

**AN ASSESSMENT OF DOMESTIC CREDIT TO  
THE PRIVATE SECTOR AND EXPORT  
PERFORMANCE OF NEPAL: A GRAVITY  
MODELLING APPROACH**

**A Thesis**

**Submitted to the Central Department of Economics,  
Faculty of Humanities and Social Sciences,  
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Kirtipur, Kathmandu**

*In partial fulfillment of the requirements for the degree of*  
**Master of Arts in Economics**

**By**

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**April, 2023**

## DECLARATION

I, Junu Sinjali Magar, hereby declare that this thesis entitled 'An Assessment of Domestic Credit to the Private Sector and Export Performance of Nepal: A Gravity Modelling Approach' submitted to the Central Department of Economics, Tribhuvan University is my work prepared under the supervision of my supervisor. I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the reference section of the thesis.

I will be solely responsible if any evidence is found against my declaration.

.....

Junu Sinjali Magar

April 03, 2023 A.D.

## LETTER OF RECOMMENDATION

It is certified that this thesis entitled “**AN ASSESSMENT OF DOMESTIC CREDIT TO THE PRIVATE SECTOR AND EXPORT PERFORMANCE OF NEPAL: A GRAVITY MODELLING APPROACH**” submitted by Junu Sinjali Magar is an original piece of research work carried out by the candidate under my supervision for partial fulfillment of the requirements for the Degree of MASTER OF ARTS in ECONOMICS. I forward it with a recommendation for approval.

.....

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## **APPROVAL SHEET**

We clarify that this thesis entitled “**AN ASSESSMENT OF DOMESTIC CREDIT TO THE PRIVATE SECTOR AND EXPORT PERFORMANCE OF NEPAL: A GRAVITY MODELLING APPROACH**” submitted by Ms. Junu Sinjali Magar to the Central Department of Economics, Faculty of Humanities and Social Science, Tribhuvan University, in the partial fulfillment of the requirements for the degree of **MASTER OF ARTS in ECONOMICS** have found satisfactory in scope and quality. Therefore, we accept this thesis as a part of the said Degree.

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## LIST OF ABBREVIATIONS

AVG	=	Average
CORR	=	Correlation
D.F	=	Degree of Freedom
DCPS	=	Domestic credit to private sector
DIST	=	Distance
EXP	=	Exports
F	=	F-statistics
FE	=	Fixed effect
GATT	=	General Agreement on Tariffs and Trade
GDP	=	Gross Domestic Product
NAFTA	=	North American Free Trade Agreement
NRB	=	Nepal Rastra Bank
POP	=	Population
R	=	Correlation Coefficient
R <sup>2</sup>	=	R-squared
RE	=	Random effect
UK	=	United Kingdom
USA	=	United States of America
WTO	=	World Trade Organization

## ABSTRACT

*The trade deficit in Nepal has reached an alarming levels because of the ongoing and growing mismatch between imports and exports. Nepal's trade deficits are the major concern of Nepal's economy at present. Despite numerous policy efforts, export performance has fallen short of stakeholders' and policymakers' expectations. In recent years, attention has increased to the ability of the banking sector's credit to the private sector (loanable fund) to increase export performance by bridging the gap between a company's productivity and export status.*

*The objective of this thesis is to document the analysis of domestic credit to the private sector and export performance of Nepal and to examine the association of Domestic credit to the private sector and export performance in Nepal.*

*The gravity model method is used in this study to investigate the relationship between domestic bank credit to the private sector and Nepal's export performance employing data from 1996 to 2019.*

*The study found a significant and favourable association between the domestic credit to the private sector and export performance. The study's conclusions showed that domestic credit to the private sector was statistically significant at a one per cent significance level and had a positive impact on export performance. In a similar manner to this, gravity variables, such as distance and GDP of the trading partner, have a significant relationship with export performance, but even at a 10 per cent level of significance, the population of the trading partner countries is not significant. Additionally, the estimated coefficient for governance is 0.522, indicating a statistically significant relationship between governance and export performance at a one per cent.*

*Financial development improves trade flows by reducing the fictitious gap between productivity and exports, domestic credit should be invested in the manufacturing sector rather than consumption. The Nepali government should support industrial development and the expansion of industries that can replace imported goods.*

# CHAPTER-I

## INTRODUCTION

### 1.1 Introduction

The trade deficit in Nepal has reached an alarming level because of the ongoing and growing mismatch between imports and exports. Over time, export performance has plateaued while import growth has exploded. Despite numerous policy efforts, export performance has fallen short of stakeholders' and policymakers' expectations. In a developing nation like Nepal, imports and exports are both crucial for the national economy. To increase its production capacity and encourage export growth, a country must import the raw materials, intermediate goods, and capital goods that are required. Consumer goods imports are also essential to satisfy the growing domestic demand. But to reduce a country's reliance on foreign aid, increase its capacity for imports, and close the "foreign exchange gap," export trade is crucial. Recently, concerns have been raised that the banking sector's credit has fueled the alarming trade deficits (Paudel, 2021).

Industrialization increases the export capacity and overall economic activity which support economic growth. So, it is believed that expanding global trade participation is the most crucial factor for achieving rapid economic growth and development (Rahman, 2009). A significant concern for Nepal's ability to gain from trade is the slow growth in exports compared to the fast growth in imports. According to the classical school of economics, global trade and economic growth were connected. According to them, foreign trade stimulates economic growth in two different ways. While increasing productivity and ensuring optimal resource distribution, which in turn boosted economic growth, foreign trade also permitted one country to import raw materials and equipment that it was unable to produce (Chen , 2009).

The three perspectives on exports as a growth engine are shown by Helpman and Krugman (1985), Ben-David and Loewy (1998). First, increasing exports as a percentage of total output will directly accelerate export growth. By boosting employment and income in the exportable sector, an increase in the foreign demand for domestic exportable goods can lead to an overall increase in output. Second, by utilizing economies of scale, better resource utilization, efficient resource allocation,

and the stimulation of technological advancement brought on by competition from foreign markets, increasing exports can indirectly affect growth. Third, exports might be able to supply the foreign currency required to increase imports of capital and intermediate goods, which would then increase capital formation and fuel output growth in both developed and developing nations (Balassa, 1978; Buffie, 1992).

Even though Nepal was one of the first countries in the region to liberalize and reform and joined the World Trade Organization (WTO), the nation's progress has been incredibly slow and has fallen far short of expectations from the various stakeholders Paudel (2019). Nepal's export performance is unremarkable, and the decision-makers in the industry are not pleased with the outcome. Since the middle of the 1980s, Nepal has been implementing liberalized economic policies, such as privatization, market liberalization, and trade liberalization. With the advent of democracy in 1990, it gathered steam. Despite trade expansion and economic liberalization in the 1990s, Nepal's economy is not very competitive, and the nation's trade deficit is a major source of worry for policymakers.

According to a World Bank (1993) report, export-oriented growth as the defining characteristic of an effective development strategy for East Asian countries with less developed economies. Supporters of NAFTA and GATT argue that lowering trade barriers will boost exports, which in turn will boost domestic economic growth. It is probably one of the main expectations to accept it as one of the three pillars of Nepal's economy, as stated in (The Constitution of Nepal, 2015), which is the highest legal document in the country.

Financial institutions, also known as banking institutions, are commercial organizations that act as middlemen for various kinds of financial monetary transactions. Bank means a corporate body incorporated to carry on banking and financial transactions according to Sub-Section (1) of Section 49 and the term also includes a branch office of a foreign bank located in Nepal, a branch office opened outside of Nepal by a bank incorporated in Nepal and an Infrastructure Development Bank to carry on functions according pursuant to sub- Section (5) of Section 49 and the branch office of the same bank (Ministry of Law, 2017).

The formal financial system of Nepal was established by the establishment of a commercial bank named Nepal Bank Limited, in 1937 with 51 and 49 per cent contributions from the public and private sectors, respectively. The establishment of the Central Bank of Nepal (also known as the Nepal Rastra Bank) in 1956 marked a second development in the financial industry. The first five-year development planning system was established in Nepal in 1956, which paved the way for the growth of the financial industry. Up until the middle of the 1980s, Nepal had the Employees Provident Fund, the Security Exchange Center, two commercial banks, two development banks, two insurance companies, and the Credit Guarantee Corporation ( Paudel & Alharthi, 2021).

Notably, Nepal began changing its policies in the middle of the 1980s in response to requests from development partners, aid organizations, and international financial organizations that wanted to increase exports. Approximately 80–90 per cent of all exporters rely on trade finance, according to Auboin (2009). Therefore, financial frictions may have the potential to disrupt global trade flows. The impact of financial frictions on a firm's ability to export has recently been the subject of a wave of theoretical and empirical papers. The emerging picture indicates that exports are indeed hampered by credit market imperfections, particularly in industries where businesses heavily rely on external financing Manova et al. (2011). As a result, nations with strong financial institutions have an advantage over rivals in industries with high financial vulnerability (Beck, 2002). Exporters were hit harder than other businesses during the 2008–2009 financial crisis, which is why global trade shrank much more dramatically than GDP (Chor et al., 2012).

For many years, the manufacturing sector's contribution to Nepal's economy was less than 10 per cent. Despite its people's high appreciation for economic growth, Nepal, a small developing economy in South Asia, has been facing significant difficulties in its development. Before 1951, Tibet and India represented the entirety of Nepal's international trade. Nepal's international trade increased after democracy was established in 1951, reaching out to nations like Bangladesh, Malaysia, Singapore, Thailand, and the United States of America as well as Japan, Germany, France, and Spain. Nepal imported from 149 countries during the fiscal year 2018/19 while exporting to 113 countries (MoF 2019). After the 1990s, Nepal's emphasis profoundly

shifted to manufacturing goods, after initially focusing on the export of agricultural goods in the 1980s. But in contrast to the swift rise in imports, the volume of Nepal's exports has been steadily declining over time.

Nepal's imports and trade deficit have therefore been rapidly growing in recent decades. For instance, exports accounted for 52.78 per cent of Nepal's imports in 1965 but only 6.64 per cent of those imports in 2020. Nepal's trade deficit in 2020 was 9.98 billion USD, or 29.32 per cent of Nepal's GDP. Nepal is therefore unable to benefit from globalization in foreign trade. A more export-friendly environment that supports small and medium-sized businesses, manufacturing, and the service sector may be what the political leadership hopes to achieve by addressing urgent capital needs through cooperative development and financial growth.

The literature claims that financial development promotes trade in the economy, raises economic activity, and fosters business-friendly environment. These arguments show that financial development first accelerates trade, which then accelerates other economic activities like job creation and balancing public and private spending, which in turn promotes economic growth.

Additionally, by providing the necessary funding for the production activities that boost exports, and consequently, the economy, financial development supports export performance. It claims that promoting export performance, which is how financial development contributes to economic growth, is one of the main concerns of the growth target set by policymakers and stakeholders.

The role of financial development in economic growth is a major topic in the literature on financial development. In the literature on financial development, the part played by financial development in economic growth is a key topic. In what is most likely the first organized study in the contemporary field of financial development, Bagehot (1873), which was largely based on qualitative analysis, established the role of the financial sector in economic development. The link between entrepreneurial endeavours and economic growth was established by Schumpeter in 1934. This is similar to how Goldsmith (1969), McKinnon (1973), and Shaw (1973) examine the relationship between financial development and economic

growth while taking into account the various roles that the financial system, financial intermediaries, and the overall financial sector play.

Cooperatives, capital markets, non-banking financial institutions, insurance, and banking are some of the components of the financial system. The financial sector has a big impact on how well Nepal's exports perform. One of the major indicators for measuring the financial development of a country is the private sector credit to GDP ratio.

Financial development fosters economic growth through the two channels of capital accumulation and technological innovation and claimed that both financial efficiency and credit availability are essential components of financial development. So, Credit is an important link in money transmission; it finances production, consumption, and capital formation, which in turn affect economic activity. Credit is the total amount of money that commercial banks lend to the government, private companies, and people for investment and consumption. Individuals can obtain credit for both consumption and investment purposes (Levine, 1997). Additionally, export performance is determined by the credit given to the private sector, which has both a short-term and long-term positive impact. The growth of cooperatives and financial institutions, among other things, can improve the lives of citizens by helping them meet immediate financial needs and fostering some kind of productivity growth that will boost export performance (Belayneh & Wondaferahu, 2013).

Business organizations and industries can borrow money to invest in machinery and plant, while the government can borrow money to fund both capital and ongoing expenses. In more detail, credit is understood as the provision of resources, such as the granting of a loan by the creditor/lender to the debtor/borrower, where the debtor does not immediately reimburse the lender, thereby generating a debt, but instead arranges to either repay or return those resources at a later date (Mishra et. al., 2009).

Particularly in developing countries where it lubricates the market, credit is regarded as an essential element of economic growth. Many academics now accept that bank credit plays a part in export and economic growth because different economic agents have access to capital to invest in various investment opportunities. Or to put it another way, credit constraints lead to disconnect between a company's productivity



and export status. This clarifies why firms aren't always fairly selected for the export market based on their productivity: Recent theories of global trade, like those advanced by Melitz (2002), contend that all businesses with productivity levels above a specific threshold will export their goods to a specific foreign market. No matter which productivity measure is used, evidence indicates that this is not the case.

## **1.2 Statement of the Problem**

The ongoing and expanding mismatch between imports and exports has led to alarmingly high levels of trade deficit in Nepal. Nepal's trade deficits are the major concerns of Nepal's economy at present. Particularly, trade deficits have been a serious concern among policymakers and other stakeholders in the country. Despite numerous policy efforts, export performance has fallen short of stakeholders' and policymakers' expectations. In recent years, attention has increased to the ability of the banking sector's credit to the private sector (loanable fund) to increase export performance by bridging the gap between a company's productivity and export status. Theoretically, increased credit growth should boost export performance by facilitating funds for the manufacturing and trade sectors. However, in Nepal, it is not happening.

The main cause of Nepal's current, rapidly growing trade deficit is the nation's poor export performance. Only a small number of goods are exported, and more than 60 per cent of those go to India. Nepal is also unable to increase the number of products and trading partners with which it engages. Given that 80–90 per cent of all exporters rely on trade finance, a nation should take serious steps to fixate the banking credit for the manufacturing sector if it wants to improve export performance (Auboin, 2009). Consequently, there is a chance that financial frictions could stymie international trade flows. A spate of theoretical and empirical papers have recently addressed the effect of financial frictions on a firm's capacity to export. These scenarios seek attention to whether the domestic credit to the private sectors is contributing positively to boosting the export performance or not in Nepal. Most importantly, urgency on the policy side seems important to know about the banking credit to the private sector, which may be crucial for better export performance and enhancing economic activities including manufacturing and trade. The government should concentrate on providing banking credit to the private sector as one of the financial

development components to enhance export performance, and this study can assist in determining appropriate policy.

Banking credit to the private sector is one of the components of financial development that promotes business-friendly environments, increases economic activity, and encourages trade in the economy, according to the literature. The effect of financial institutions on export performance, however, has not received as much attention in the literature as its effect on economic growth.

Most studies on the factors influencing financial development have focused on the importance of economic growth and discovered that financial development encourages trade and economic activity. Furthermore, the role of the financial development component in the context of Nepal has not been thoroughly examined. In this study, the promotion of Nepal's exports is discussed about domestic credit to the private sector. This study aims to fill the knowledge gap that needed to be brought to the attention of both political and academic circles regarding domestic credit to the private sector and export.

### **1.3 Research Question**

This study discusses the role of domestic credit to the private sector in promoting Nepal's exports. As a result, the following inquiry is developed to address this study:

- a. What are the trends and patterns of domestic credit to the private sector and export performance in Nepal?
- b. How are the association between Domestic credit to the private sector and the export performance of Nepal?

### **1.4 Objectives**

The study's primary objectives are to examine the role of domestic credit to the private sector and Nepal's export performance. However, the following objectives are more particular to the study:

- a. To analyze the trend and pattern of domestic credit to the private sector and export performance in the context of Nepal

- b. To examine the association of Domestic credit to the private sector and export performance in Nepal.

### **1.5 Significance of the Study**

In addition to aiming to learn something new, research itself advances the body of knowledge. The importance of this study is primarily found in its ability to close a research gap regarding the role played by commercial banks' lending to the private sector in Nepal's export performance.

Few papers have recently looked at the impact that financial institutions have on export performance. A systematic analysis looking at the effect of domestic credit to the private sector on export performance in the country-specific setting of a landlocked least developing country, Nepal, is essential to shaping the literature in the context.

This research is important for banking and financial organizations, academics, investors, students, the government, and many other parties involved in the field of study. Finally, the findings of this study can be used to guide future research, provide a starting point for those interested in exploring related issues further, and aid in the development of better policy choices that will improve export performance.

### **1.6 Limitation**

Along with the significance of this study, it also has some limitations which largely depend upon the quality of data and my research skills. Among them are: Only the effect of bank credit on export performance is examined in the study. It excludes the financial industry. This study only focuses on domestic bank credit to the private sector; it does not examine credit provided by the entire financial sector. This study was only able to use data from the last 23 years due to a lack of data for the governance variable for Nepal. However, I believe that these limitations do not reduce the credibility of the findings from this thesis.

### **1.7 Organization of the Study**

Considering the objectives, this study is structured into six chapters as follows: Chapter I includes a background of the study, a statement of the problems, objectives

of the study, significance of the study, limitations of the study and organization of the study. Chapter II includes pertinent prior writing and studies to identify the research gap, as well as a review of the textbook, dissertation, journals and articles. Chapter III contains the research design, source of data, conceptual framework and techniques and tools of data analysis. Chapter IV examined the domestic credit to the private sector and export performance of Nepal over the time period. Chapter V analyzed various data gathered and tried to find out the relationship between various factors identified for the research and presents the same with the help of diagrams. It further includes the interpretation of findings. Chapter VI dealt with the summary, conclusion and policy implications of the study and recommendations for further research.

## **CHAPTER-II**

### **LITERATURE REVIEW**

An essential component of the research is the review of the literature. Any research is predicated on prior learning and experience. The existing literature is highlighted in this chapter. For this, a several books, reports, journal and articles are examined. The goal of this chapter is to develop a theoretical framework and provide substantial evidence for the concept needed to comprehend this study.

#### **2.1 Theoretical Foundation**

This section presents a theoretical foundation that elucidates one channel through which the level of financial development affects production decisions and both the level and structure of international trade.

The role of financial development in economic growth is a major topic in the literature on financial development. Economists hold different perspectives on the theoretical link between financial development and economic growth. Bagehot (1873) established the role of the financial sector in economic development in what is likely the first organized study in the modern field of financial development, which was largely based on qualitative analysis. Schumpeter (1911) contended that the service provided by financial intermediaries is essential drivers of innovation and economic growth. A well-developed financial system channels financial resources to the most productive use.

The alternative explanation imitated by Robinson (1952) argued that financial finance does not exert a casual impact on economic growth. Instead financial development follows economic growth as a result of higher demand for financial services. When an economy grows, more financial institutions, financial products and services emerge in the market in response to the higher demand for financial services. Schumpeter (1934) made the connection between entrepreneurial endeavours and economic growth. Similar to this, Goldsmith (1969), McKinnon (1973), and Shaw (1973) investigated the connection between financial development and economic growth while taking into account the various roles played by the financial system, financial intermediaries, and the overall financial sector.

Shaw (1973) argued that high-interest rates are essential in attracting more savings. With the supply of credit, financial intermediaries promote investment and raise output growth through borrowing and lending. The endogenous growth literature is in line with this argument that financial development has a positive impact on the steady-state growth.

Arestis and Demetriades (1997) examined the relationship between financial development and economic growth as well as international trade using cross-country regression and time series analysis. By mobilizing resources and providing funding for the industrialization sector, they concluded that financial development encourages economic growth and international trade.

Beck (2002) used a sample of 65 countries between 1966 and 1995 to examine the relationship between financial development and trade structure. As the main indicator of financial development, private credit is defined as credit provided to the private sector by deposit money banks and other financial institutions as a percentage of GDP. The results demonstrate that countries with higher levels of financial development have higher shares of manufactured exports in their GDP and that private credit has a statistically significant and economically significant causal impact on manufactured exports as a percentage of GDP. This emphasizes how important financial development should be on the agendas of decision-makers.

Fang et al. (2015), showed the evolvement of export technical sophistication (or technical complexity) upgrading in China covering the panel data from 31 provinces and municipalities of China for the period of 2002–2008, analyzed and found financial development indicators all have significant impacts on the industrial export technical sophistication in different regions and different industries.

More recently, Akoto and Adjasi (2020) examined the effect of financial sector development on export diversification of 41 sub-Saharan Africa countries using data for the period 1995-2013. The empirical results using the dynamic panel system generalized methods of moments (System-GMM) estimation technique show that high financial development promotes export diversification in sub-Saharan Africa. The finding underscores the importance of financial sector development policies in sub-Saharan Africa to stimulate export diversification. This paper suggested that

government should also ensure macroeconomic stability to support financial sector development in the various sub-Saharan Africa countries.

## **2.2 International Context**

Since the 1980s, the majority of the literature has included empirical research conducted in various international contexts. Cross-sectional and panel studies only contain a small number of them.

### **2.2.1 Financial Development and Export Performance**

Obamuyi and Edun (1857) examined the effects of bank lending and economic growth on the manufacturing output in Nigeria using time series data spanning 36 years (1973-2009) and tested it using co-integration and vector error correction model (VECM) techniques. The study's findings show that bank lending rates and the utilization of manufacturing capacity have a significant impact on Nigeria's manufacturing output. The output of the nation's manufacturing sector and economic growth, however, did not correlate. To encourage lending and borrowing by financial institutions that is conducive to investment, the government, businesses, and lending institutions must collaborate to review lending and growth policies and create an appropriate macroeconomic environment.

Koopmans (1963) conducted a theoretical and empirical analysis of the relationship between the trade regime, the level of financial development, and the growth performance of a large cross-section of Latin American countries. The systematic finding demonstrates that trade distortions and growth are negatively correlated, and that financial repression has detrimental effects on growth. The regional dummies for Latin America are no longer important when the trade regime and financial repression are held constant. Because of their governments' trade and financial policies, Latin American nations have performed poorly over the past few decades.

Levine (1997) claimed that a growing body of empirical analyses from firm-level studies, industry-level studies, country-specific case studies, and cross-country analyses using various econometric methods and tools of analysis, clearly demonstrate that financial development fosters economic growth through the two "channels" of capital accumulation and technological innovation. He also claimed that

financial efficiency and credit availability are both crucial components of financial development.

Beck (2003) investigated whether nations with more developed financial systems have a comparative advantage in industries that use more external finance using a sample of 56 countries and 36 industries. The findings show that, other things being equal, countries with a higher level of financial development have higher export shares and trade balances in industries that rely more heavily on external finance. The results of a sample of industries with export shares or trade balances provide evidence against the theories that the development of the financial sector simply follows that of the real sector or that results may be influenced by the simultaneous determination of export specialization and financial development. The findings imply that markets and financial institutions play crucial roles in directing outside capital to businesses and thereby determining global trade flows.

Filippini and Molini (2003) used a gravity Equation model to examine trade flows between China and some developed countries to demonstrate the impressive trade performance of East Asian nations. The study found that Asian countries (including China but excluding Japan) had a high propensity to trade high-tech manufactured goods with Japan and the USA and that all coefficient signs were consistent with model assumptions. Another intriguing finding was that, in recent years, China has assumed a significant exporter and importer role within the East Asian economies.

Greenaway et al. (2007) used a panel of 9352 UK manufacturing firms between 1993 and 2003 to demonstrate the significance of financial factors in export performance. The findings indicated that businesses with limited financial resources are less likely to export. Furthermore, balance sheet elements play a significant role in influencing how much a company decides to expand internationally. A stronger balance sheet makes it simpler for businesses to cover the sunk entry costs into the export market, which is why this occurs.

Katircioglu et al. (2007) examined the potential co-integration and the direction of causality between financial development, international trade, and economic growth in India using annual data spanning the years 1965–2004. According to the empirical findings, in the case of India, there is a long-run equilibrium relationship between



financial development, global trade, and real income growth. Additionally, the investigation of unidirectional causality links real income to exports and imports, imports to M2 and domestic credits, imports to domestic credits, and so on. Real income and M2 as well as real income and domestic credits have both been shown to be causally correlated in both directions. Last but not least, no causal relationship between M2 and domestic credits has been established.

Data and Berman (2008) showed how financial factors affect both firms' export decisions and the number of exports by the firm using a sizable cross-country firm-level database with 5,000 firms in 9 developing and emerging economies. The empirical results emphasize how crucially important a firm's decision to enter the export market is to its ability to access capital. However, a company's ability to continue exporting after entering the market and the volume of its exports are not boosted by improved financial standing. Second, it was found that there is disconnect between a company's productivity and its export status due to financial constraints. When a business decides to export, productivity only plays a significant role if it has adequate access to outside funding.

Bao and Yang (2009) examined a potential connection between financial development and China's international trade using panel data for 29 Chinese provinces between 1990 and 2004. The estimated results show and suggest that financial development, in addition to factor endowments, foreign firms, and infrastructure, has a quantitatively large and robust effect on China's manufactured goods trade using the net manufactured index and the four indicators of financial development. To fully capitalize on China's comparative advantage in international trade, further financial system reform should be encouraged.

Berthou (2010) used a database that included trade flow data for 50 exporting countries, 85 importing countries, and 26 ISIC industries for the years 1990 to 2006 to investigate the connection between financial development and international trade. According to empirical findings, financial development has a smaller marginal impact on trade in nations with a higher concentration of zero trade flows. According to estimation results, financial development positively affects both the likelihood that two countries will trade with one another and the value of exports between trade partners, particularly in sectors where businesses heavily rely on the use of external

financing. This final finding helps to explain why the wide global trade margin has grown slowly over time.

Jarreau and Poncet (2010) looked into how export performance of firms in China is influenced by credit constraints. Credit constraints restrict international trade flows and have an impact on the sectoral composition of firm activity, according to panel data from Chinese customs for the years 1997 to 2007. In the provinces with the lowest financial development, the results showed that the export activity of less constrained foreign and joint-venture firms did not fully make up for the underperformance of constrained domestic firms. Credit restrictions give foreign-owned businesses and joint ventures an advantage over domestic private businesses in industries with higher levels of financial vulnerability, as determined by three different indicators.

Manova et al. (2011) examined the connection between credit constraints and the international trade in China using firm-level evidence. Results indicate that foreign-owned affiliates and joint ventures perform better in the export market than privately held domestic companies, and that this advantage is consistently greater in industries with higher levels of financial vulnerability as determined by a several different metrics. These patterns are visible in the export sales, product range, and several export destinations of businesses. Additionally, they are more obvious when businesses deal with higher trade costs. This data suggests that firms' trade flows are hampered by limited credit availability and credit restrictions limit international trade flows and financially developed countries are more likely to export more.

Were et al. (2012) investigated the impact of access to bank credit on the economic performance of key economic sectors using sectoral panel data for Kenya. The findings indicate that credit has a positive and significant effect on the sectoral gross domestic product as measured by real value added. However, when factors like the labor force employed and the sectors' prior economic performance are taken into account, the impact's magnitude is reduced. To improve economic performance, policies aimed at expanding credit availability and deepening the financial sector are crucial. However, these policies should be supplemented with measures that improve the performance of the major economic sectors.

Karahasan (2012) examined the causal link between financial development and global trade with Toda Yamamoto using data from Turkey from 1961 to 2012. Empirical results have shown that there is a bidirectional causal relationship between financial development and global trade. Additionally, through both economic expansion and the exchange rate, financial development indirectly influences global trade. On the other hand, economic expansion and financial development are causally related in both directions. Results demonstrate that there are consequently both direct and indirect relationships between financial development and global trade. Trade and financial development both contribute to economic growth.

Kiendrebeogo (2012) used data from 21 developed and developing countries from 1961 to 2010 and the ECM and ADF test to examine the relationship between the development of the financial sector and global trade. Manufacturing trade is a stand-in for international trade while domestic credit to the private sector to GDP ratio and M2 are used as financial measures. The results of this study demonstrate that there is a two-way relationship between trade and financial levels. Overall, the casual relationship is more influenced by the growth of the financial sector in developing nations than in developed nations.

Okwo (2012) investigated how bank credit to the private sector affected economic growth in Nigeria and discovered that, as anticipated, bank credit to the private sector has a statistically significant positive relationship with GDP. By raising the savings rate, mobilizing and pooling savings, producing information about investments, facilitating and encouraging the inflows of foreign capital, as well as optimizing the allocation of capital, bank credit to the private sector fosters economic growth through capital accumulation and technological advancement (World Bank, 2013).

Felbermayr and Yalcin (2013) used the sectoral structure of a rich three-ways panel data set of German exports for the period 2000-2009 while theirs covers 1992-2003 to analyze the export credit guarantees issued by the German government in the export performance and investigate whether those guarantees indeed do increase exports. However, there is very little empirical data available regarding the effects of those policies. Exporters are particularly susceptible to financial market tensions, according to the literature. As a result, exports might be lower than they should be. Due to this, many nations provide exporters with assistance in the form of export credit insurance.

Belayneh et al. (2013) investigated the long-run and short-run factors influencing the country's export performance, trend, and share of different export commodities from 1970/71 to 2010/11. The long run and short run estimates are examined using Johansson co-integration and vector error correction methods. The study's findings demonstrated that variables like the real effective exchange rate, openness, the home country's RGDP, the growth of the country's infrastructure, and the ratio of private credit to GDP have been found to favourably influence export performance over the long term (financial development). Maintaining robust and sustainable economic growth, enhancing credit availability and infrastructure, upholding stable and hospitable exchange rate policies, and working to reduce trade restriction mechanisms are essential for enhancing Ethiopia's export performance.

Mykoniatis and Ready (2013) investigated the relationship between the degree of financial development and the structure of international trade from a 30-year panel with 65 countries. The researcher uses credit to the private sector as the primary indicator of financial development while using manufactured exports, imports, and their difference relative to GDP as indicators of trade in manufactured goods. The findings indicate that countries with higher financial development levels have higher shares of manufactured exports in their GDP and in their total exports of goods, as well as a higher trade balance in manufactured goods. These findings hold true for panel and cross-country estimations.

Janda et al. (2013) used a panel of 160 countries to analyze the promotion of export credit in the Czech Republic between 1996 and 2008 and estimate two gravity models of exports in the Czech Republic: a static model by the LSDV estimator and a dynamic model by the system GMM. The findings indicate that, after adjusting for political risk, trade costs, and the size of the trading economies, the export credit support offered by the state-owned Czech Export Bank (CEB) has a significant positive impact on the growth of Czech export. The findings also indicate that export promotion is a weakly significant factor that favourably affects the volume of export in the Czech Republic. Additionally, more factors influence the volume of exports. Higher GDP, short distance or lower volume of political risk have a positive impact on Czech export.

Wamboye and Mookerjee (2014) explored the nexus between financial development and manufactured exports using a sample of 29 African countries for the period of 1995-2010. Agriculture is an important part of Africa's growth strategy. The results show that in 11 countries financial development causes manufactured exports and manufactured exports causes financial development in seven countries. The results indicate that financial development in some case has a negative or ambiguous relationship with export performance and found a rich and surprising set of factors.

Coban (2015) looked into the connection between financial development and export the performance of Turkish manufacturing firms between 1991 and 2012. The empirical data demonstrated that while stock market growth contributes to improving export performance for all groups, the direction of causality between banking sector growth and export performance can vary between groups. In Turkey, the manufacturing sector's export performance benefits from financial development.

Jaud et al. (2015) used the firm-product data on agricultural exports from Ghana, Mali, Malawi, Senegal, and Tanzania to examine the effect of financial development on long-term export performance. This study discovered that the long-term export survival of goods with high export-related financial needs is disproportionately promoted by financial development.

Ghimire et al. (2016) looked at how the financial sector affected the export performance of 121 aid-receiving developing countries and found that financial development had a positive impact on job creation and export performance, which helped with productivity gains and export diversification, which helped with economic diversification.

Adeola and Evans (2017) used the FMOLS approach to assess the effects of financial inclusion and development on Nigeria's economic diversification from 1981 to 2014. Even though the effect is not statistically significant, the results demonstrate that financial development has a positive impact on economic diversification. Financial inclusion also has positive and significant effects on economic diversification in terms of financial access and financial usage.

Zhao et al. (2017) systematically investigated how financial development affects exports in an inverted U-shaped manner using a panel of 108 countries spanning the

years 1990 to 2011. The finding offers compelling evidence that improving a country's financial system will increase exports when that country is at a low stage of financial development. However, once the financial system of the economy has reached a certain high level of development, further developments will not significantly boost exports, leading researchers to conclude that financial development has an inverted U-shaped impact on export performance.

Bilas et al. (2017) investigated the connection between Croatia's financial development and foreign trade between the first quarter of 1997 and the last quarter of 2015. The long-run and short-run relationships between the series are investigated using the autoregressive distributed lag (ARDL) bounds testing approach to co-integration. The study's findings demonstrate unidirectional Granger causality from financial development to international trade at the 10 per cent level of significance as well as both short- and long-term positive and negative relationships between Croatia's financial developments and foreign trade.

Kumarasamy and Singh (2018) examined how access to finance and finance development affects firms' ability to enter export markets about Asia-Pacific countries using firm-level data from the World Bank Enterprises Survey. The findings show that improving firms' access to financing and developing the financial sector both encourage entry into export markets. The reach of the banking sector variable is the most noticeable among the indicators of financial development. This study contends that firms operating outside of capitals or major cities can easily enter export markets thanks to advancements in financial development and access to capital (expanding the reach of the banking sector).

Abbasian et al. (2019) used the GMM dynamic panel method to examine the connection between financial development and global trade for 16 Middle Eastern nations using data from 1980 to 2016. According to the findings, financial development has benefited global trade. International trade is positively and significantly correlated with the ratios of bank credit to the private sector to GDP, liquidity to GDP, money supply to GDP, and domestic investment to GDP.

Bekele and Mersha (2019) applied a linear dynamic panel gravity model to examine the performance of coffee export between Ethiopia and the specified importing

countries from 2005 to 2015 using panel data made up of the 71 countries that import coffee from Ethiopia. According to the findings, Ethiopia's coffee export performance to importing nations is primarily influenced by lagged Ethiopian coffee exports, the real gross domestic product of both importing nations and Ethiopia's supply side, weighted distance between Ethiopia and its importing nations, real gross domestic product of importing nations and openness to trade, and supply-side population and institutional quality, all of which are statistically significant. Exception for variable weighted distance, which had a negative correlation, these factors were found to be positively associated with Ethiopia's coffee export performance. While Ethiopia's openness to trade, the real exchange rate, and the variable population of importing nations were found to be statistically insignificant.

Chen et al. (2020) studied the relationship between the growth of city commercial banks (CCBs) and domestic private firms' exports in China using the export trends of 260 Chinese cities between 1997 and 2012. The results show that domestic private firms consistently perform worse than foreign affiliates in financially more vulnerable sectors and that the development of CCBs makes it possible for domestic private firms to get credit at lower rates and increases their exports disproportionately more in these sectors. This suggests that domestic private companies are better able to finance fixed export costs and, as a result, export to more countries. These export gains appear to pass through the destination margin.

Paudel and Sun (2020) analyzed the long run relationship between financial development, export performance and economic growth of the BRICS region covering the period of 1990-2017 using panel unit root tests and panel co-integration analysis based on the Autoregressive distributed lag (ARDL) approach. The empirical findings from both approaches consistently show that there is a significant correlation between financial development, export success, and economic growth. According to the estimated results, these factors, including education level, significantly contribute to the region's economic growth. More significantly, the results of the interacted variable appear to indicate that building a financial system to support export performance is the best way to speed up regional economic growth at the moment.

Vasconcelos et al. (2021) examined the connection between bank credit and economic growth using Granger's causality methodology for panel data, with data from 106

countries for the period between 1970 and 2016. Over the studied period, it was found that global credit expanded faster than overall economic growth. The main empirical findings demonstrate the non-monotonicity of the relationship between financial development and economic growth as well as the general causality that, for low credit/GDP indices, the causality of credit to GDP is not established. According to empirical data, GDP and credit have a correlate of about 96%, indicating a favourable relationship between the two variables.

### **2.2.2 Governance and Export Performance**

Jong and Bogmans (2011) measured trade-related corruption to examine how corruption affects global trade and compare the outcomes to general corruption for the years 1999 to 2002. The findings indicate that while paying bribes to customs official increases imports, corruption generally hinders international trade. The strongest manifestation of this effect is in importing nations with ineffective customs. International trade is drastically reduced by lengthy border lines. It is difficult to determine how unpredictable corruption and policies will affect society.

Horsewood and Voicu (2012) examined the effects of corruption on bilateral trade using a gravity trade model and a data set made up of OECD economies, new EU members, and developing countries. Although both the importing and exporting countries' levels of corruption make international trade more difficult, disparities in their ethical standards do harm trade flows. The model is employed to determine how joining the EU will affect exports and imports from Romania and Bulgaria. These findings suggest that, despite the perception that rules and regulations are overly bureaucratic, corruption does impede trade within the European Union.

Fayissa and Nsiah (2013) investigated to determine the effect of good governance on the growth of per capita income for nations in the Sub-Saharan African region and to find out whether the impact varies by the conditional distribution of GDP per capita. The empirical findings are based on a panel of data collected annually from 28 African nations between 1995 and 2005. Analyzed are six distinct subcategories of good governance (voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption), as well as a single overall indicator of good governance. Regardless of the proxy used for good



governance, the results of the alternative estimated models indicate that it has a positive and significant impact on growth. The findings also show that the effect of good governance varies depending on the conditional distribution of the GDP per capita under consideration.

Berden et al. (2014) used the WGIs to estimate the effects of governance on trade and foreign direct investment (FDI) using a gravity model for the years 1997 to 2004. They focused on 124 potential destination countries as well as 28 OECD countries as source countries. The ability of the government to effectively formulate and implement sound policies (measured with government effectiveness and regulatory quality), the respect of citizens and the state for institutions that regulate economic and social interactions, and the process by which governments are selected, monitored, and replaced (this indicator includes voice and accountability and political stability) (comprising rule of law and the control of corruption) demonstrates that while the other two categories of indicators in the importing country have a positive impact on exports, the first category has a negative impact on trade flows. Results reveal that while voice and accountability have a negative correlation with trade levels, the other five WGI variables all had positive and statistically significant effects.

Ali and Mdhilat (2015) used the gravity model to examine the impact of corruption on bilateral trade for a sample of 37 nations representing the Middle East and North Africa and the European Union between the years 2002 and 2012. The empirical evidence demonstrates that corruption hurts trade flows, that its prevention increases trade potential, and that, in contrast to per capita GDP, GDP has a positive and significant impact on trade flows. Furthermore, the study demonstrates that despite having different official languages, countries can increase trade flows. However, proximity and distance have a detrimental effect on trade flows. More conventional findings point to a beneficial impact of openness on trade volume, reflecting the necessity of regional integration. The nominal effective exchange rate as a price competitiveness variable positively and significantly influences trade flows.

Zarzoso and Ramos (2019) examined whether better economic governance rewards economic achievement and makes the Middle East and North Africa region more easily incorporated into the global economy. Using bilateral exports among 189

trading partners, including 19 MENA exporters, from 1996 to 2013, a gravity model of trade enhanced with governance indicators is estimated. The key findings show that all six governance indicators have a favourable impact on bilateral trade. Results for exporters from the MENA, however, are a little different. Compared to other exporters, governance in the importing nations appears to be less important to MENA exporters. The effect of country-pair similarity in governance indicators leads to the conclusion that MENA exports benefit from similar levels of regulatory quality and the rule of law in exporting and importing countries. The average exporter benefits from having a similar voice and being held accountable, but this does not seem to apply to exporters from the MENA region.

Nguyen and Wu (2020) looked at the relationship between Vietnam's export productivity and a bilaterally-specific governance performance indicator over the years 1996 to 2014. The findings indicate that while regional trade agreements and bilateral governance indicators are positively correlated with Vietnam's export efficiency, tariffs in the importing countries are negatively correlated. The performance of Vietnam's export efficiency also exhibits a general trend of growth, with some fluctuation before 2005 and a steady rise following. Except China, all of the country's major trading partners saw high export productivity. Export efficiency for electronic equipment is extremely low at the disaggregated level, indicating that there is still significant untapped export potential in this product category.

### **2.3 Nepalese Context**

Similar to the global context, research scholars have not been able to focus much on how financial development affects Nepal's export performance. The majority of studies have focused on the role that financial development plays in economic growth and have made the hypothesis that financial development boosts national output by boosting economic activity. The literature on Nepalese export activity is reviewed here.

Basyal (2009) demonstrated how important the financial system is to the smooth operation and regulation of the Nepalese economy. Tapping the productive potentialities and development prospects of the Nepalese economy depends on credit being extended to the private sector in an environment of strict banking regulations.

Findings demonstrate that the financial system is still strong, effective, and vibrant, and that private-sector credit plays a key role in the growth of the national economy by facilitating activities such as investment, saving, economic growth, and stability.

Timsina (2014) looked at the supply-side effects of commercial bank credit to the private sector on economic growth in Nepal. With the help of time series data covering the years 1975 to 2014, the study applied the Johansen co-integration approach and the Error Correction Model. The empirical findings indicate that bank credit to the private sector only contributes to Nepal's long-term economic growth. However, a short-term feedback effect between economic growth and private sector credit has been noted. In the long run, a one per cent point increase in real private sector credit results in a 0.40 per cent point increase in real GDP.

Gautam (2014) investigated the connection between financial development and economic growth in Nepal between 1975 and 2012. The Augmented Dickey-Fuller and Philips Perron tests, as well as the vector error correction method, were used in this study to examine long-term relationships and determine causal relationships. Economic growth is a result of financial development, according to empirical evidence. In reality, economic growth is sustained by financial development over the long term while, in terms of short-term dynamics, economic growth is the cause of it. Based on the empirical findings, this study suggests that to consolidate the financial system, improve its efficiency and effectiveness, and adapt to new changes, reform programs must be implemented.

Paudel and Khanal (2016) conducted empirical research using five years of data and find that for the existence of a cooperative entity; adequate credit-to-deposit ratio must be maintained to contribute to economic development. Cooperatives moving towards expansion with greater and efficient monitoring more mechanisms would contribute to faster economic development.

Timsina and Pradhan (2017) used panel data from twenty-four commercial banks between the years 1996 and 2015 to conduct correlation and regression analysis to examine the impact of commercial bank lending on economic growth in Nepal. The empirical findings demonstrate the beneficial effects of bank lending on Nepal's economic growth, which suggests that policymakers should concentrate more on the

growth of formal sector financing, adequate modern banking sector development, effective financial market development, and establishment of an interest-sensitive investment environment to increase bank lending, which is essential for fostering economic growth in Nepal.

Paudel and Wagle (2017) examined Nepal's export performance and discussed some policy and supply-side challenges faced by a typical landlocked least developed country. The findings show that two of the primary determinants of Nepal's bilateral exports are partners' GDP and trade costs (as proxies by gravity variables like distance, contiguity, and common language). Although Nepal's expanding trade with India contributes to some of this result, a generalizable policy inference is that countries like Nepal will find it challenging to participate more actively in global trade without first addressing their supply-side and logistical bottlenecks.

Kharel et al. (2018) examined the contribution of Nepal's financial structure to economic growth between 1994 and 2011 using Johansen's co-integrating vector error correction model. In contrast to Nepal's capital market, they claimed that the banking industry is crucial for fostering economic growth. To support Nepal's economic growth, they preferred the policy to be centred on the banking sector's development by enhancing its quality and reach.

Paudel and Cooray (2018) demonstrated that despite recent trade policy reforms, the overall export performance of LLDCs is lower than that of non-landlocked developing countries as a result of the additional trade costs that come with being landlocked. The study uses data from 1995 to 2015 to demonstrate this point. The conventional wisdom that economic openness improves export performance also holds true for LLDCs, but the negative effects of distance-related trade costs are more pronounced for LLDC exports than for exports from other developing nations.

Walsh (2018) investigated governance practices and how some Nepalese cooperatives' productivity was impacted. By using stratified random sampling, 400 sample participants were chosen from 18 primary cooperatives in Nepal's provinces 3 and 6. The results showed a significant and favourable relationship between professionalization, accountability, and cooperative performance. Similar to this, participation, transparency, and cooperative performance all have small but favorable

relationships. However, there is a weak and unfavourable correlation between cooperative performance and legitimacy. As a result, the effectiveness of cooperatives is dependent on the presence of elements of good governance like legitimacy, participation, professionalization, accountability, and transparency with honesty. The study's findings support the conclusion that improving cooperative governance is the single most effective way to improve members' quality of life through changes in the economy, society, culture, and technology.

Rana (2019) used the sample period of 1987/88 to 2015/16 to examine the empirical relationship between economic growth and various measures of Nepal's stock market and banking development. According to the study, Nepal's market- and bank-based financial development has aided in the creation of new products and the effective use of its resources. This finding suggests that the exploitation of resources by the financial sector motivates trade performance, which in turn promotes economic growth.

Paudel (2019) suggested that Nepal should concentrate on some products that have high value to weight targeting to reduce the transportation costs significantly using data for the period 2005-2018 using the gravity model. Nepal should implement specific strategies, including developing manufacturing and trade-focused infrastructure, starting bilateral trade negotiations, enhancing the quality of governance alongside second-generation reform programs, connecting education with the national production system, and adjusting the exchange rate system to make it more export-friendly.

Paudel et al. (2020) demonstrated that cooperatives have not contributed to export performance as expected, despite their positive role using time series data for the 26-years from 1993 to 2018. The findings indicated that the direction of the constitution, which accepts the cooperative as a pillar of the Nepali economy, is significant for economic activities in the nation. However, there is room for improvement in the cooperatives' performance so this sector will significantly contribute to the performance of exports.

Paudel and Alharthi (2021) using the index of financial development as developed in an IMF publication by Svirydzenka, examined the role of overall financial

development, financial institutions, and financial markets in the export performance of Nepal employing the Autoregressive distributed lag (ARDL) approach of co-integration. This study used the annual data from 1980 to 2017 and results show that financial development does not have a strong long-run positive relationship with the export performance of Nepal. Financial institutions and financial markets also indicate a negative association with exports. This paper suggested based on the results that there is a need for developing strategies for proper financial development improving the financial institution quality, and widening the financial market targeting to facilitate more meaningfully to the exporters and manufacturers to boost export performance.

## **2.4 Review of Methodology**

The gravity model is based on the idea that the force of gravity is directly proportional to the mass of two bodies and inversely proportional to their distance from one another in the physical sciences. The gravity equation, when applied to economics, states that a bilateral trade flow is positively correlated with the economies of the two countries and negatively correlated with their distance from one another. The trade gravity model is a commonly used econometric model for ex-post analyses of global trade flows as a foundation model for calculating the effects of various policy issues. It is predicated on the notion that the size and proximity of the two countries affect the overall volume of trade between them.

The gravity model is the workhorse of the applied international trade literature. It has been used in literally thousands of research papers and published articles covering all areas of trade. It is of particular interest to policy researchers because it makes it possible to estimate the trade impacts of various trade-related policies, from traditional tariffs to new “behind-the-border” measures. With data increasingly available for developing as well as developed countries, the gravity model has come to be the starting point for a wide variety of research questions with a policy component.

Multidimensional and one-dimensional measures are two ways in which the measurement of export performance has significantly changed over time. One-dimension/single-proxy measures, one-dimension/multiple-proxy measures, or multi-

dimensional/multiple-proxy measures are all possible classifications for export performance. As a result of the choice to use one-dimensional/single-proxy measures, each relationship hypothesis is tested separately with each export performance measure in the design. Additionally, it explained the relationship between the determinants and one dimension of export performance. It also needs to be tested independently and shouldn't be forced into a single composite measure for one dimension (Bekele & Mersha, 2019).

Tinbergen (1962) was the first to use the gravity equation to study international trade flows between any two countries which is an approximation of law. By including more variables and attempting to explain the theoretical foundations of the equation in terms of the Walrasian general equilibrium system, Linnemann (1966) expanded the model.

Lerner and Stern (1970), who derived the gravity equation from the probability model of transactions, and Anderson (1979), who assumed product differentiation, are two other theoretical justifications for the model. (Bergstrand, 1985, 1989) derived a version of the gravity equation based on firm-level product differentiation and monopolistic competition, not national borders. By fusing economic geography and factor proportions theory, Bergstrand (1989) developed the gravity equation at the industry level, which predicts that, under the assumption of constant elasticity of supply transformation between various markets, a good's exports in bilateral trade depend on income and per capita income as well. To avoid the specification issue in the empirical application of the gravity model, it is advised to include the per capita GDP variable.

As part of traditional explanations, Deardorff (1998) demonstrated how a gravity model can result from variations in factor proportions. Additionally, Helpman et al. (2008) and Chaney (2008) connected the structure of gravity equations to models with differentiated goods and heterogeneous firms, while Eaton & Kortum (2002) derived a gravity-type equation from a Ricardian model. According to the law of gravity, gravity models in trade predict that trade volume will be positively impacted by GDP and economic mass and negatively impacted by distance, a trade pattern that would not be directly predictable by the Heckscher-Ohlin model, unless of course, trade costs are proportional to distance Pal & Kar (2021).

Sohn and Yoon (2001) used the gravity model to explain the bilateral trade flows in Korea. The Heckscher-Ohlin pattern is used in Korea's trade, with an emphasis on inter-industry trade rather than intra-industry trade, according to empirical evidence for the data of Korea with its 30 major trading partners in 1995. The empirical findings demonstrate the gravity model's high efficacy in explaining Korea's bilateral trade flows and its broad applicability to the case of a single country. The Heckscher-Ohlin type of Korea's trade pattern is indicated by the coefficient on the trade structure variable. Therefore, rather than economies of scale or product variety, Korea's trade flows are more dependent on factors like comparative advantage and various stages of development.

Rahman (2003) provided a theoretical justification for the use of the generalized gravity model in the analysis of bilateral trade and applied the generalized gravity model to analyze the trade between Bangladesh and its major trading partners using the panel data estimation technique. The empirical findings demonstrate that the size of economies, differences in per capita GNP, and openness of trading partners all positively affect Bangladesh's trade. Bangladesh's exports are largely determined by the exchange rate, total import demand from partners, and Bangladesh's economy's openness. Positive effects on Bangladesh's exports are caused by all three factors. Contrarily, the exchange rate has no bearing on Bangladesh's imports, which are instead influenced by the inflation rates, disparities in per capita income, and trade openness of the participating nations. It has been discovered that the cost of transportation significantly affects Bangladesh's trade negatively. The border between Bangladesh and India is also found to have a significant impact on imports into Bangladesh.

Rahman (2009) examined the trade potential for Australia using cross-section data for 50 countries for the years 2001 and 2005 and augmented gravity models. The trade potential of Australia is then forecasted using the estimated coefficients from the gravity models. It is also confirmed that the gravity model can be used to analyze bilateral trade flows. The empirical results show that factors such as economic size, per capita GDP, openness, and a shared language have a positive impact on Australia's bilateral trade while factors such as distance from trading partners have a negative impact. Also revealed by the estimated results is Australia's enormous trade



potential with Singapore, Argentina, the Russian Federation, Portugal, Greece, Chile, the Philippines, Norway, Brazil, and Bangladesh.

The gravity model was expanded by Javorcik (2005) to incorporate a new metric for the trading partners' position to other nations. When the gravity equation is estimated using the intra-OECD trade flows, the measure is statistically significant. The findings show that the two peripheral countries rely more on bilateral trade than their central counterparts.

The gravity model's success in empirical international economics can thus be explained by the fact that, in contrast to Heckscher-Ohlin models that assume a frictionless world, its results allow for the inclusion of non-trivial factors like distance between countries and trade costs, and it accurately predicts the volume and direction of international trade. However, if such costs are not offset by sizable markets at destinations, high trade costs may also be thought of as a fixed "entry" cost and the resulting trade pattern may collapse to Heckscher-Ohlin predictions Marimoutou et al. (2010).

Tumwebaze Karamuriro (2015) used an augmented gravity model of trade to examine the factors influencing Uganda's exports over the years 1980 to 2012. The findings indicate that Uganda's exports were positively and statistically significantly impacted by its GDP, importer's GDP, importer's GDP per capita, per capita GDP difference with its trading partners, real exchange rate, official common language, and contiguity. The study also demonstrates that Uganda's exports were significantly boosted by the formation of COMESA and the EAC. On the other hand, Uganda's export flows were negatively impacted by its low GDP per capita and geographic isolation from its trading partners. These findings are crucial for the development of trade policies to maximize Uganda's export potential and promote economic growth.

## **2.5 Research Gap**

According to the literature, financial development enhances export performance in global contexts but has no observable impact on Nepal. The majority of studies are focused on the stock market, financial institutions, cooperatives, and financial access in developed nations. Since there hasn't been much research on Nepal, this study

concentrates on the current situation of private-sector lending by Nepalese banks and the country's export performance.

In recent years, the majority of studies have concentrated more on the impact of financial development on economic growth than on export performance and concluded that financial development promotes commerce and economic activity. Additionally, a thorough examination of the financial development component's role in the context of Nepal has not been done. In this study, domestic credit to the private sector is discussed in the promotion of Nepal's exports. This study aims to close the knowledge gap regarding domestic credit to the private sector and export that needed to be brought to the attention of both political and academic circles. This study attempted to highlight current issues and Nepal's export performance using the most recent data on bank lending to the private sector.

## **CHAPTER-III**

### **RESEARCH METHODOLOGY**

The methodology and design of the research are covered in this chapter. Therefore, the information in this chapter covers research design, population and sampling, data collection sources, analytical tools, and the model.

#### **3.1 Research Design**

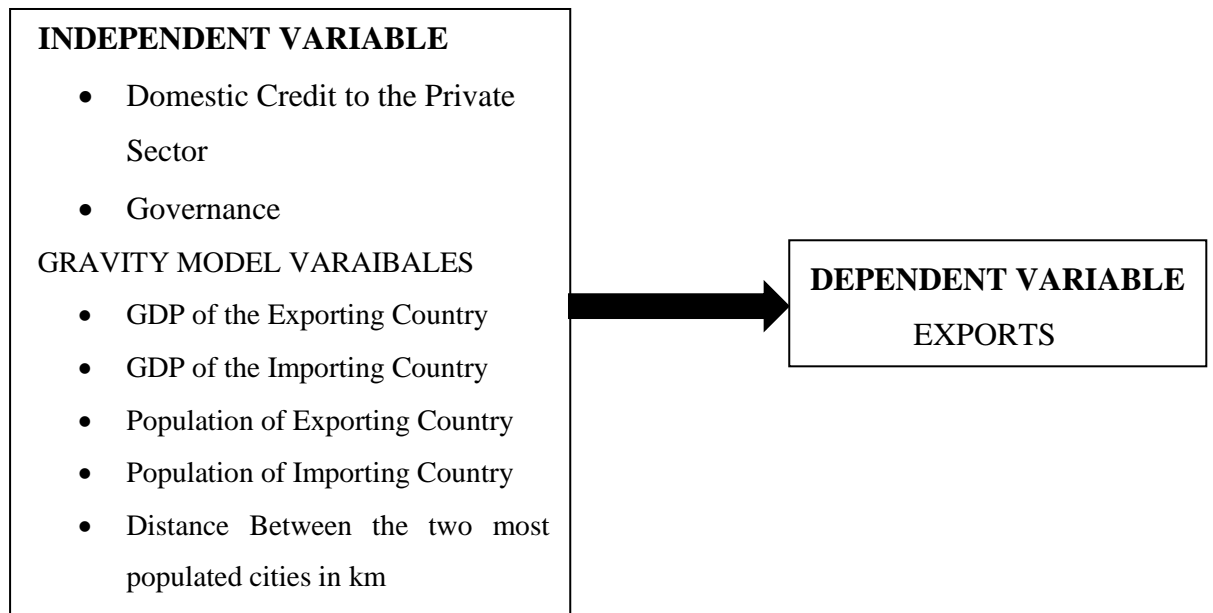
A quantitative and analytical research design is employed in the execution of this study. The years 1996 to 2019 have been chosen to study export performance trends and patterns as well as the relationship between export performance and domestic credit to the private sector and Governance. The top 25 importing markets of all products exported by Nepal, which together account for 98 per cent of the country's exports, are selected to test the relationship as of 2019. The top 25 importers are chosen based on data from the previous 10 years using secondary data from the World Development Indicator. Due to the limited availability of data prior to 1996, the period from 1996 to 2019 was chosen to study the trend of governance.

#### **3.2 Conceptual Framework**

The study's independent variables are domestic credit to the private sector, governance, and the gravity model's parameters. The dependent variable is export.

The conceptual framework of this study is shown in Figure and is based on the theoretical and empirical data on export performance that are currently available.

**Figure 3.2: Conceptual Framework**



*Fig 3.2: conceptual framework*

### **3.3 Models and Variables**

The export is the study's dependent variable. The domestic credit provided by banks to the private sector and governance are the independent variables. Here is a brief explanation of each of these variables:

#### **3.3.1 Dependent Variable**

##### **3.3.1.1. Export**

When it comes to international trade, an export is a good made in one nation and sold in another, or a service rendered in one nation to a national or resident of another nation. The exporter of these goods or services is the supplier, and the importer is the foreign customer. More exports spur economic growth when the supply and demand elasticity of the exported goods is higher.

The three perspectives on exports as a growth engine are shown in (Helpman and Krugman, 1985; Ben-David and Loewy, 1998). First, export growth can be directly sped up by raising exports as a percentage of total output. An increase in the foreign demand for domestic exportable goods can result in an overall increase in output by

increasing employment and income in the exportable sector. Second, increasing exports can indirectly affect growth by utilizing economies of scale, better resource utilization, efficient resource allocation, and the stimulation of technological advancement brought on by competition from overseas markets. Third, exports may be able to provide the foreign currency necessary to increase imports of capital and intermediate goods, which will in turn increase capital formation and spur output growth (Balassa, 1978; Buffie, 1992) in any developed and developing countries.

### **3.3.2 Independent Variables**

#### **3.3.2.1. Domestic Credit to the Private Sector**

Three different financial development indicators were identified by Huang (2010). The credit to the private sector is one of them. Domestic credit to private sector by banks (% of GDP) refers to financial resources provided to the private sector by other depository corporations (deposit taking corporations except central banks), such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable.

By giving locals better financial access, banks and other financial institutions helped to promote savings and, by extension, investments. In turn, this accelerated local economy growth. Analysis of the role of financial development also reveals a positive and significant impact of human capital on growth, which could open up less-financial-intensive channels for growth and production. A significant portion of credit in Nepal is provided through the banking system, though there are some institutions such as savings and credit cooperative societies, finance companies, development banks and micro finance institutions.

Commercial banks provide a lending service (grant loans and advances) to individuals, firms and government which may be in the form of short, medium or long term basis bearing in mind, the three principles guiding their operations which are profitability, liquidity and solvency Olokoyo (2011). Commercial banks mobilize fund from surplus economic units (savers) in the form of deposit and provide it to the deficit economic units (ultimate borrowers) in the form of credit and this process leads to the introduction of credit system (Assefa, 2017).

### 3.3.2.2. Governance

The World Bank states that “Governance is epitomized by predictable, open, and enlightened policymaking; a bureaucracy imbued with a professional ethos; an executive arm of government accountable for its actions; and a strong civil society participating in public affairs; and all behaving under the rule of law”. In terms of economics, it refers to the process by which a nation manages its economic affairs, including its macroeconomic policies, and the conditions that encourage business and support the private sector. The projects of the Worldwide Governance Indicator (WGI) build aggregate indicators of six major aspects of governance. They are: Voice and Accountability, Political Stability and Absence of Violence and Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption

The WGIs first constructed by Kaufmann et al. (2007) for the World Bank are normalized onto a 0-100 scale as in (Berden et al, 2014). Each of these six aggregate indicators represents a different dimension of governance and are defined as follows:

**Voice and accountability** measures the extent to which a country’s citizens are able to participate in selecting their government, as well as the freedom of expression of association and the media.

**Political stability** measures perceptions of the likelihood that the government will not be destabilized or overthrown by unconstitutional or violent means.

**Government effectiveness** measures the quality of public services, the civil service (and its degree of independence), the policy formation and implementation process and the government’s overall commitment to implementing policies.

**Regulatory quality** indicates the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

**Rule of law** measures the extent to which agents have confidence in and abide by the rules of society, and with particular emphasis, the quality of contract enforcement, the police and the courts.

**Control of corruption** measures the extent to which public power is not exercised for private gain, including both petty and grand forms of corruption as well as the extent of ‘capture’ by elites and private interests.

Berden et al. (2014) grouped the above-described indicators into three different concepts. The first deals with the “process by which governments are selected, monitored and replaced” and it is measured by two indicators: 1) the voice and accountability of a country’s citizens and 2) political stability. The second category of the WGI refers to factors influencing the “capacity of the government to effectively formulate and implement sound policies”; the two WGI associated with this category are 3) the government effectiveness and 4) regulatory quality. Both are expected to be positively associated with trade flows. The third category refers to factors associated with “respect of citizens and the state for institutions that govern economic and social interactions”; the two WGI in this category are 5) rule of law and 6) the control of corruption. Both are also expected to be positively associated with trade flows.

In this study the third category is used to indicate governance. The aggregate of these two variables is used as proxy for the governance variables. To analyze Nepal's export performance, this study used a gravity model with these dependent variables and independent variables. Gravity models offer a simple framework for comprehending the factors that influence international flows, such as trade, migration, or capital.

### **3.3.3 Gravity Model**

The basic formulation of the gravity model explains bilateral trade flows in analogy to Isaac Newton’s law of gravity, by the attraction of two countries’ masses (measured by GDP and/ or population), reduce by the distance which is a proxy of transportation cost and other factors. Tinbergen (1962) was the first to use the gravity equation to study international trade flows between any two countries which is an approximation of law. By including more variables and attempting to explain the theoretical foundations of the equation in terms of the Walrasian general equilibrium system, Linnemann (1966) expanded the model. Here is a brief explanation of each of these variables:

### **3.3.3.1 GDP of the Exporting Country**

The origin nation that exports to the partner nations is the subject of this variable. For this variable, the study makes use of the CEPII data set which is measured in terms of USD thousands.

### **3.3.3.2 GDP of the Importing Country**

The trading partner nation that imports from Nepal is indicated by this variable. For this variable, the study makes use of the CEPII data set which is measured in terms of USD thousands.

### **3.3.3.3 Population of the Importing Country**

The population of the importing nation is indicated by this variable. For this variable, which has a scale of thousands, the CEPII data set is used in the study.

### **3.3.3.4 Population of the Exporting Country**

This variable is related to the country's population that is exporting. For this variable, which has a scale of thousands, the CEPII data set is used in the study.

### **3.3.3.5 Distance**

The term "distance" refers to the distance between trading partners, either in terms of the great circle distance between the major ports or the distance between their capital cities. The primary factor that introduces distance into the gravity equation is shipping costs. Being close together cuts down on transportation expenses, delays, the amount of spoilage, and the cost of learning about the partners' administrative and legal processes. Countries that are close to one another are more likely to have had long-standing bilateral trade relationships, which helps them better understand one another's traditions and preferences Javorcik (2005).

An important aspect of trade is the cost of transportation. The production of the same good in two or more countries while transport costs are present is incompatible with the equalization of factor prices. Additionally, different trade models may behave differently when transport costs and regional variations in demand are present Paas (2000), quoted from Davis & Weinstein (1996). The distance is a proxy for



transportation costs. Therefore, the volume of trade between two countries is inevitably influenced by their distance from one another. The amount of space separating two objects, points, lines, etc. is referred to as their distance. The distance between the populated cities of the exporting country's trading partners is defined in this study as the gravity variable.

More specifically, the given model has been segmented into following models:

### 3.3.4 Econometrics

#### Model 1: Gravity Model Equation

The gravity model, which is currently the "workhorse" for modeling bilateral trade flows. According to the standard gravity model, which Tinbergen (1962) proposed, trade between two countries depends on both their relative economic size and distance from one another, just like the gravitational force between two masses. The fundamental model was as in Equation. (1).

$$\ln(X_{ij,t}) = a + b_1 \ln(GDP_{i,t}) + b_2 \ln(GDP_{j,t}) + b_3 \ln(DIS_{ij,t}) + e_{ij,t} \dots \dots \dots (1)$$

In this equation 1,  $GDP_{i,t}$  is the GDP of exporting country,  $GDP_{j,t}$  is the GDP of importing country and  $DIS_{ij,t}$  is the distance between them. The equation can be changed into a linear form for the purpose of econometric analyses by employing logarithms. I augment this basic model by adding a number of explanatory variables to improve the explanatory power of the estimated trade equations following the notable studies in international trade such as Anderson (1979), Bergstrand (1985), and Deardorff (1995).

#### Model 2: Augmented Gravity Model Equation

All empirical studies on the relationship between international trade and the quality of institutions use the gravity model. This equation is called the workhorse of applied international economics Eichengreen and Irwin (1998). The typical gravity equation is:

$$\ln Exp_{i,t} = \alpha + \beta_1 \ln GDP_{i,t} + \beta_2 \ln GDP_{j,t} + \beta_3 \ln POP_{i,t} + \beta_4 \ln POP_{j,t} + \beta_4 \ln Dist_{j,t} + e_{i,j,t} \dots \dots \dots (2)$$

Where,

$\alpha$  = constant term

$LExp_{i,t} = LExports_{i,j,t}$

$LGDPD_{i,t} = \text{Log GDP of exporter's country}$

$LTPGDPD_{j,t} = \text{Log GDP of importer's country}$

$LPOP_{i,t} = \text{Log Population of exporter's country}$

$LTPPOP_{j,t} = \text{Log Population of importer's country}$

$LDist_{i,j,t} = \text{Log Distance between most populated cities in km}$

$E_{ij,t}$  = stochastic error term

$t$  = time period

$\alpha$  is the constant term and  $\beta_1, \beta_2, \beta_3,$  and  $\beta_4$  are the beta coefficients of individual explanatory variables.

The dependent variable is a logarithm of Exports in Model 2's gravity model equation, while  $LGDP_i, LGDP_j, LPOP_Ni, LPOP_Nj,$  and  $LDIST_{ij}$  are independent variables. The subscripts  $i$  and  $j$  refer to Nepal and its trading partners, respectively. The CEPII database was used to calculate  $LGDP_i$  and  $LGDP_j$ , which are the logarithms of annual GDP values in USD for both exporting and importing countries (current value in thousands).

The logarithm of the distance between Nepal and country  $j$  is  $LDist_{ij}$ . Distance is a time-invariant variable Bekele and Mersha (2019). The growing distance, according to Moser et al. (2011), causes a decline in the correlation between international and domestic business cycles. Here, information on the separation between the population densities of Nepal and its 25 trading partners' cities was gathered. The information was expressed in kilometers and it originated from the CEPII database (km).

The population of country  $i$  in year  $t$  is represented by the logarithms  $LPOP_i$  and  $LPOP_j$ . Export demand rises in direct proportion to population size. From CEPII, the Population Division, the total population of Nepal and its 25 trading partners was obtained in thousands of individuals (POP). The level of self-sufficiency and the

absorption effect in Nepal as well as that of trading partners are measured using this method. This equation shows how exports and the variable gravity are related.

**Model 3: Augmented Gravity Model**

$$LEXP_{i,t} = \alpha + LDCPS_{i,t} + \beta_1 LGDP_{i,t} + \beta_2 LTPGDP_{j,t} + \beta_3 LPOP_{i,t} + \beta_4 LTPPOP_{j,t} + \beta_4 LDist_{i,j,t} + e_{i,j,t} \dots\dots\dots (3)$$

Where,

$$LDCPS_{i,t} = \text{Log Domestic credit to private sector by Banks (\% of GDP)}$$

The primary interdependent variable, in addition to the gravity model equations, is logarithm of domestic credit to the private sector. The WDI database, which lists the financial resources provided to the private sector by other depository corporations (deposit taking corporations other than central banks), was used to extract the domestic credit provided by banks to the private sector. This includes loans, purchases of non-equity securities, trade credits, and other accounts receivable. The relationship between domestic credit to the private sector and gravity variables is shown in Equation 3.

**Model 4: Augmented Gravity Model**

$$LEXP_{i,t} = \alpha + LDCPS_{i,t} + GORV + \beta_1 LGDP_{i,t} + \beta_2 LTPGDP_{j,t} + \beta_3 LPOP_{i,t} + \beta_4 LTPPOP_{j,t} + \beta_4 LDist_{i,j,t} + e_{i,j,t} \dots\dots\dots (4)$$

Where,

$$GORV = \text{Governance}$$

The governance variable is an interdependent variable in addition to the second equation. The two WGI; rule of law and the control of corruption, as discussed in Berden et al. (2014), are used to indicate the governance variable in this study which

refers to the factors that are related to "respect of citizens and the state for institutions that govern economic and social interactions." Additionally, it is anticipated that both will have a favorable impact on trade flows. The gravity variable and governance are related, as shown by equation 4.

### **3.4 Techniques of Data Analysis**

Using STATA software, data analysis is carried out. The gathered data were entered into the database program Microsoft Excel and coded in the statistical program STATA so that the information could be obtained by using the various analytical tools. According to the needs of the research, the coded data were rerecorded and transformed. The data are represented, tabulated, and analyzed using a variety of STATA statistical tools.

The report relies heavily on secondary data that was gathered through WDI, WGI, and CEPII in order to meet the objective. Utilizing descriptive statistics, the data is examined. The Gravity model approach is used to examine the impact of domestic credit to private sector and governance on the export performance. Regression, correlation, and other statistical tools are used to analyze domestic credit to the private sector, governance, and its impact on Nepal's export performance.

### **3.5 Sources of Data**

The secondary data are the foundation of the study. The necessary information and data are gathered from the following sources: The Centre d'Etudes Prospectives et d'Informations Internationales (CEPII), World development indicator data set, Worldwide Governance indicator, International Trade Centre and Ministry of finance.

## CHAPTER-IV

### TRENDS AND PATTERNS OF DOMESTIC CREDIT TO THE PRIVATE SECTOR AND EXPORT PERFORMANCE

The trend and patterns of domestic credit to the private sector and the export performance of Nepal are discussed in this chapter. To accomplish its objectives, this chapter used graphs and tables to discuss the patterns and trends of domestic and export credit to the private sector.

#### 4.1 Sector-wise Domestic Credit of Banks and Financial Institutions (Aggregate)

In this study, the year 2018 and 2019 are used to demonstrate, the domestic credit provided by banks and other financial institutions, segmented by sector, during the same time period.

**Table 4.1: Sector-wise Domestic Credit of Banks and Financial Institutions**

Sector-wise	Mid-July			
	2018	Sector-wise %	2019	Sector-wise %
Agricultural and Forest Related	115,386	5	157,905	5
Fishery Related	2,725	0.11	4,216	0.14
Mining Related	5,033	0.21	7,313	0.25
Agriculture, Forestry & Beverage Production Related	415,539	17	510,038	18
Construction	253,187	10	309,417	11
Electricity, Gas and Water	86,863	4	126,594	4.35
Metal Products, Machinery & Electronic Equipment & Assemblage	33,148	1	37,076	1
Transport, Communication and Public Utilities	83,255	3.44	93,129	3.20
Wholesaler & Retailer	532,011	22	615,309	21
Finance, Insurance and Real Estate	203,050	8.38	233,847	8.03
Hotel or Restaurant	91,146	4	122,122	4
Other Services	105,969	4.37	122,900	4.22
Consumption Loans	166,319	7	163,819	6
Local Government	1,554	0.06	1,569	0.05
Others	327,742	14	406,642	14
<b>TOTAL</b>	<b>2,422,926</b>	<b>100</b>	<b>2,911,897</b>	<b>100</b>

*Source: Author's presentation using the data from NRB (2078)*



lockouts, and closures that caused negative shocks to the entire economy and led to a decline in export growth in various years up until 2008.

Except for a few years after 2002, when outmigration from Nepal increased because of the political climate, the trends in exports and domestic credit to the private sector have been remarkably similar. Early in the new millennium, domestic credit to the private sector decreased for the same cause. It then gradually increased after the comprehensive peace agreement between the governments of Nepal led by the major political parties and the Nepal Communist Party (Maoist) in 2006 put an end to political unrest (Hachhethu, 2008).

Outmigration increased after the Nepal Communist Party (Maoist) took control of the city regions in 2001, and the economy has increasingly come to rely on remittances as a result of the worst export growth in 2002. Two exogenous shocks in 2015, namely a devastating earthquake and an unofficial trade blockade at the Indian borders because of Nepal's internal political unrest, are to blame for the negative growth of exports in 2016. Over this time, export growth has only grown by about 7.2 per cent on average.

The domestic private sector credit increased significantly over the time, except 2002 and 2011. Over the past 23 years, remittance growth, government spending growth, and other factors have contributed significantly to the rise in private sector credit to GDP growth. These included loans to the banking sector for real estate and margin lending, NRB regulations, the short-term nature of loans, and an increase in remittances (Timsina, 2014). The domestic credit to the private sector reached its peak in 2009/2010 as a result of monetary policy, which instructs commercial banks to direct their credit toward productive industries, such as agriculture, hydroelectricity, tourism, and other sectors.

Over the study period in Nepal, the ratio of bank credit to the private sector did rise steadily whereas the exports performance is fluctuating. Since the 1980s, a comprehensive reform program has been implemented. A thriving private sector had replaced Nepal's heavily centralized, ineffective state-owned banking sector. To speed up the transformation process of the growth of the financial sector in the nation, NRB and the Government of Nepal took a several number of actions.

The graph demonstrates that domestic credit to the private sector has improved while export growth has remained modest over time. The rate of export growth is highly erratic; it peaked at about 39.65 per cent in 1999 and has generally been positive. Negative shocks occur in jerks in 2001, 2006, 2009, 2015, and early 2019.

### 4.3 Composition of Nepalese Export

The various goods exported from Nepal are displayed in the composition of Nepalese Export. The top 10 exports from Nepal over the previous five years in two-digit codes are shown in the below table.

**Table 4.3.1 Top 10 Exports from Nepal**

Code	Product label	Exported value in 2016	Exported value in 2017	Exported value in 2018	Exported value in 2019	Exported value in 2020
'15	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal ...	2091	756	22061	245153	255720
'55	Man-made staple fibers	54838	74799	84136	83468	58799
'09	Coffee, tea, mate and spices	70752	78133	79348	75090	86858
'57	Carpets and other textile floor coverings	75146	68939	71618	67738	54373
'23	Residues and waste from the food industries; prepared animal fodder	23543	30624	31040	28979	31021
'53	Other vegetable textile fibers; paper yarn and woven fabrics of paper yarn	20000	26339	25101	32691	33046
'62	Articles of apparel and clothing accessories, not knitted or crocheted	59639	58776	56595	50098	41938
'20	Preparations of vegetables, fruit, nuts or other parts of plants	43814	45252	43745	38901	28147
'56	Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof	17571	18516	15203	21190	24724
'54	Man-made filaments; strip and the like of man-made textile materials	32632	30483	30367	30537	23675

*Source: ITC calculation based on Trade and Export Promotion Centre Statistics, 2017*

*Units- USD Thousands*



According to the above table, Nepal's top exportable goods are animal or vegetable fats, synthetic staple fibers, tea and spices, textiles for carpets and floor coverings, paper yarn, and synthetic filaments, man-made filaments strips and other synthetic textile materials.

#### 4.4 Direction of Nepalese Exports

The various products exported from Nepal to its destination countries are displayed in the direction of Nepalese Export. The table below lists the top 10 Nepali importers over the last seven years.

**Table 4.4.1 TOP 10 Export Destinations of All Nepalese Products (Based on the Last Seven Years Data)**

Importers	Exported value in 2013	Exported value in 2014	Exported value in 2015	Exported value in 2016	Exported value in 2017	Exported value in 2018	Exported value in 2019
World	863,258	900,859	660,182	728,846	736,979	781,143	959,629
India	578,091	584,107	419,094	394,596	419,169	461,816	659,575
USA	68,236	75,372	70,399	88,480	82,841	92,803	98,372
Germany	33,534	32,341	26,756	29,439	29,161	29,459	28,316
UK	19,472	20,583	20,658	24,655	25,418	26,081	22,146
Turkiye	11,642	16,870	12,642	27,499	47,635	35,173	24,116
France	12,521	12,382	10,058	11,623	11,097	11,719	12,061
Australia	5,319	5,843	4,975	5,754	6,545	6,062	6,334
China	20,235	28,010	11,476	18,107	18,155	22,200	18,116
Italy	9,563	11,873	9,042	10,909	12,084	11,274	9,012
Canada	8,340	8,666	6,950	8,296	8,274	8,112	7,500

*Source: ITC calculation based on Trade and Export Promotion Centre Statistics, 2017*

*Units- USD Thousands*

Tibet and India accounted for all of Nepal's international trade prior to 1951. Trade with countries like Bangladesh, Malaysia, Singapore, Thailand, the United States of America, as well as with countries like Japan, Germany, France, and Spain, increased after democracy was established in Nepal in 1951. During the fiscal year 2018/19, Nepal imported from 149 countries and exported to 113 countries (MoF 2019). After



Figure 4.5 depicts the trend in Nepal's governance from 1996 to 2019. Rule of law and corruption control are two of the six indicators of governance that are used in this study. Rule of law and control of corruption are used to refer to the factors associated with “respect of citizens and the state for institutions that govern economic and social interactions” as discussed by Berden et al. (2014). Both are also expected to be positively associated with trade flows.

## CHAPTER- V

### RESULTS AND DISCUSSIONS

To critically examine the quantitative data, this chapter aims to achieve the study's objective. It includes an analysis, a discussion, and an interpretation of the findings based on the information gathered.

#### 5.1 The Gravity Modelling's Results

**Table 5.1.1 Gravity's Model, the estimated results from Equation 2, (1996-2019)**

<b>Dependent variable: exports USD log (LEXP)</b>	<b>(FE)</b>	<b>(RE)</b>
GDP of Nepal-US\$ log (lgdp)	0.698*** (-0.006)	0.674*** (-0.002)
GDP-trading partner US\$ log (ltpgdp)	-0.077*** (-0.027)	-0.012 (-0.004)
Population of Nepal-log (lpop)	-1.430*** (-0.05)	-1.520 (-0.01)
Population-trading partner-log (ltpop)	0.061 (-0.038)	0.009 (-0.003)
Distance-log-km (ldist)	dropped	0.016*** (0.006)
Number of observation	600	600
Numbers of groups	25	25
F-Statistics	10347.23	
R-squared	0.805	
Correlation (RE)	-0.313	

*(Source: Researcher's calculation - 1)*

**Note:** \* indicates significance at the 10% level. \*\* indicates significance at the 5% level. \*\*\* indicates significance at the 1% level.

Equation 1 estimated the robust regression result of Nepal's export performance, which is shown in Table 5.1.1. It shows Nepal's export performance was found to be positively and significantly influenced by trading partners' gross domestic product and population. The remaining variable: the population of the importing countries, was found to be insignificant even at a 10 per cent significance of level.

A statistically significant coefficient on the GDP of importing nations was discovered to exist at the one per cent level. The estimated coefficient of -0.08 of the GDP of importing countries suggests that a one per cent increase in the GDP of importing countries will roughly result in a 0.08 per cent decrease in the flows of Nepal's exports. The theoretical expectation of the positive value of gravity trade flow anticipates that trade volumes increase with an increase in a partner's economic size.

The estimated GDP coefficient for Nepal, on the other hand, was 0.70, which means that, assuming all other factors remain constant, an increase in GDP will correspond to a roughly 0.70 per cent increase in exports. Improvements in the supply side of the GDP are a sign of stronger production capacity. The findings are consistent with Mold (2018), study on African nations that identified the key determinants of export performance for 48 African nations throughout 1987–2006 and discovered that supply capacity had a favourable impact on export performance.

In addition, a sizable population was discovered in Nepal. The estimated coefficient was -1.43, meaning that, when all other factors are held constant, a one per cent increase in Nepal's population will cause its exports to decline by 1.43 per cent. Additionally, it shows that as the population grows, so does the import-heavy consumption pattern. The estimated coefficient of the population of the trading partner is 0.06 which is not statistically significant even at the 10 per cent significance level.

In the results of the fixed effects regression, the distance variable is omitted. The weighted distance serves as a proxy for the degree of trade resistance or the capacity to continue trading with given transportation costs between trading partners. Since transportation costs increase as distance increases, one would anticipate that the coefficient would be negative. The regression result from random effects displays a different outcome than the regression result from fixed effects, where the variable distance was found to be significant at the one per cent level of significance.

From a random effect model, it was discovered that the variable weighted distance was statistically significant at the one per cent level. As the distance between Nepal and its trading partners grows, the level of export declines, which is also in line with the theoretically anticipated negative sign. The estimated coefficient of distance is

0.02, which implies that the country's imports decreased by 0.02 per cent as the distance between Nepal and the importing country increased by one per cent, *ceteris paribus*.

The outcome is in line with Yishak (2009) investigation into the factors influencing Ethiopia's export performance using a panel gravity model approach in the period 1995–2007, which included 30 major trading partners. Yishak discovered that transportation costs hurt Ethiopia's export performance.

Using data on bilateral exports with at least 134 partners averaged over a three year between 2009 and 2011, Paudel & Wagle (2017) identified distance and trade cost as the primary determinants of Nepal's bilateral exports.

Paudel and Cooray (2018) demonstrated that despite recent trade policy reforms, the overall export performance of LLDCs is lower than that of non-landlocked developing countries as a result of the additional trade costs that come with being landlocked. The study uses data from 1995 to 2015 to demonstrate this point. The conventional wisdom that economic openness improves export performance also holds for LLDCs, but the negative effects of distance-related trade costs are more pronounced for LLDC exports than for exports from other developing nations.

Also, Filippini and Molini (2003) used a gravity Equation model to examine trade flows between China and some developed countries to demonstrate the impressive trade performance of East Asian nations. The study found that Asian countries (including China but excluding Japan) had a high propensity to trade high-tech manufactured goods with Japan and the USA and that all coefficient signs were consistent with model assumptions. Another intriguing finding was that, in recent years, China has assumed a significant exporter and importer role within the East Asian economies. And concluded that for these countries the technological distance has not been a barrier but an incentive to catch up and compete with more advanced countries.

**Table 5.1.2 Domestic credit to the private sector and the export performance, the estimated results from Equation 3, (1996-2019)**

<b>Dependent variable: exports USD</b>				
<b>log (LEXP)</b>	<b>(FE)</b>	<b>(RE)</b>	<b>(FE)</b>	<b>(RE)</b>
GDP of Nepal-US\$ log (lgdp)	0.698*** (0.006)	0.674*** (0.002)	0.130*** (0.015)	0.093*** (0.003)
GDP-trading partner US\$ log (ltpgdp)	-0.077*** (0.027)	-0.012 (0.004)	-0.064 (0.022)	-0.010 (0.004)
Population of Nepal-log (lpop)	-1.432*** (0.046)	-1.517 (0.008)	-1.102 (0.032)	-1.163 (0.005)
Population-trading partner-log (ltpop)	0.061 (0.038)	0.009 (0.003)	0.044 (0.032)	0.007 (0.003)
Distance-log-km (ldist)	Dropped	0.016*** (0.006)	Dropped	0.013 (0.005)
Domestic credit to private sector-log (ldcps)			0.304*** (0.006)	0.313*** (0.001)
Number of observation	600	600	600	600
Numbers of groups	25	25	25	25
F-Statistics	10347.23		14416.54	
R-squared	0.805		0.844	
Correlation (RE)	-0.313		-0.262	

(Source: Researcher's calculation - 2)

**Note:** \* indicates significance at the 10% level. \*\* indicates significance at the 5% level. \*\*\* indicates significance at the 1% level.

Table 5.1.2 shows the robust regression result of Equation 2 regarding Nepal's export performance in relation to domestic credit to the private sector. This table shows that at the one per cent significance level, domestic bank credit provided to Nepal's private sector had a favorable and significant impact on export performance. The estimated coefficient for the amount of domestic credit provided to the private sector was 0.30, which, ceteris paribus, means that an increase in the amount of domestic credit provided to the private sector would increase Nepal's exports to these countries by roughly 0.30 per cent.

The outcome is consistent with studies Paudel and Alharthi (2021) that examined Nepal's export performance using panel data sets from 1980 to 2017 and discovered that financial development had a positive impact on Nepal's export performance as well as studies Timsina (2014) that examined bank credit in the context of economic growth using data from 1975 to 2014 and discovered that bank credit to the private sector only has beneficial effects on economic growth in Nepal over the long term.

The gravity variables are interpreted similarly to those in table 1.

**Table 5.1.3 Governance and the export performance, the estimated results from Equation 4, (1996-2019)**

<b>Dependent variable: exports USD</b>		
<b>log (LEXP)</b>	<b>(FE)</b>	<b>(RE)</b>
GDP of Nepal-US\$ log (lgdp)	0.100*** (-0.006)	0.090*** (-0.001)
GDP-trading partner US\$ log (ltpgdp)	-0.016*** (-0.007)	-0.002 (-0.001)
Population of Nepal-log (lpop)	0.098*** (-0.005)	0.097*** (-0.001)
Population-trading partner-log (ltpop)	0.004 (0.007)	0.002 (0.001)
Distance-log-km (ldist)	Dropped	0.003*** (0.002)
governance	0.522*** (0.005)	0.529*** (0.001)
Number of observation	600	600
Numbers of groups	25	25
F-Statistics	123591.73	
R-squared	0.928	
Correlation (RE)	-0.082	

(Source: Researcher's calculation - 3)

**Note:** \* indicates significance at the 10% level. \*\* indicates significance at the 5% level. \*\*\* indicates significance at the 1% level.



Table 5.1.3 displays the robust regression result of Equation 3 regarding Nepal's export performance to governance. At one per cent level, the governance coefficient is statistically significant and has a positive value. The estimated coefficient for governance is 0.52, which, *ceteris paribus*, means that an increase in governance in Nepal will increase in export flows of approximately 0.52 per cent, holding other variables constant.

This outcome is in line with the theory that asserts that better governance is associated with higher Expected values. The general market environment and the macroeconomic environment are both impacted by this. A country's improved governance is one of the indicators of progress in the legal and judicial system, taxation, labour relations, financial system, investment procedures, and customs administration UNCTAD (2008) and Walsh (2018) also demonstrates how the 400 sample members from 18 primary cooperatives in provinces 3 and 6 have a significant impact on the performance of cooperatives in Nepal. A positive and significant relationship exists between cooperative performance and good governance.

## **5.2 Major Findings**

The gravity model was used in the study to examine the relationship between domestic credit to the private sector, governance, and Nepal's export performance. According to data analysis, the following key conclusions have been made:

The estimated GDP coefficient of the importing country was discovered to be statistically significant at a one per cent level of significance. The estimated GDP of importing countries coefficient is -0.08, which means that one per cent increase in their GDP will roughly result in a 0.08 per cent decrease in Nepal's export flows.

The estimated GDP coefficient for Nepal, on the other hand, is 0.70, which means that, assuming all other factors remain constant, an increase in GDP will correspond to a roughly 0.70 per cent increase in exports.

The estimated coefficient of Nepal was -1.43, meaning that, when all other factors are held constant, a one per cent increase in Nepal's population will cause its exports to decline by 1.43 per cent.

The estimated coefficient of population of trading partner is 0.06 which is not statistically significant even at the 10 per cent significance level.

From a random effect model, it was discovered that the variable weighted distance was statistically significant at the one per cent level. The estimated coefficient of distance is 0.05, which implies that the country's imports decreased by 0.05 per cent as the distance between Nepal and the importing country increased by one per cent, *ceteris paribus*.

Table 5.1.2 shows that at the one per cent significance level, domestic bank credit to the private sector had a favorable and significant impact on export performance. The estimated coefficient for the amount of domestic credit provided to the private sector was 0.30, which, *ceteris paribus*, means that an increase in the amount of domestic credit provided to the private sector would increase Nepal's exports to these countries by roughly 0.30 per cent.

Regarding Nepal's export performance in relation to governance. At one per cent level, the governance coefficient is statistically significant and has a positive value. The estimated coefficient for governance is 0.52, which, *ceteris paribus*, means that an increase in governance in Nepal will result in an increase in export flows of approximately 0.52 per cent, holding other variables constant.

## **CHAPTER-VI**

### **CONCLUSION AND POLICY IMPLICATIONS**

The impact of domestic credit on the private sector on Nepal's export performance is discussed in the study. To conclude, it was investigated using a gravity model approach. Included in this chapter are a summary, conclusions, implications, and a suggestion for additional study.

#### **6.1 Summary of Findings**

Nepal has enormous potential for fostering trade in goods and services. By utilizing the available human capital and natural resources, there are numerous opportunities to reap rewards that could have a positive impact on both export performance and the standard of living of the populace. The ability of the banking sector's credit to the private sector (loanable fund) to boost export performance by bridging the gap between a company's productivity and export status has drawn more attention in recent years.

Considering this background, this study aims to ascertain the association of domestic credit to private sector with Nepal's export performance. The secondary data for the study were gathered over a 23-year period, from 1996 to 2019. A strong, positive, and significant relationship between domestic credit to the private sector and export performance is found in the study.

Similarly, this study found governance have a positive impact on the export performance of Nepal. Gravity variables like distance and the trading partner's GDP have a significant relationship with export performance, but even at the 10 per cent level of significance, the population of the trading partner country is not significant. Additionally, governance and export performance have a strong and favorable relationship.

#### **6.2 Conclusions**

As the study demonstrates, the performance of exports is positively and significantly impacted by domestic bank credit to the private sector. And at a one per cent level of significance, other gravity variables like distance, Nepal's GDP, and its trading

partner country's GDP are all significant. Governance has a similar strong positive effect on Nepal's export performance. From the findings of this study, the following conclusions are drawn.

1. According to the estimated GDP of importing countries coefficient of -0.08, a one per cent increase in their GDP will roughly result in a 0.08 per cent decrease in the flows of Nepal's exports. In contrast, Nepal's estimated GDP coefficient was 0.70, which means that an increase in GDP will increase in exports of roughly 0.70 per cent, assuming all other variables remain constant.
2. Nepal's estimated coefficient was -1.43, which means that if all other variables remain constant, a one per cent increase in the country's population will result in a 1.43 per cent decline in exports. Contrarily, the estimated population coefficient of the trading partner is 0.06, which is not statistically significant even at the 10 per cent significance level.
3. The variable weighted distance was found to be statistically significant at the one per cent significance level using a random effect model. The estimated coefficient of distance is 0.02, which means that, *ceteris paribus*, as the distance between Nepal and the country importing the goods increased by one per cent, the country's imports decreased by 0.02 per cent.
4. The estimated coefficient for the amount of domestic credit given to the private sector was 0.30, which means that an increase in the amount of domestic credit given to the private sector would increase Nepal's exports to these countries by roughly 0.30 per cent, which is significant at the one per cent significance level.
5. Concerning Nepal's export performance and governance. The governance coefficient is statistically significant and positive at the one per cent significance level. The estimated coefficient for governance is 0.52, which, *ceteris paribus*, means that, holding other variables constant, an improvement in governance in Nepal will lead to an increase in export flows of roughly 0.52 per cent.

### **6.3 Policy Implications**

Macroeconomic and trade policies should be developed by national policymakers to create a long-term equilibrium between exports and imports. To achieve economic growth through industrialization, the government must place a high priority on export diversification. Additionally, the government needs to foster industrial production and develop industries that can replace imported goods. Nepal can increase exports and decrease imports to improve the excessive trade imbalance if the government adopts policies to import capital goods and increase its production capacity.

As suggested by Kharel et al. (2018), policy should concentrate on the development of the banking sector by enhancing products and services and expanding its reach as it better promotes economic growth. This finding directly implies that financial development influences trade flows favourably, not only by enabling more businesses to export but also by reducing the artificial disconnect between productivity and exports caused by liquidity constraints. Firms' productivity and the nation's level of financial development interact.

Financial development enables businesses that are productive enough to enter international markets by lowering the severity of credit constraints in the economy. Financial development has a positive impact on both the quantity and the type of businesses: businesses that enter the export market as the financial system becomes more complex are the most profitable businesses Data & Berman (2008). To decrease its steadily growing trade deficit, Nepal must put new measures in place to increase its trade competitiveness.

Nepal's trade structure needs to be strengthened in terms of both the commodities and the final destinations. Greater policy priority should be given to more recent trade issues like trade in services, regional trade and investment agreements, and attempts to join regional and global value chains. The past decade's experience suggests that to achieve this, there must first be some degree of political stability and infrastructure-related trade bottlenecks must be removed.

The NTIS 2016 export priority products (furniture, ginger, Ayurvedic medicines, textile and yarn, leather products) whose performance is unsatisfactory need to be revised in light of Nepal's production capacity. Prioritizing goods for which Nepal can

gain a comparative advantage given its current productive structure and capabilities is the best way to diversify its export portfolio.

#### **6.4 Recommendation for Further Research**

This study is based on analyzing the impact of domestic credit on the private sector on the export performance of Nepal. There are few pieces of research been conducted on the role of financial development in economic growth so, it is very difficult to find out the research related to impact of domestic credit to the private sector on the export performance of Nepal.

However, there are lots of areas which need further study. This study has focused only on the impact of domestic credit to the private sector by banks on the export performance of Nepal. Further, this study can also be extended by incorporating the data of other financial institutions including provident funds and insurance companies in the measurement of financial structure.

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## APPENDIX

### Appendix A: Top 25 Importing Markets of All Products Exported by Nepal (based on 2010-2019 years)

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#### List of Countries

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India	Japan	Austria
United States of America	Bhutan	Korea, Republic of
Germany	Bangladesh	Sweden
United Kingdom	Netherlands	Russia Federation
Turkiye	Denmark	Spain
France	Switzerland	
Australia	United Arab Emirates	
Italy	Belgium	
Canada	Hong Kong, China	

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*Source: ITC calculations based on Trade and Export Promotion Centre statistics since January, 2017*

## Appendix B: Description and Sources of Variables

Variables	Sources	Descriptions	Expected sign
Export	World Development indicator	Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. It include the value of merchandise, freight, insurance, transport, travel, financial, information, business, personal, and government services. It exclude compensation of employees and investment income and transfer payments. Data are in current USD.	n/a
DCPS	World Development indicator	Domestic credit to private sector by banks refers to financial resources provided to the private sector by other depository corporations, securities, and trade credits and other accounts receivable, that establish a claim for repayment, then expressed in logarithm	(+)
GDP of the exporting country	CEPII (2019)	Gross Domestic Product in current USD thousands, then expressed in logarithm	(+)
GDP of the importing country	CEPII (2019)	Gross Domestic Product in current USD thousands, then expressed in logarithm	(+)
Distance	CEPII (2019)	Distance in kilometers between two countries using the great circle formula which uses latitudes and longitudes of each country's most populated cities or official capital	(-)
Population of exporting country	CEPII (2019)	Population of exporting country in US thousands Dollar, then expressed in logarithm	(+)
Population of importing country	CEPII (2019)	Population of importing country in US thousands Dollar, then expressed in logarithm	(+)
Governance	Worldwide governance indicator	Estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance)	(-)

**Appendix C: Exports, domestic credit to private sector and the governance  
(1996-2019)**

<b>Year</b>	<b>Exports</b>	<b>DCPS</b>	<b>Control of corruption</b>	<b>Rule of law</b>	<b>Average (governance)</b>
1996	1031715.00	1032655.77	-0.639208674	-0.006175261	-0.322691967
1997	1294985.10	1149228.48	-6.89E-01	-0.00943714	-0.34925024
1998	1108297.01	1370061.34	-0.738918006	-0.01269902	-0.375808513
1999	1150110.38	1432022.08	-0.702800989	-0.132788351	-0.41779467
2000	1279281.89	1663717.97	-0.666683972	-0.252877682	-0.459780827
2001	1355238.10	1747080.27	-0.512092695	-0.361623347	-0.436858021
2002	1073251.68	1362002.69	-0.357501417	-0.470369011	-0.413935214
2003	993875.70	1634064.00	-0.458296269	-0.556003988	-0.507150128
2004	1213488.96	1931520.07	-0.870962083	-0.742521286	-0.806741685
2005	1185691.37	2293950.27	-0.743389547	-0.815767586	-0.779578567
2006	1216071.41	2949532.05	-0.69369036	-0.623024344	-0.658357352
2007	1327426.85	3796855.60	-0.788317621	-0.593215644	-0.690766633
2008	1602782.69	6422997.12	-0.808657467	-0.673493683	-0.741075575
2009	1596506.18	7555508.68	-0.702576399	-0.860023081	-0.78129974
2010	1533460.34	8675457.27	-0.692666233	-0.95184958	-0.822257906
2011	1684084.66	9929495.03	-0.778915763	-0.886699677	-0.83280772
2012	1899085.04	10502781.89	-0.812980354	-0.735665023	-0.774322689
2013	2059901.68	11122174.34	-0.686784923	-0.718188584	-0.702486753
2014	2301357.06	12325118.87	-0.588211	-0.649677992	-0.618944496
2015	2488355.03	13808768.74	-0.57807529	-0.676901102	-0.627488196
2016	2005967.75	17082916.04	-0.799771667	-0.795664012	-0.797717839
2017	2263315.21	19821418.44	-0.752271116	-0.677187026	-0.714729071
2018	2587878.00	25220703.35	-0.670835197	-0.477541834	-0.574188516
2019	2659663.94	26954220.35	-0.673982084	-0.535384715	-0.604683399

Source: WGI, WDI