth and more pronounced

with the consideration of foreign reserves. The intention of the policies should be encourage their export of leather product and reduced import of taxes of leather products. In addition to diversification in the type of export products, the country should also expand its export destinations. In line with theoretical predictions, the impact of following the result, it is optional that Ethiopia draws up strategies and programs that is make the economies less reliant on imports and boost export of goods and services. Because majority of the people is heavily depending on import of goods and services, which leaves them at the mercy on volatile commodity prices.The empirical result indicates, the recognizing of the contribution and significance of leather and leather products export is also very essential for the enhancement of economic growth and policy makers. However, the average mean value of leather product export is small and not enough. Therefore, the government should give more focuses and attentions. Then it is better to support the sectors by different dimensions.

Finally, With respect to wages, the government should either introduce a minimum wage or encourage collective wage agreements negotiated between employers and trade unions. This will become the more difficult the more companies and segments of the value chain are involved. Thus, the formation of cooperating networks should focus on particular issues, such as developing an export brand, elaborating a marketing strategy for the global market, or designing a training program to increase export competitiveness.

5.3. Areas For Future Studies

The absence of organized data was one of the challenge of accomplishment my thesis and it was difficult to get the right and reliable time series data. Hence, the future study has to deal leather and leather product and its contribution to economics growth by time series data analysis wich are equally important the enhancement economic growth. The other challenge is the incompatibility of data from different sources from World Bank and National Bank of Ehiopia some variables are not consistence and the quest for to increase the availability of raw hide and skin in terms of both quantity and quality, the government also should have to continually support anddd follow to address the problem of infrastructure i.e., the government should be improvement in infrastructure contributes for a reduction of the cost of doing business and this in turn strengthens the price competiveness country’s exports in the international market.

References

Berg, M.A. & Krueger, A.O. 2003. Trade, Growth, and Poverty: A Selective Survey. Washington, D.C., USA: International Monetary Fund (IMF).

Bruneckiene, J. And Paltanavicience, D. 2012. "Measurement of Export Competitiveness of the Baltic States by Composite Index", Inzinerine Ekonomika-Engineering Economics [online], Vol. 23(1), pp. 50-62,

Central Statistical Agency (CSA) of Ethiopia. 2013. Report on Livestock and Livestock Characteristics (Private Peasant Holdings). Agricultural Sample Survey 2012/13 [2005e.C.] Volume Ii. Statistical Bulletin 570, Ii (April). Addis Ababa, Ethiopia: CSA.

Cipriani, S.(2002): Quality control and management of the African leather industry (UNIDO).

Dengu C. (2002): Financial strengthening of the leather supply chain in Africa (CFC).

ESAP (Ethiopian Society of Animal Production) 2003. Challenges and Opportunities of Livestock Marketing in Ethiopia. Yilma Jobre and Getachew Gebru (Eds). Proc. 10th Annual conference of the Ethiopian Society of Animal Production (ESAP) held in Addis Ababa, Ethiopia, August 22-24, 2002. ESAP, Addis Ababa. 407pp.

FAO, (2013), Global Hides and Skins Market: Review of 2005-2012 and Prospects for 2013.

FAO, 'World Statistical Compendium for Raw Hides and Skins, Leather Footwear, 1982 –2000', Rome, 2002.

Favazzi A. (2002): The impact of the main environmental policies and protection measures on Africa's leather sector (UNIDO).

Figueiredo, K.F. And Almeida, L.F. (1988), "Export barriers in Brazil", in Da Rocha, A. (Ed.), The Management of Exporting in Brazil: Problems and Opportunities, Haworth Press, Sao Paulo, pp. 73-86.

Food and Agriculture Organization (FAO). 2013. World Statistical Compendium for Raw Hides and Skins, Leather and Leather Footwear: 1993 – 2012. Rome, Italy: Trade and Markets Division Food and Agriculture Organization of the United Nations.

Gibb Wudhipan Y (2002): Prospects for e-enabling international trade in the African leather industry (ITC).

Global Development Solutions (GDS). 2011. Towards a Globally Competitive Ethiopian Economy: The Role of Services and Urbanization Case Studies-Rose and Polo Shirt Value Chains (Prepared for the World Bank). Reston, USA: GDS.

Goldberg, P.K. &Pavcnik, N. 2007. Distributional Effects of Globalization in Developing Countries. Journal of Economic Literature 45(1): 39-82.

Gujarati, D.2004. Basic Econometrics. United States Military Academy, West Point: mcgraw-Hill.

Holmes, T.J. Jr. & J. A. Schmitz. 2001. "A gain from trade: From unproductive to productive entrepreneurship," Journal of Monetary Economics 47(2), 417-446.

Jabbar M.A., S.Kiruthu, B.Gebremedh and S. Ehui. (2002): Essential actions to meet quality requirements of hides and skins and semi-processed leather from Africa - case studies in four African Countries (CFC).

Kifelew S. (2018), Determinants of Export Competitiveness of Leather Industries In Ethiopia

Kiruthu S., 'Benchmarking the African leather sector' (UNIDO- ESALIA) presented at the Expert Group Meeting on Trade Development of the Leather Industry in Africa, October 7-9 in 'Meet in Africa 2002', Tunis, October 6-13, 2002.

Kiruthu, S. (2002): Benchmarking the African leather sector (UNIDO-ESALIA).

Leach I. (2002): Marketing requirements of importers of African hides (CFC).

LIDI, (2015/16), Leather Industry Development Institute 2015/16 annual report.

Milone C., 'The Effects of Globalization on the African Leather Industry' (ASSOMAC) Presented at the Expert Group Meeting on Trade Development of the Leather Industry in Africa, October 7-9, in 'Meet in Africa 2002', Tunis October 6-13, 2002.

Milone, C. (2002): The effects of globalization on the African leather sector (UNIDO).

Mulat, A. 2015. Revealed Comparative Advantage of Ethiopian Leather Industry with Selected African Economies. International Journal of Business and Economics Research 4(5): 229-237.

National Bank of Ethiopia (NBE). 2013. Annual Report, Quarterly Bulletin and Various Issues. NBE: Addis Ababa, Ethiopia.

Salazar de Buckle T. (2002): Assessment of production and management barriers in the African leather and leather products value chain: macroeconomic policies, trade and investment and the institutional environment (UNIDO).

Sisay M. (2010), Export Performance and Determinants in Ethiopia Online At Http://Mpra.Ub.Uni- Muenchen.De/29427/ MPRA Paper No. 29427, Posted 08. March 2011 / 13:44.

UNCTAD, (2004). Export Performance and its determinants: Supply and Demand Constraints. New York and Geneva: UN Publication).

UNIDO, (2003). A Blueprint for the African Leather Industry: A Development, Investment and Trade Guide for the Leather Industry in Africa.

UNIDO, 2002, Leather and Leather Products Industry Panel, Zlin, Czech Republic, 13-15 December 2000, in Salazar de Buckle T., 2002.

United Nations Conference on Trade and Development (UNCTAD). 2004. Commodity Year book, Trade and Development Report. Gevena, Switzerland: UNCTAD.

United Nations Industrial Development Organization (UNIDO). 2012. Technical Assistance Project for the Upgrading of the Ethiopian Leather and Leather Products Industry: Independent Evaluation Report. UNIDO Project Number: Te/Eth/08/008. Vienna, Austria: UNIDO.

United States Agency for International Development (USAID). 2013. Agricultural Growth Program

USAID, (2013), Agricultural Growth Project-Livestock Market Development Value Chain Analysis for Ethiopia: Meat and Live Animals, Hides, Skins and Leather, Dairy, AGP-Livestock Market Development Project, U.S. Agency for International Development, Addis Ababa, Ethiopia.

Wegayehu F. (2016), effect of export tax on the competitiveness of Ethiopia's leather industry

Appendix

Appendix 1: Descriptive Statistics of Variables

	LN-RGDP	LN_EXLP	LN-GCF	LN-TLF	LN-NFF
Mean	12.57552	-0.284530	11.31911	17.28577	19.12948
Median	12.29636	0.002674	10.96447	17.25583	18.90183
Maximum	13.80066	4.044288	13.42349	17.78948	21.12463
Minimum	11.67706	-5.113166	9.726419	16.80347	17.37772
Std. Dev.	0.708624	2.885763	1.110777	0.304266	1.082818
Skewness	0.470056	0.092519	0.683085	0.121599	0.243661
Kurtosis	1.776125	1.594849	2.290991	1.749211	1.836584
Jarque-Bera	3.473284	2.929337	3.454960	2.367777	2.320239
Probability	0.176111	0.231155	0.177732	0.306086	0.313449
Sum	440.1432	-9.958541	396.1687	605.0018	669.5317
Sum Sq. Dev.	17.07302	283.1393	41.95009	3.147647	39.86482
Observations	35	35	35	35	35

Appendix 2: Unit root; Real Growth Domestic Product at Level with Trends

Null Hypothesis: LNRGDP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=8)

		T-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.673257	0.2533
Test critical values:	1% level	-4.262735	
	5% level	-3.552973	
	10% level	-3.209642	

*mackinnon (1996) one-sided p-values.
Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LNRGDP)
Method: Least Squares
Date: 05/05/21 Time: 13:48 Sample (adjusted): 1987 2019
Included observations: 33 after adjustments.

Variable	Coefficient	Std. Error	T-Statistic	Prob.
LNRGDP (-1)	-0.126507	0.047323	-2.673257	0.0122
D (LNRGDP (-1))	0.183479	0.160229	1.145109	0.2615
C	1.448387	0.536418	2.700109	0.0114
@TREND ("1985")	0.010548	0.003324	3.173245	0.0036
R-squared	0.374835	Mean dependent var		0.060371
Adjusted R-squared	0.310163	S.D. dependent var		0.049891
S.E. of regression	0.041438	Akaike info criterion		-3.416023
Sum squared resid	0.049796	Schwarz criterion		-3.234628
Log likelihood	60.36438	Hannan-Quinn criter.		-3.354989
F-statistic	5.795916	Durbin-Watson stat		1.903624
Prob (F-statistic)	0.003124			

Appendix 3: Unit Root Test of Export of Leather Product At Level With Trends

Null Hypothesis: LN_EXLP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag =8)

		T-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.273183	0.4360
Test critical values:	1% level	-4.262735	
	5% level	-3.552973	
	10% level	-3.209642	

*mackinnon (1996) one-sided p-values.
Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LN_EXLP)
Method: Least Squares
Date: 05/05/21 Time: 13:55 Sample (adjusted): 1987-2019
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	T-Statistic	Prob.
LN_EXLP (-1)	-0.554689	0.244014	-2.273183	0.0306
D (LN_EXLP (-1))	-0.420836	0.183565	-2.292566	0.0293
C	-2.615552	1.361125	-1.921610	0.0645
@TREND ("1985")	0.149863	0.070453	2.127143	0.0420

R-squared	0.506694	Mean dependent var	0.107700
Adjusted R-squared	0.455663	S.D. dependent var	1.559959
S.E. of regression	1.150925	Akaike info criterion	3.232222
Sum squared resid	38.41424	Schwarz criterion	3.413617
Log likelihood	-49.33166	Hannan-Quinn criter.	3.293256
F-statistic	9.929026	Durbin-Watson stat	1.506493
Prob(F-statistic)	0.000115		

Appendix 4, Unit Root of Growth Capital Formation At Level With Trends

Null Hypothesis: LNGCF has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		T-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.881798	0.6419
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LNGCF)
Method: Least Squares
Date: 05/05/21 Time: 14:10
Sample (adjusted): 1986 2019
Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	T-Statistic	Prob.
LNGCF (-1)	-0.163473	0.086871	-1.881798	0.0693
C	1.554937	0.827752	1.878507	0.0697
@TREND ("1985")	0.021712	0.009286	2.338205	0.0260

R-squared	0.169078	Mean dependent var	0.094646
Adjusted R-squared	0.115471	S.D. dependent var	0.193747
S.E. of regression	0.182218	Akaike info criterion	-0.483129
Sum squared resid	1.029305	Schwarz criterion	-0.348450
Log likelihood	11.21319	Hannan-Quinn criter.	-0.437199
F-statistic	3.153987	Durbin-Watson stat	1.989014
Prob(F-statistic)	0.056647		

Appendix 5: Unit Root Test of Growth Capital Formation at Level with Trend

Null Hypothesis: D(LNGCF) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag = 8)

		T-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.787163	0.0002
Test critical values:	1% level	-4.262735	
	5% level	-3.552973	
	10% level	-3.209642	

*mackinnon (1996) one-sided p-values.
Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LNGCF,2)
Method: Least Squares
Date: 05/05/21 Time: 14:12
Sample (adjusted): 1987 2019
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	T-Statistic	Prob.
D (LNGCF (-1))	-1.062186	0.183542	-5.787163	0.0000
C	-0.008767	0.072496	-0.120928	0.9046
@TREND ("1985")	0.006100	0.003730	1.635318	0.1124

R-squared	0.527579	Mean dependent var	-0.001236
Adjusted R-squared	0.496085	S.D. dependent var	0.274164
S.E. of regression	0.194621	Akaike info criterion	-0.349020
Sum squared resid	1.136316	Schwarz criterion	-0.212974
Log likelihood	8.758838	Hannan-Quinn criter.	-0.303245
F-statistic	16.75136	Durbin-Watson stat	1.960569
Prob(F-statistic)	0.000013		

Appendix 6: Unit Root Test of Net Financial Flow at Level with Trends

Null Hypothesis: LNNFF has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		T-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.675686	0.0380
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*mackinnon (1996) one-sided p-values.
Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LNNFF)
Method: Least Squares
Date: 05/05/21 Time: 14:12
Sample (adjusted): 1986 2019

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	T-Statistic	Prob.
LNNFF (-1)	-0.605656	0.164774	-3.675686	0.0009
C	10.63170	2.877876	3.694288	0.0008
@TREND ("1985")	0.058058	0.017523	3.313313	0.0024

R-squared	0.303858	Mean dependent var	0.091509
Adjusted R-squared	0.258946	S.D. dependent var	0.546243
S.E. of regression	0.470231	Akaike info criterion	1.412911
Sum squared resid	6.854625	Schwarz criterion	1.547590
Log likelihood	-21.01948	Hannan-Quinn criter.	1.458840
F-statistic	6.765584	Durbin-Watson stat	1.912440
Prob(F-statistic)	0.003646		

Appendix 7: Unit Root Test Total Labor Force at Level with Trends

Null Hypothesis: LNTLF has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag = 8)

		T-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.005707	0.5775
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*mackinnon (1996) one-sided p-values

.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LNTLF)
Method: Least Squares
Date: 05/05/21 Time: 14:17
Sample (adjusted): 1986 2019
Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	T-Statistic	Prob.
LNTLF (-1)	-0.206216	0.102815	-2.005707	0.0537
C	3.481592	1.722388	2.021375	0.0519
@TREND ("1985")	0.006226	0.003053	2.038941	0.0501

R-squared	0.123129	Mean dependent var	0.029000
Adjusted R-squared	0.066557	S.D. dependent var	0.011804
S.E. of regression	0.011405	Akaike info criterion	-6.025450
Sum squared resid	0.004032	Schwarz criterion	-5.890772
Log likelihood	105.4327	Hannan-Quinn criter.	-5.979521
F-statistic	2.176491	Durbin-Watson stat	2.273443
Prob(F-statistic)	0.130468		

Appendix 8: Optimum Lag Length

VAR Lag Order Selection Criteria
Endogenous variables: LNRGDP LN_EXLP LNGCF LNTLF LNNFF
3 Exogenous variables:
Date: 05/05/21 Time: 20:18
Sample: 1985 2019
Included observations: 31

Lag	Logl	LR	FPE	AIC	SC	HQ
1	113.6428	NA	2.29e-09*	-5.718890	-4.562449*	-5.341919*
2	139.0618	34.43869	2.48e-09	-5.745925*	-3.433042	-4.991982

3	162.0254	23.70429	3.90e-09	-5.614539	-2.145216	-4.483626
4	188.5594	18.83062	7.68e-09	-5.713511	-1.087746	-4.205627

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error

AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Appendix 9: Johanson Cointegration Test

Date: 05/05/21 Time: 20:12
Sample (adjusted): 1987 2019
Included observations: 33 after adjustments
Trend assumption: Linear deterministic trend
Series: LNRGDP LN_EXLP LN-GCF LN-TLF LN-NFF
Lags interval (in first differences): 1 to 1
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. Of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.660937	73.63815	69.81889	0.0240
At most 1	0.419794	37.94635	47.85613	0.3043
At most 2	0.324010	19.98207	29.79707	0.4241
At most 3	0.189473	7.060014	15.49471	0.5707
At most 4	0.003861	0.127674	3.841466	0.7208

Trace test indicates 1 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**mackinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. Of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.660937	35.69180	33.87687	0.0301
At most 1	0.419794	17.96428	27.58434	0.4981
At most 2	0.324010	12.92206	21.13162	0.4594
At most 3	0.189473	6.932340	14.26460	0.4972
At most 4	0.003861	0.127674	3.841466	0.7208

Max-eigenvalue test indicates 1 cointegratingeqn (s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**mackinnon-Haug-Michelis (1999) p-values

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

LNRGDP	LN_EXLP	LNGCF	LNTLF	LNNFF
-8.919387	1.105585	0.026305	9.114326	0.965617
-12.37288	1.171218	5.952986	0.377835	-0.941779
-0.731598	-0.105916	0.499332	-8.374449	2.467939
-12.31244	-0.256793	3.375431	19.33318	-0.541073
-1.947263	1.052531	-0.808723	-4.240938	-0.299178

Unrestricted Adjustment Coefficients (alpha):

D(LNRGDP)	0.030841	-0.003057	-0.009411	0.001253	0.001152
D(LN_EXLP)	0.098356	-0.444312	0.154173	0.281774	0.003709
D(LNGCF)	0.055022	-0.065388	-0.009136	-0.046544	0.003612
D(LNTLF)	0.001350	0.000811	0.002028	0.001382	0.000567
D(LNNFF)	-0.227920	-0.105048	-0.194485	0.007660	0.000530

1 Cointegrating Equation(s):	Log likelihood	130.9084

Normalized cointegrating coefficients (standard error in parentheses)

LNRGDP	LN_EXLP	LNGCF	LNTLF	LNNFF
1.000000	-0.123953	-0.002949	-1.021856	-0.108260
	(0.02439)	(0.05924)	(0.27204)	(0.04484)

Adjustment coefficients (standard error in parentheses)

D(LNRGDP)	-0.275083
	(0.05895)
D(LN_EXLP)	-0.877278
	(1.72385)
D(LNGCF)	-0.490762
	(0.28640)
D(LNTLF)	-0.012039
	(0.01823)
D(LNNFF)	2.032909
	(0.72135)

2 Cointegrating Equation(s):	Log likelihood	139.8905

Normalized cointegrating coefficients (standard error in parentheses)

LNRGDP	LN_EXLP	LNGCF	LNTLF	LNNFF
1.000000	0.000000	-2.026376	3.172900	0.671929
		(0.33978)	(1.27701)	(0.26721)
0.000000	1.000000	-16.32413	33.84148	6.294231
		(3.01549)	(11.3333)	(2.37146)

Adjustment coefficients (standard error in parentheses)

D(LNRGDP)	-0.237260	0.030517
	(0.10039)	(0.01060)
D(LN_EXLP)	4.620141	-0.411645
	(2.63127)	(0.27785)
D(LNGCF)	0.318273	-0.015752
	(0.44901)	(0.04741)
D(LNTLF)	-0.022075	0.002442
	(0.03108)	(0.00328)
D(LNNFF)	3.332652	-0.375019
	(1.19285)	(0.12596)

3 Cointegrating Equation(s):	Log likelihood	146.3516

Normalized cointegrating coefficients (standard error in parentheses)

1.000000	0.000000	0.000000	5.017480	-2.037371
			(2.04668)	(0.57225)
0.000000	1.000000	0.000000	48.70110	-15.53142
			(16.4205)	(4.59118)
0.000000	0.000000	1.000000	0.910286	-1.337017
			(1.14646)	(0.32055)

Adjustment coefficients (standard error in parentheses)

D(LNRGDP)	-0.230374	0.031514	-0.022086
	(0.09648)	(0.01020)	(0.03774)
D(LN_EXLP)	4.507348	-0.427974	-2.565413
	(2.59352)	(0.27414)	(1.01463)
D(LNGCF)	0.324956	-0.014784	-0.392367
	(0.44870)	(0.04743)	(0.17554)
D(LNTLF)	-0.023559	0.002227	0.005877
	(0.03051)	(0.00323)	(0.01194)
D(LNNFF)	3.474937	-0.354420	-0.728456
	(1.04257)	(0.11020)	(0.40787)

4 Cointegrating Equation(s):	Log likelihood	149.8177

Normalized cointegrating coefficients (standard error in parentheses)

LNRGDP	LN_EXLP	LNGCF	LNTLF	LNNFF
1.000000	0.000000	0.000000	0.000000	-0.646381
				(0.07554)
0.000000	1.000000	0.000000	0.000000	-2.030072
				(0.38687)
0.000000	0.000000	1.000000	0.000000	-1.084660
				(0.10570)
0.000000	0.000000	0.000000	1.000000	-0.277229
				(0.03317)

Adjustment coefficients (standard error in parentheses)

D(LNRGDP)	-0.245807	0.031192	-0.017855	0.382985
	(0.12384)	(0.01032)	(0.04332)	(0.14494)
D(LN_EXLP)	1.038018	-0.500332	-1.614303	4.885051
	(3.15029)	(0.26248)	(1.10198)	(3.68723)
D(LNGCF)	0.898033	-0.002832	-0.549474	-0.346565
	(0.54787)	(0.04565)	(0.19164)	(0.64125)
D(LNTLF)	-0.040574	0.001873	0.010541	0.022342
	(0.03883)	(0.00324)	(0.01358)	(0.04545)
D(LNNFF)	3.380628	-0.356387	-0.702601	-0.340240
	(1.33893)	(0.11156)	(0.46836)	(1.56714)

Appendix 10: The Vector Error Correction Model

Vector Error Correction Estimates
Date: 05/05/21 Time: 20:16
Sample (adjusted): 1987 - 2019
Included observations: 33 after adjustments
Standard errors in ( ) & t-statistics in [ ]

CointegratingEq:	Cointeq1
LNRGDP (-1)	1.000000
LN_EXLP (-1)	-0.123953
	(0.02439)
	[-5.08238]
LNGCF (-1)	-0.002949
	(0.05924)
	[-0.04979]
LNTLF (-1)	-1.021856
	(0.27204)
	[-3.75632]
LNNFF (-1)	-0.108260
	(0.04484)
	[-2.41431]
C	7.173319

Error Correction:	D(LNRGDP)	D(LNEXLP)	D(LNGCF)	D(LNTLF)	D(LNNFF)
Cointeq1	-0.275083	-0.877278	-0.490762	-0.012039	2.032909
	(0.05895)	(1.72385)	(0.28640)	(0.01823)	(0.72135)
	[-4.66637]	[-0.50891]	[-1.71354]	[-0.66051]	[2.81820]
D (LNRGDP (-1))	0.180293	0.421897	1.243432	0.092095	3.440888
	(0.16564)	(4.84382)	(0.80476)	(0.05122)	(2.02691)
	[1.08844]	[0.08710]	[1.54510]	[1.79814]	[1.69760]
D (LN_EXLP (-1))	-0.020119	-0.903864	-0.006046	-0.001441	0.071193

	(0.00711)	(0.20783)	(0.03453)	(0.00220)	(0.08697)
	[-2.83086]	[-4.34915]	[-0.17509]	[-0.65566]	[0.81864]
D (LNGCF (-1))	-0.003974	-0.052560	-0.060227	-0.003500	0.413736
	(0.04189)	(1.22488)	(0.20350)	(0.01295)	(0.51256)
	[-0.09486]	[-0.04291]	[-0.29595]	[-0.27026]	[0.80720]
D (LNTLF (-1))	-0.033569	39.31827	-6.677797	-0.323942	-6.527382
	(0.65519)	(19.1593)	(3.18315)	(0.20258)	(8.01725)
	[-0.05124]	[2.05218]	[-2.09786]	[-1.59905]	[-0.81417]
D (LNNFF (-1))	-0.012905	1.008809	-0.060164	0.003751	-0.254121
	(0.01285)	(0.37584)	(0.06244)	(0.00397)	(0.15727)
	[-1.00408]	[2.68412]	[-0.96349]	[0.94385]	[-1.61580]
C	0.056170	-0.944653	0.221494	0.032722	0.041646
	(0.01912)	(0.55915)	(0.09290)	(0.00591)	(0.23398)
	[2.93760]	[-1.68945]	[2.38428]	[5.53456]	[0.17799]
R-squared	0.529472	0.588433	0.285750	0.220781	0.420481
Adj. R-squared	0.420888	0.493456	0.120923	0.040961	0.286745
Sum sq. Resids	0.037479	32.04913	0.884651	0.003583	5.611882
S.E. equation	0.037967	1.110252	0.184459	0.011739	0.464588
F-statistic	4.876172	6.195541	1.733637	1.227788	3.144128
Log likelihood	65.05301	-46.34255	12.88967	103.7873	-17.59322
Akaike AIC	-3.518364	3.232882	-0.356950	-5.865895	1.490498
Schwarz SC	-3.200923	3.550323	-0.039509	-5.548454	1.807939
Mean dependent	0.060371	0.107700	0.095044	0.028997	0.103559
S.D. dependent	0.049891	1.559959	0.196737	0.011988	0.550105

Determinant resid covariance (dof adj.)	8.12E-10
Determinant resid covariance	2.47E-10
Log likelihood	130.9084
Akaike information criterion	- 5.509601
Schwarz criterion	-3.695652

Apendix 11: The Long Run Impacts of Variables on Economic Growth.

Dependent Variable: D(LNRGDP)
Method: Least Squares (Gauss-Newton / Marquardt steps)
Date: 05/05/21 Time: 20:28
Sample (adjusted): 1987 2019
Included observations: 33 after adjustments
D(LNRGDP) = C (1) *(LNRGDP (-1) - 0.123953074404*LN_EXLP (-1) - 0.00294919601248*LNGCF (-1) - 1.02185558914*LNTLF (-1) - 0.108260473798*LNNFF (-1) + 7.17331925427) + C (2) * D (LNRGDP (-1)) + C (3) *D (LN_EXLP (-1)) + C (4) *D (LNGCF (-1)) + C (5) *D (LNTLF (-1)) + C (6) *D (LNNFF (-1)) + C (7)

	Coefficient	Std. Error	T-Statistic	Prob.
C (1)	-0.275083	0.058950	-4.666371	0.0001

C (2)	0.180293	0.165643	1.088441	0.2864
C (3)	-0.020119	0.007107	-2.830864	0.0088
C (4)	-0.003974	0.041887	-0.094863	0.9252
C (5)	-0.033569	0.655186	-0.051236	0.9595
C (6)	-0.012905	0.012853	-1.004084	0.3246
C (7)	0.056170	0.019121	2.937597	0.0068

R-squared	0.529472	Mean dependent var	0.060371
Adjusted R-squared	0.420888	S.D. dependent var	0.049891
S.E. of regression	0.037967	Akaike info criterion	-3.518364
Sum squared resid	0.037479	Schwarz criterion	-3.200923
Log likelihood	65.05301	Hannan-Quinn criter.	-3.411555
F-statistic	4.876172	Durbin-Watson stat	1.902059
Prob(F-statistic)	0.001850		

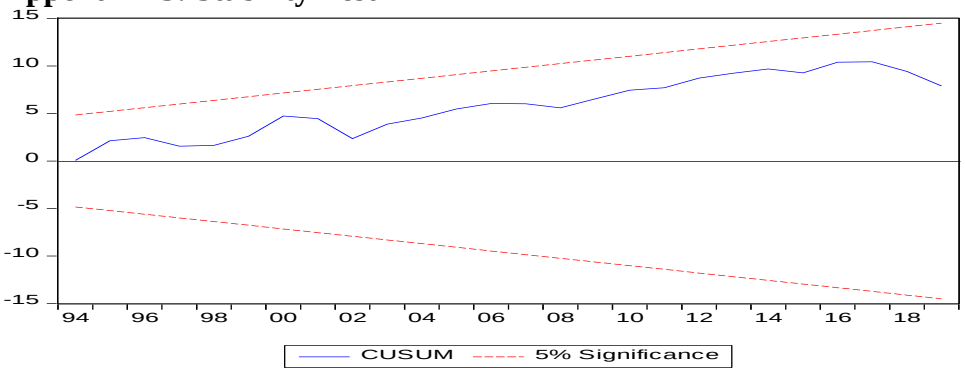
Appendix 12: Granger Causality Tests/long run causality (VAR)

Pairwise Granger Causality Tests
Date: 05/05/21 Time: 20:21
Sample: 1985 – 2019
Lags: 1

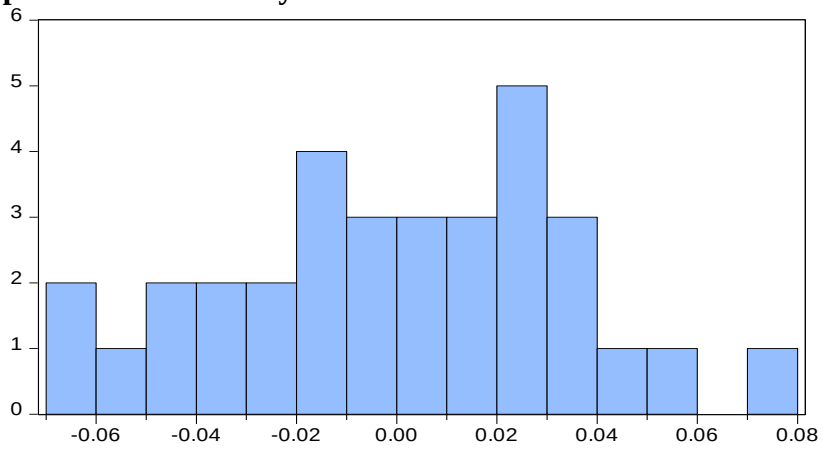
Null Hypothesis:	Obs	F-Statistic	Prob.
LN_EXLP does not Granger Cause LNRGDP	34	4.99789	0.0327
LNRGDP does not Granger Cause LN_EXLP		13.8935	0.0008
LNGCF does not Granger Cause LNRGDP	34	1.97706	0.1696
LNRGDP does not Granger Cause LNGCF		10.1208	0.0033
LNTLF does not Granger Cause LNRGDP	34	4.27913	0.0470
LNRGDP does not Granger Cause LNTLF		0.00044	0.9834
LNNFF does not Granger Cause LNRGDP	34	0.11973	0.7317
LNRGDP does not Granger Cause LNNFF		13.5165	0.0009
LNGCF does not Granger Cause LN_EXLP	34	6.36155	0.0170
LN_EXLP does not Granger Cause LNGCF		6.65589	0.0148
LNTLR does not Granger Cause LN_EXLP	34	16.9429	0.0003
LN_EXLP does not Granger Cause LNTLF		0.18127	0.6732
LNNFF does not Granger Cause LN_EXLP	34	5.23355	0.0291
LN_EXLP does not Granger Cause LNNFF		1.71961	0.1994

LNTLF does not Granger Cause LNGCF	34	5.60655	0.0243
LNGCF does not Granger Cause LNTLF		0.00822	0.9283
LNNFF does not Granger Cause LNGCF	34	0.96247	0.3342
LNGCF does not Granger Cause LNNFF		9.79227	0.0038
LNNFF does not Granger Cause LNTLF	34	0.56428	0.4582
LNTLF does not Granger Cause LNNFF		11.7190	0.0018

Appendix 13: Stability Test



Appendix 14: Normality Test



Series: Residuals
Sample 1987 2019
Observations 33

Mean	-1.06e-16
Median	0.000703
Maximum	0.075527
Minimum	-0.063687
Std. Dev.	0.034223
Skewness	-0.070956
Kurtosis	2.487360
Jarque-Bera	0.389040
Probability	0.823230

Appendix 15: Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	**0.027338**	**Prob. F(1,25)**	**0.8700**
Obs*R-squared	**0.036047**	**Prob. Chi-Square(1)**	**0.8494**

Test Equation:
Dependent Variable: RGDP
Method: Least Squares

Date: 05/05/21 Time: 20:33
Sample: 1987 - 2019
Included observations: 33
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C (1)	-0.005001	0.067269	-0.074346	0.9413
C (2)	-0.023410	0.220341	-0.106244	0.9162
C (3)	-0.000260	0.007412	-0.035070	0.9723
C (4)	-9.92E-05	0.042697	-0.002324	0.9982
C (5)	-0.033707	0.698221	-0.048276	0.9619
C (6)	-0.000760	0.013882	-0.054726	0.9568
C (7)	0.002546	0.024838	0.102506	0.9192
RGDP (-1)	0.054286	0.328323	0.165342	0.8700

R-squared	0.001092	Mean dependent var	-1.06E-16
Adjusted R-squared	-0.278602	S.D. dependent var	0.034223
S.E. of regression	0.038698	Akaike info criterion	-3.458851
Sum squared resid	0.037438	Schwarz criterion	-3.096061
Log likelihood	65.07104	Hannan-Quinn criter.	-3.336783
F-statistic	0.003905	Durbin-Watson stat	1.911618
Prob(F-statistic)	1.000000		

Appendix 16: Hetroscedasticity

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.755054	Prob. F (10,22)	0.1304
Obs*R-squared	14.64374	Prob. Chi-Square (10)	0.1456
Scaled explained SS	11.19709	Prob. Chi-Square (10)	0.3424

Test Equation:
Dependent Variable: RGDP2
Method: Least Squares
Date: 05/05/21 Time: 20:38
Sample: 1987 2019
Included observations: 33

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	-34.70352	87.33568	-0.397358	0.6949
LNRGDP (-1)	-16.95919	9.833274	-1.724673	0.0986
LN_EXLP (-1)	-0.351338	0.377391	-0.930967	0.3620
LNGCF (-1)	-3.148340	2.343188	-1.343614	0.1928
LNTLF (-1)	15.47757	31.10664	0.497565	0.6237
LNNFF (-1)	0.648742	0.818125	0.792961	0.4363

LNRGDP (-2)	17.05819	9.048475	1.885201	0.0727
LN_EXLP (-2)	0.189311	0.405685	0.466644	0.6453
LNGCF (-2)	3.465335	2.207906	1.569512	0.1308
LNTLF (-2)	-13.88020	31.19970	-0.444882	0.6608
LNNFF (-2)	-0.890415	0.795171	-1.119778	0.2749

R-squared	0.443750	Mean dependent var	-7.832520
Adjusted R-squared	0.190909	S.D. dependent var	1.972620
S.E. of regression	1.774362	Akaike info criterion	4.245961
Sum squared resid	69.26396	Schwarz criterion	4.744797
Log likelihood	-59.05835	Hannan-Quinn criter.	4.413804
F-statistic	1.755054	Durbin-Watson stat	2.505560
Prob(F-statistic)	0.130432		

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~**End**~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~