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# IPO of LIC – Impact on Organisation and Insurance Sector

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## ABSTRACT

In budget 2020-21, our Finance Minister NirmalaSitharaman announced to sell part of government holdings in Life Insurance Corporation of India through the initial public offerings. At present the government owns LIC hundred percent. Now through the disinvestment policy of central government 10% of its stake holdings is to be announced in the form of LIC IPO. In this paper, we made an attempt to study the overall impact of LIC IPO. In the paper, opinion of different experts has been discussed. Based on secondary data it was found that the decision of the union government to withdraw part of its stake from the investment by issuing LIC IPOs is better if it does not affect the main motto of the providing service to the people of the nation. From the point of view of development of the nation LIC IPOs are welcome feature as India is to be turned from 'developing nation' into 'developed nation'. At the same time the hard earned money of the policy holders must be safe guarded and the employees must be secured.

**Keywords:** Employees, LIC-IPO, Stake holders

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## INTRODUCTION

Life Insurance Corporation of India (LIC) is an Indian government owned Insurance Corporation. It is under the ownership of Ministry of Finance , Government of India . It was established on 1 September 1956, when government nationalized the insurance industry in India [1]. Past sixty-five years since its existence Life Insurance Corporation (LIC) of India has stood behind every Indian family as a strong insurer.

In August 2000, the Indian Government embarked on a program to liberalise the insurance sector and opened it up for the private sector. LIC [2] emerged as a beneficiary from this process with robust performance. In budget 2020-21, our Finance Minister announced that government of India is diluting its partial stake in LIC by launching the IPO and inviting the public to participate in its equity. With the launch

of LIC IPO and listing, LIC will come under a direct scanner of SEBI and will have to comply with requirements for listed firms.

This led to a lot of discussions and several articles in favour and against LIC-IPO. A sharp criticism also spread across the country as LIC carries an enormous amount of goodwill among people of India.As per this issue is concerned, we made an attempt to study the overall impact of LIC IPO. Whether this decision is beneficial to the people of India? What is the reaction of the most of the employees? If it is beneficial, in what way they receive it? In the paper, we have discussed various questions arising in minds of the policy holders, employees of LICetc. and tried to put a common opinion of using secondary data, strategic tools and experts' opinion.

## CONCEPTUAL FRAMEWORK

As LIC entered into its 57th year it has emerged as the world's largest insurance company in terms of number of policies covered. The LIC's total coverage of policies including individual, group and social schemes has crossed the 11 crore. It was established with the objective of spreading life insurance widely reaching to every insurable person in the country and providing them adequate financial cover against death at a reasonable cost. It also involved all people working in the corporation to the best of their capability in furthering the interest of the insured public by providing efficient service with courtesy. The functions of LIC include collecting the savings of the people through life policies and invest these funds in profitable investments so as to get good return. Hence the policy holders get benefits in the form of lower rates of premium and increased bonus. So in short, LIC is answerable to the policy holders. Apart from its society-focused objectives, it is among various market competitors in the field of insurance. Even though LIC does not enjoy monopoly in the economy, but it alone grabbed maximum share in the market share as it is public sector undertaking. In India people believe in government sectors rather than private sectors. We, most of Indians see the safety of our premium paid, so, we invest in government undertakings rather than private insurances. We can see it through table 1 shown below.

Table 1: New Business Statement of Life Insurers for the Period ended ended 30th April, 2020[3]

| S No. | Insurer | Premium | No. of Policies / Schemes | No. of lives covered under Group Schemes | Sum Assured |
|---|---|---|---|---|---|
| | | *Market Share* | *Market Share* | *Market Share* | *Market Share* |
| 1 | Aditya Birla Sun Life | *3.89* | *2.02* | *1.32* | *6.73* |
| 2 | Aegon Life | *0.06* | *0.18* | *0.21* | *0.84* |
| 6 | Canara HSBC OBC Life | *0.40* | *1.13* | *0.98* | *1.24* |
| 7 | Edelweiss Tokio Life | *0.24* | *0.86* | *0.06* | *0.51* |
| 8 | Exide Life | *0.38* | *1.52* | *0.16* | *1.12* |
| 9 | Future Generali Life | *0.16* | *0.38* | *0.05* | *0.58* |
| 10 | HDFC Standard Life | *9.94* | *8.82* | *21.59* | *13.13* |
| 11 | ICICI Prudential Life | *3.81* | *7.43* | *19.52* | *15.47* |
| 12 | IDBI Federal Life | *0.10* | *0.12* | *0.00* | *0.03* |
| 13 | India First Life | *0.49* | *0.90* | *3.53* | *3.44* |
| 14 | Kotak Mahindra Life | *1.80* | *3.06* | *12.14* | *3.01* |
| 15 | Max Life | *2.55* | *5.97* | *4.34* | *14.52* |
| 16 | PNB Met Life | *0.65* | *2.83* | *0.67* | *4.60* |
| 17 | Pramerica Life | *0.16* | *0.15* | *11.64* | *1.08* |
| 18 | Reliance Nippon Life | *0.51* | *2.43* | *0.01* | *0.33* |
| 19 | Sahara Life | *0.00* | *0.00* | *0.00* | *0.00* |
| 21 | Shriram Life | *0.20* | *0.95* | *0.45* | *0.39* |
| 22 | Star Union Dai-ichi Life | *0.10* | *0.11* | *0.43* | *0.28* |
| 23 | Tata AIA Life | *2.29* | *7.14* | *0.80* | *13.67* |
| | Private Total | *46.76* | *55.64* | *96.61* | *96.00* |
| 24 | LIC of India | *53.24* | *44.36* | *3.39* | *4.00* |
| | Grand Total | *100.00* | *100.00* | *100.00* | *100.00* |

An initial public offering (IPO) refers to the process of offering shares of a private corporation to the public in a new stock issuance [4].Government announced part of its investment in Life insurance Corporation in the form of LIC IPOsin the budget 2020-21.Four reasons were stated in the Budget. The listing will discipline a company, give access for its capital needs, shall unlock its value benefiting retail investors and transparency are the four issues raised in justification of the stake sale announcement [5]. Itopened doors for corporate management. LICwas formed as per Life insurance Act 1956.At present LIC is under the governance of Insurance Regulatory Authority (IRDA) Act 2000. To issue LIC IPOs necessary changes or amendments are to be made as it is under the direct control of regulatory authority.

People of India are confused with this decision and they cannot decide to stand either in favour or against this decision. Several common people, policy holders, employees, academicians, finance experts etc. have expressed their views and analyzed in different ways. It's true that we cannot rely on anyone's views as we don't know really how it will work.

## OBJECTIVES

a) To know the relevance of LIC IPOs in India for investment as well economic growth purpose.
b) To study the pros & cons of disinvestment policy of LIC funds in form of IPOs.
c) To understand how this decision will affect its employees.

## RESEARCH METHODOLOGY

Since the objective of our research is recent and current topic is to be discussed and implemented, so this research paper has been developed partly by exploratory research method and partly by theoretical aspects. We used primary data as it is and secondary data to derive the conclusion.

**Relevance of LIC IPOs:**

a) Presently the government owns 100 per cent of LIC. Finance Minister NirmalaSitharam announced that the government will sell a part of its holding in Life Insurance Corporation of India (LIC) through an initial public offering (IPO).
b) LIC has net assets of more than Rs 31 Lakh crores and is way bigger than RIL,TCS etc. in terms of market capitalisation may end up taking away liquidity from markets. So LIC IPO will be a mega show [6].
c) This also means the government will continue to have flamboyant investments and spending with equal focus on infra, reforms and fund through government premium holding disinvestments.
d) It is expected that this IPO should effectively attract FPIs and international investors and if that happens then it would become a successful strategy of the government to add a fresh infusion of funds in the economy by getting foreign investments as against taking away liquidity from the Indian markets[7].

**Pro and Cons of LIC IPOs**

The pros can be understood by the views expressed bydifferent experts, they are:

a) The listing of LIC will be a positive move for policyholders. However they will receive indirect benefit. As a 100% government-owned entity, LIC's financial health has been largely outside the scrutiny of the financial markets, so now onwards it will be under scrutiny [8].
b) Investment returns for traditional policies are dependent on the insurer's performance. Such plans have formed a large portion of LIC's book. The endowment policyholders' visibility is limited to annually declared bonuses and is not like ULIP investors who have a clear visibility on the daily performance of underlying funds.
c) Listing will allow analysts to monitor LIC's governance. LIC will come under SEBI's direct watch and will have to comply with the requirements meant for other listed firms. Such compliance is likely to strengthen its overall corporate governance, financial and investment discipline. Over time, this will increase its efficiency and it may deliver higher returns to policyholders.
d) LIC will also become more competitive. This will put pressure on its peers to innovate, benefitting policyholders in terms of pricing, product features and services [9].
e) For stakeholders any company going public is good news since it ensures higher transparency, better governance, more disclosures and scrutiny from the investors.
f) However, LIC has in the past invested in the equity markets to stem its fall. After being listed, LIC will be answerable to public shareholders and, hence, will be a prudent investment decision, which is good for policyholders.
g) Also less govt interference will be a positive for LIC's financial health [10].
h) Being under scrutiny, the quality of asset management by LIC will be enhanced as the government's influence on its asset management will reduce.
i) Further, LIC services a few state-sponsored schemes which have underwriting challenges on the commercial front. With the IPO, these services might fall into place, improving the overall stability of LIC.
j) The listing of LIC is a positive move which will result in transparency of the corporation in public view, sparking renewed interest in the insurance industry in international markets. Government-owned General

Insurance Co. of India is already listed, so the process and transparency will not be any different.

k) As long as sovereign guarantee over the maturity proceeds and sum assured continue, policyholders won't perceive any risk. The return on policies may have to be moderated to boost profitability and technical reserves in the face of shareholder and analyst scrutiny [11].

l) It is not clear how much of the company will be diluted. So, the opportunity for the general public to pick up equity in LIC in the IPO may be limited.

The cons can be understood by the opposing views expressed by different experts, they are:

a) **LIC Stake sale; For who's benefit is it anyway?** It has also been obvious that so far no coherent justification has been made substantiating the proposed LIC stake sale.Four reasons were stated in the Budget. But the most obvious reason may be the disinvestment target of Rs.2.1 lakh crore in the Budget [12].

b) Capital needs; That of LIC or the Market? The share markets do indeed cater to the capital requirements of the listed companies. The proponents of the capitalist system want the capital markets to surge ahead yet it is the cyclical crisis of the capitalist model that reaffirms the relevance of the state as the 2008 crisis showed the entire world. Here main question is whether LIC needs capital? With more than 5.6 lakh crore of total income, more than 30 lakh crores of assets, a steady stream of premium and investment income, LIC has not been searching for capital for its business needs, it is resourceful enough to fund 25 per cent of the borrowing needs of the central government. Hence the doubt arises if the stake sale is to meet the capital needs of LIC or that of the markets?

c) Will retail investors benefit? Yes they will there is no doubt. But in a country less than two per cent of the population access the share market, unlocking the value of a mammoth financial organisation for the purpose of retail investors obfuscates the stated purpose. But in the process, the stake fully enjoyed at present by the entire 135 crore population of the country will be shrunk to accommodate a few thousand out of the estimated four crore retail investors in the country. The Finance Minister seeks to draw the support of the investing public in the country with the argument.

d) Will listing Discipline a company? It has been observed that the government has remained a mute spectator even as the savings of millions of retail investors in the markets were lost. We have witnessed sharing the legacy of the more than 8 Lakh Crore Non Performing Assets that have wrecked the Indian Banking System. Did Banks that lent the loans not listed in the market? Did the companies and large industrial groups who failed to repay the loans not listed in the market? Could the FM explain why the markets failed to discipline the companies in question? The latest crumbling of the Yes Bank just reveals the limitations of the regulatory framework in practice in a crisis.

e) Transparency and the market- We can witness few analysts in the market who raise the issue of transparency to question the government, specifically the finance ministry in not letting the LIC full functional autonomy with particular reference to some of the investment decisions. Strangely, the FM herself has come up with the issue of transparency with regard to LIC stake sale [13].

**Impact on employees**

a) IPO is nothing to do with employees. It effect management because new director become part of management [14].

b) This is not take over. Employees need to worry when there is takeover. Currently Government of India owns 100% shares of LIC. Even with IPO, the sale would not be more than 10%.which means that Government of India would continue to own 90% of the shares. Voting rights for any other party to make an influence on Employee related policy should be more than 51%.So, Employees don't need to worry about LIC IPO.

c) If there is business impact, then it is not good for the organization, and which ultimately impacts employees only.
d) Because currently Government of India holds 100% stake in LIC but when the IPO will be out then LIC open door for private player. Initially it's about only 5–10% but employee think it may extend in future and ownership maybe tumble.
e) 100% sovereignty of policy maybe lost so business may step down.
f) Life Insurance Corporation of India(LIC) as Trusted by Us " ZindagikesaathbhiZindagiKeBaadBhi" where individual invest their hard earned money as per future plan like Higher Education, Property, Foreign Trips etc. LIC is termed as Public Sector & fully owns by Government. It employs more than millions Employee. But now government proposes to sell a part of its holding through IPO. So Employees are unhappy because this may take the Public Sector title from LIC. So People of India will lose faith in LIC. Disinvestment in LIC will be a stepping stone for privatisation in future.
g) LIC has always been at the service of the people and the nation & attempt to disinvest LIC will change the corporation motive from service to profit making. Thus discourage LIC from providing insurance cover to the underprivileged section of Society.
h) Various protest took part across India for stopping LIC IPO Process."SaveLIC". The insurer is profitable, has assets of ₹31-lakh crore; why hand over such wealth to corporates, ask employees
i) Some say it is fear of unknown, nothing more. Employees will be happy if they get preferential allotment.

## FINDINGS

a) In a nutshell, with less federal interference, LIC will be more accountable with strong governance protocols, which will be a positive for its financial health.
b) However, the sovereign guarantee element currently enjoyed by each LIC policyholder might cease to exit after the IPO. Some policyholders may then find it hard to trust LIC.
c) If sovereign guarantee continues, policyholders won't perceive risk
d) So far, LIC has operated almost like a mutual insurance company by passing on most of the earnings to the policyholders and keeping very little as profits, despite having a massive operation.
e) LIC employees are against the disinvestment of policy i.e. issue of LIC IPOs
f) The governance of LIC will be more transparent and efficient.
g) It attracts more foreign investment.

## CONCLUSION

The decision of the union government to withdraw part of its stake from the investmentby issuing LIC IPOs is better if it does not affect the main motto of the undertaking. LIC is service sector, its main motto is to serve, if it is affected with the entry of the corporate sectors, the basic value of the service sector is forgotten. Proper balance of service motto and development of the nation as well is to be done.From the point of view of development of the nation LIC IPOs are welcome feature as India is to be turned from 'developing nation' into 'developed nation'. At the same time the hard earned money of the policy holders must be safe guarded and the employees must be secured.

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# Dependency of Stock Price on Market Equilibrium

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## ABSTRACT

The stocks are the assets of market. The economic theory of demand is applicable for resource allocation and asset pricing. Stock price of a company depends on so many intrinsic and extrinsic factors. Extrinsic factors include economy related indicators. Demand of a stock in market depends on both internal and external elements of the company. Market equilibrium depends on demand and supply gap. Market equilibrium can be Pareto optimum under a set of sufficient conditions. Incompleteness of the market happens due to lack of information dissemination which results into market imperfection. Stock Market Efficiency influences the gap between demand and supply of stocks which coupled with other factors determines equilibrium price and transaction quantity. Consumers or traders make their investment decision based on the forecasting of equilibrium price of various stocks to compose their portfolios with an objective of optimum gain over a period. In ideal situation, there is no gap between demand and supply when market equilibrium is reached. This research paper explores the nature of dependency of stock price on market equilibrium which is denoted by the extent of difference between demand and supply. The present research has found that change in stock price has a positive correlation with the gap between demand and supply. The changed price of stock is determined by the new equilibrium of market which is attained at an updated demand and supply level.

**Keywords:** Asset Price, Law of Demand, Market Efficiency, Market Equilibrium, Stock Market

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# INTRODUCTION

Stock prices change due to market forces. Market forces influence supply and demand of the stock. Market dynamics, economic conditions and changes to economic policy tend to impact the supply and demand of stocks. Capital market plays an important role in the allocation of economic resources into productive activities of the economy, which are possible only if the securities traded in the markets are priced appropriately. An efficient capital market is an important component of a capitalist economy. In such a situation, prices are accurate signals for capital allocation for the ideal market scenario. Price of a stock depends on several variables. Both in terms of an understanding of the working of stock markets and in their performance and contribution of the development of a country's economy, stock market efficiency plays an important role. If the stock market is efficient, the prices will represent the intrinsic values of the stocks and in turn, the scarce savings will be optimally allocated to productive investment which is beneficial to both individual investors and the country economy.

In the context of asset price behavior and the pricing models, during the past two decades much time and effort have been devoted in the field of finance to investigate the behaviour of certain speculative prices such as those of securities and commodity futures. Research efforts have been directed, in particular, to study price behavior of common stocks or equity shares as they are popularly called in India with a view to understanding the underlying stochastic processes which determine the prices of these shares. Historically, there have been essentially two schools of thought concerning security valuation and the behaviour of share prices, viz., technical and fundamental analysis schools.

The present research focuses more on technical analysis. It explores the relationship of stock price with its demand in the market.

## LITERATURE REVIEW AND RESEARCH GAP

The existing literatures, mainly on the fundamental factors on which asset or stock value should depend, have been reviewed here. Fama (1970) indicated that stock prices moved according to fundamentals. But empirical researches since then have raised doubts about this observation. Shiller (1981) observed stock prices to be more volatile than what would be reflected by economic movement. Blanchard and Watson (1982) showed that when the bubble is present, the proportional change in stock prices is an increasing function of time and, therefore, predictable; Fama and French (1988) in their research on permanent and temporary components of stock prices found returns to possess large predictable components casting doubts about the efficiency of the stock market. Dwyer and Hafer (1990) tested the movement of stock prices in a cross-section of countries and observed no justification for either bubbles or the fundamentals in determining the stock prices. The studies of Froot and Obstfeld (1991) and Mishkin (1999), on intrinsic bubbles raised doubts about stock prices being determined by the fundamentals. Campbell (2000), in a review of the empirical literature, has discussed the existence of dynamic equilibrium in the USA stock market; however, Polemarchakis (1990), in a review of theory, had discussed the problems of existence of an efficient stock market equilibrium with incomplete markets and suggested information control as a possible solution to the problem. There have been a number of studies regarding efficiency for Indian stock markets. Research by Barua (1981), Sharma (1983), Gupta (1985) and others confirm weak form of market efficiency. For example, Sharma (1983) uses data of twenty three stocks listed in Bombay Stock Exchange (BSE) (whose index was subsequently labeled Sensex) between the period 1973 and 1978, and his inference confirms at least weak form of random walk applicable for the BSE during the period. There were also tests by Dixit (1986) and others, which primarily focuses on stock prices' relationship with dividends to test the role of fundamentals. Efficiency hypothesis was supported by these tests. But, Barua and Raghunathan (1990), Sundaram (1991), Obaidullah (1991), raise doubt about this efficiency hypothesis. For example, Barua and Raghunathan (1990) used 23 leading company stock prices enlisted in BSE. They estimated price-earning (P/E) ratio based on fundamentals and compared them with actual P/E data. The result indicated shares to be overvalued. Obaidullah (1991) used BSE data from 1979 to 1991 and found that stock price adjustment to release relevant information (fundamentals) is not in the right direction, implying the presence of undervalued and

overvalued stocks in the market. Barman and Madhusoodan (1993) found that stock return do not exhibit efficiency in the shorter or medium term; though appear to be efficient over a longer run. Jegadeesh (1993, 1999, 2001) defined Momentum theory which states that there is substantial evidence that indicates that stocks that perform the best (worst) over a three to 12 month period tend to continue to perform well (poorly) over the subsequent three to 12 months. Sarkar (2014) studied market efficiency in Indian stock market in 2000 and beyond. Sarkar (2014) carried out empirical works on daily share price behavior of BSE's companies in India under the framework of efficient market theory. His study deals with stock market efficiency and discusses the panel of companies.

The earlier research work has not explored the dependency of stock price on quantity demanded. This present research has tried to address that gap.

## OBJECTIVE OF THE STUDY AND METHODOLOGY

The objective of this study is to investigate the relation of change of price of stock with change of demand of the stock. The primary objective of present research is to assess the nature of dependency of stock price on the demand of the stock in market.

The data are collected from official website of Bombay Stock Exchange. Daily price and volume data are collected. The data also includes the daily closing, high, low and open values of the BSE sensex for the period 2016-2021. A company of BSE30 index is selected for this research to collect daily price and volume data for the period 2016-2021 from official website of BSE.

The statistical software SPSS and MS Excel are used for the data analysis along with other related software. Various statistical tests including the Artificial Neural Network and Linear Regression are used to test the collected data.

## RESULTS AND DISCUSSION

The following graph shows the pattern of price movement with respect to demand movement.

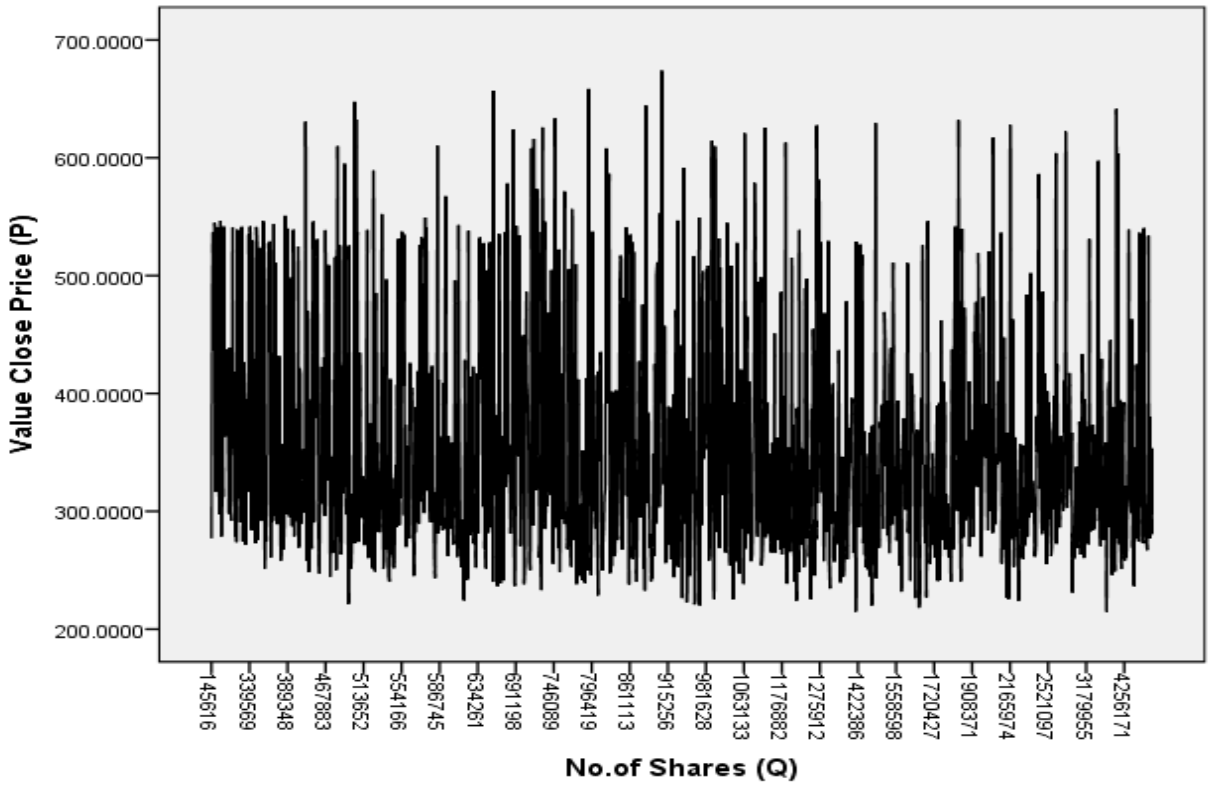



**Fig. 1 Line Diagram: Stock Price vs. Demand**

The following graph shows the pattern of price change movement with respect to demand change movement.

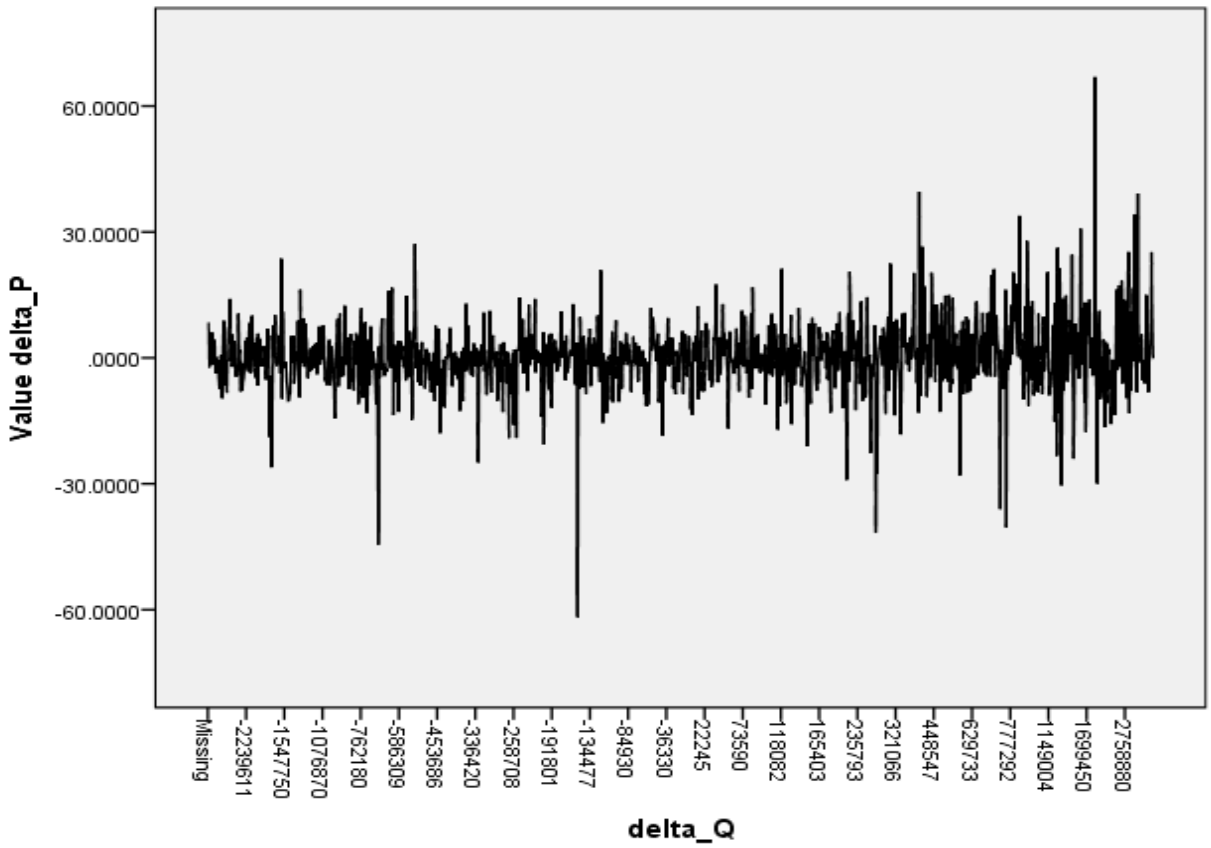



**Fig. 2 Line Diagram: Price Change vs. Demand Change**

The following graph shows the pattern of elasticity movement with respect to price movement.

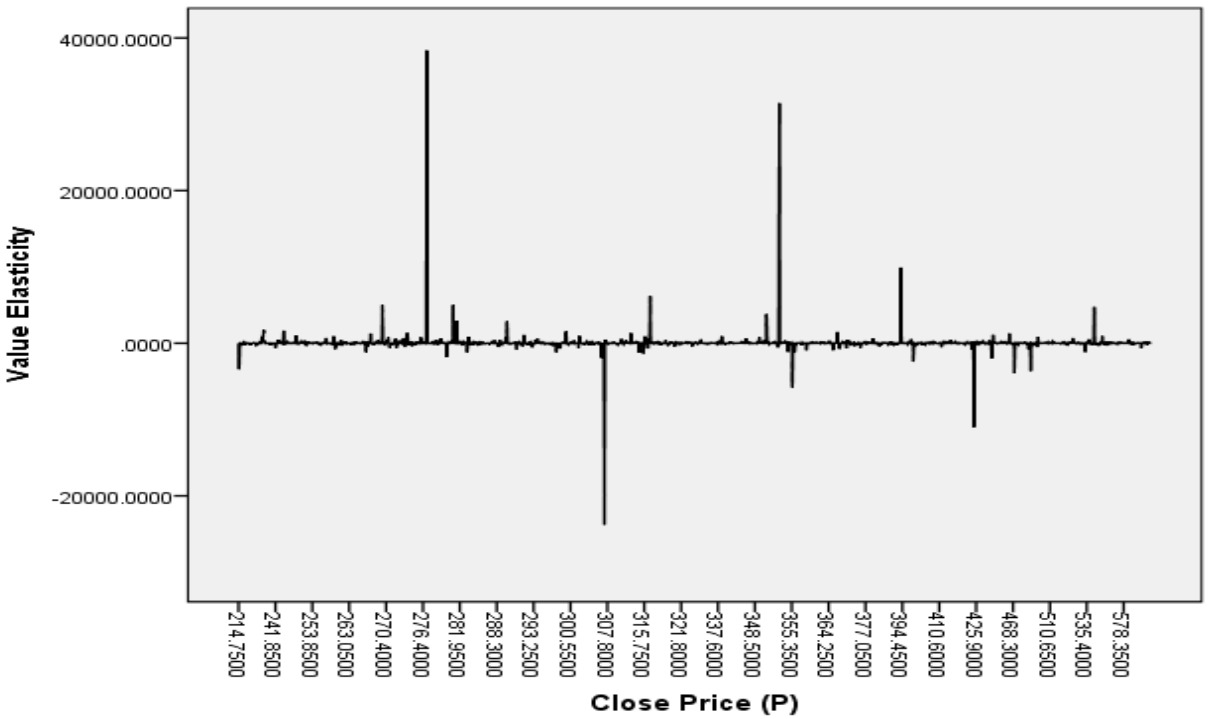
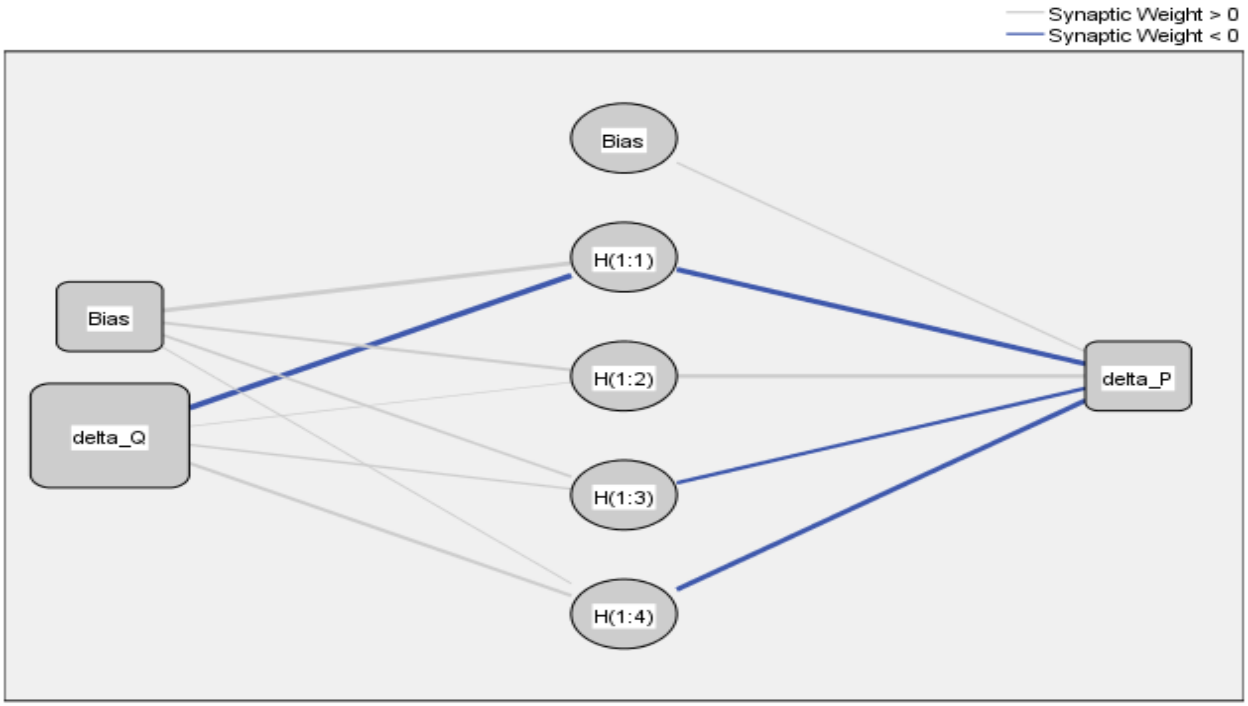



Fig. 3 Line Diagram: Price vs. Elasticity

Table 1. Descriptive Statistics

| | Mean | Std. Deviation | Count(N) |
|---|---|---|---|
| Close Price (P) | 355.261511 | 95.4598551 | 1238 |
| No.of Shares (Q) | 1381803.39 | 1583418.398 | 1238 |
| delta_P | 0.277001 | 8.4311 | 1237 |
| delta_Q | 64.57 | 2022636.870 | 1237 |
| Elasticity | 57.3355 | 1695.35 | 1235 |

The following diagram shows the Multilayer Perception (ANN) with hidden layers and bias.




Hidden layer activation function: Hyperbolic tangent

Output layer activation function: Identity

**Fig. 4 Multilayer Perception (ANN)**

**Table 2. Case Processing Summary (ANN)**

| | | N | Percent |
|---|---|---|---|
| Sample | Training | 851 | 68.8% |
| | Testing | 386 | 31.2% |
| Valid | | 1237 | 100.0% |
| Excluded | | 1 | |
| Total | | 1238 | |

Table 3. Model Summary

| | | |
|---|---|---|
| Training | Sum of Squares Error | 419.006 |
| | Relative Error | .986 |
| | Stopping Rule Used | 1 consecutive step(s) with no decrease in error[a] |
| | Training Time | 0:00:00.13 |
| Testing | Sum of Squares Error | 246.003 |
| | Relative Error | .988 |

Dependent Variable: delta_P

a. Error computations are based on the testing sample.

Table 4. Regression Coefficients

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .277 | .239 | | 1.158 | .247 |
| | delta_Q | 3.024E-007 | .000 | .073 | 2.556 | .011 |

The following diagram shows the Histogram for frequency of standardized residual.

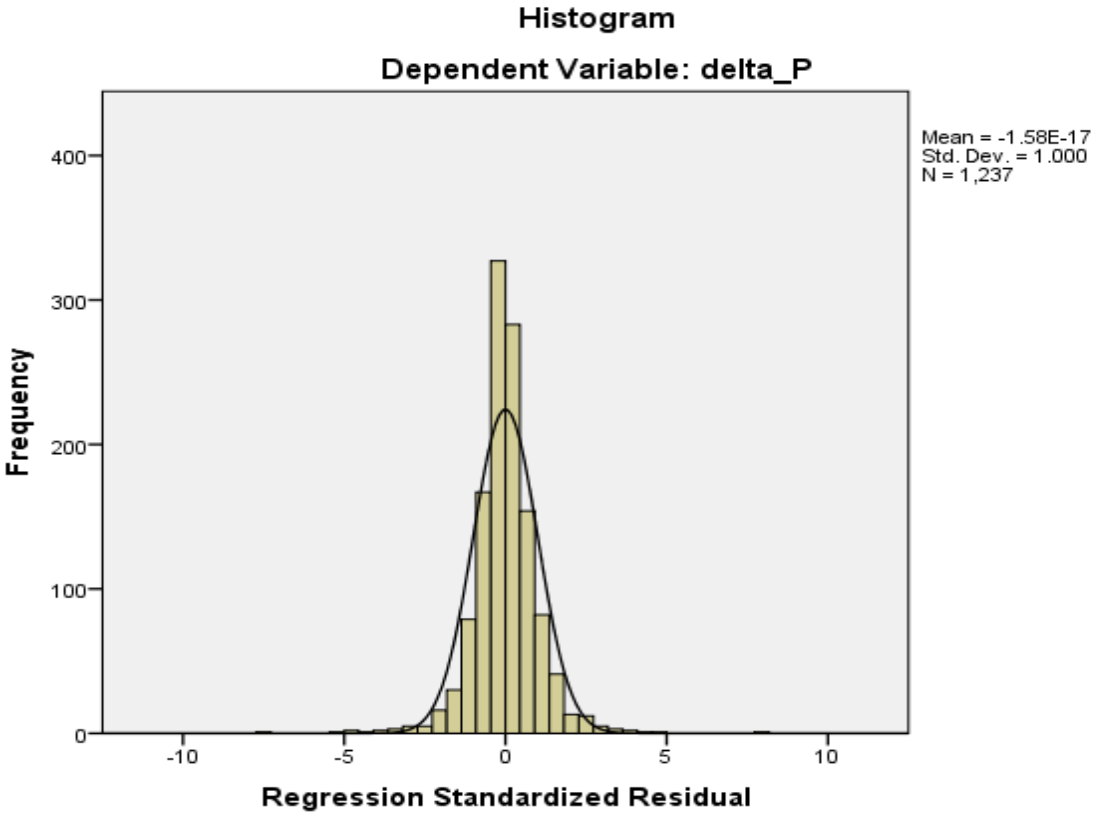



**Fig. 5 Histogram**

The following diagram depicts the P-P plot for standardized residual.

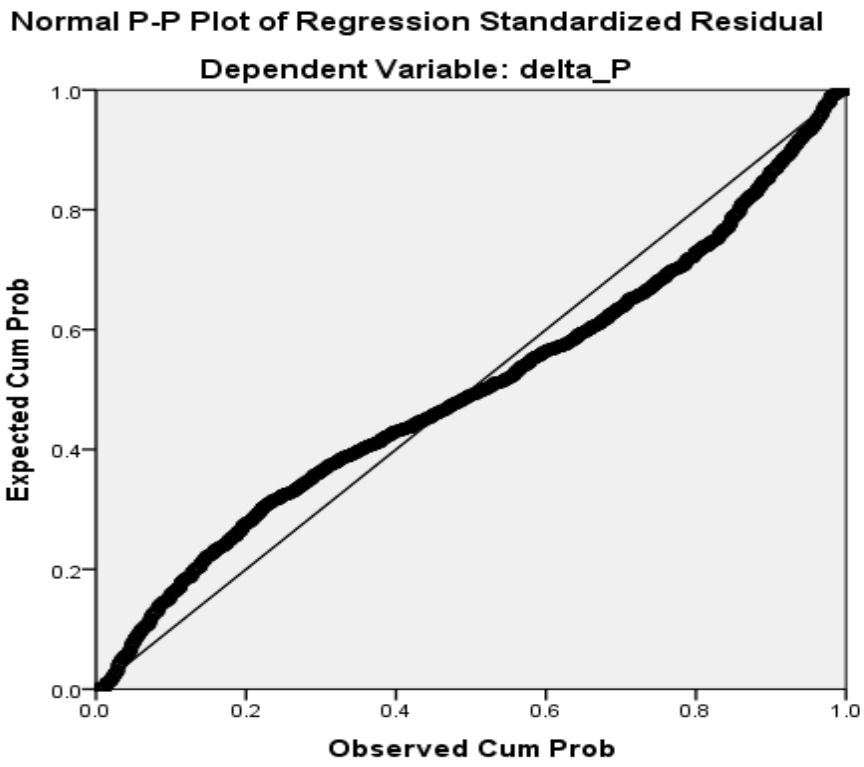



Fig. 6 P-P Plot

**Regression Models**

The regression models are the final outcome regression analysis. The following regression models are envisaged in this research.

## Regression Model 1

## delta_P = 0.277 + 0.0000003024 delta_Q

**WHERE delta_P = PRICE CHANGE, delta_Q = DEMAND CHANGE**

## Regression Model 2

## P = 361.642 - 0.000004617 Q

**WHERE P = PRICE, Q = DEMAND**

## Regression Model 3

## E = 195.166 – 0.388 P

**WHERE E = ELASTICITY, P = PRICE**

## CONCLUSION

The relationships between various key indicators of stock are very important to understand the market dynamics. The present research has envisaged those relationships for banking stock.

The test results of this study prove the following hypotheses.

1. Change of price of a stock has positive relation with change of quantity or demand in the market.

2. Price of a stock has negative relation with Quantity or Demand in the market. This phenomenon is supported by Law of Demand for normal goods.

3. Price elasticity of demand has negative relation with stock Price in the market.

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# Political Independence without Economic Independence: a Survey of Third World Economies

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## ABSTRACT

Without doubt, economy is among the determinant factors of states' existence, citizens' welfare and general development; without vibrant supporting economy, states and individuals' visions and missions would continue to be distant objectives if not unattainable. However, historical approach and political analysis- the two inextricable phenomena could be relied upon as the guiding principle in order to define states and understand states economy in the third world and how it was affected as a result of several underlying issues that continue to shape and direct the course of the economy of the states in the third world. It would be in line with the aforementioned scene that this research would focus and delve as to show and justify with facts as to why third world states continue to grapple with economic uncertainty, stagnation, backwardness and crisis in general to the extent they remain as conduits supporting economically developed states acting as metropolis despite been politically independent for decades.

**Keywords:** States, Colonialism, Independence, Imperialism and Capitalism

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## INTRODUCTION

Throughout the existence of mankind on this planet from the early ages to medieval and up to the contemporary world often being referred to as Renaissance Age in the history of civilizations, states exist although with different dimensions as regards to their purpose, composition and philosophy with respect to the type of society they manage as government. In the light of this statement, states exist and serve its duties and roles base on the existing economic capacity of the state. Therefore, the sates and economy are interwoven and in some instances the latter compliments the former.

However, the economy of itself of many third world states had been on the radar of external forces which were skillfully planted long time ago, and had grown

to maturity to the point where the fruits are now enjoyed not by the very soil where it was planted, but by the far and distant influence thereby creating a cog on the wheel of the states concerned and their economy as well.

Considering the above scenario, it is vividly clear that third worlds states and their economy were in theory sovereign and independent, but technically skewed in favour of the metropolitan states (Western states) thus leaving the peripheral states (third world states) in squalor through invisible force and self centred policies in favour of the metropolis states.

**DEFINITION OF CONCEPTS**: Political Independence, Economic Independence and Third World Economies/States,

Political Independence: political independence was subjected to various interpretations; contemporarily it was defined as '... independence in relation to a portion of the globe is the right to exercise therein, to the exclusion of any other state, the functions of a state'.[1] By this proposition, it simply denotes the existence of an organized body which operates through its agencies and capable of determining its internal and external affairs without being directed by any other authority from another organization called state.

Other elements attached to states as features of political independence include: population no matter how small or large, territory i.e boundary/demarcation, sovereign i.e capable of determining its own affairs, and a government that manages all other sectors as state organs and machineries.

Economic Independence: by this it means building an economy that progresses without depending on others. If this is achieved by a state, it guarantees independent development of the country and nation so also economic stability.[2] This does not mean building a closed economy or simply ruling out exchange of ideas with other countries, but rather it implies that obtaining what is lacking or is short of through exchanges and cooperation with other counties.

By this way, the potentials of the state is harnessed and developed through peoples talent capable of moving the country forward economically[3] and stand out and economically independent *per se*.

Third World Economies/States: third world states or countries so to say was a term that was coined in the period from 1945-1990's to technically refer to states/countries that are neither with the socialists nor the capitalists countries. But, the economic cum political definition was widened as to describe countries with substandard, underdeveloped, or underperforming conditions in certain fields, which are in great need of development. They are identified by and fall under the categories with poor economy and non human development in terms of political and civil liberties. Examples of these countries include: Burma, Libya, Sudan, Iraq, Syria, and Zimbabwe[4] among others just to mention but a few. It is important to note that most of these countries are located in Africa, Asia, Latin America and Parts of Eastern Europe.

External Influence/Colonialism: in this research work it donates a state or a country that had experience colonialism and hence, its socio-economic policies continue to be guided by such policies in the post-colonial age which continue to create unequal terms as the main guiding principle of economic policy of the former colony.

**STATES: THIRD WORLD STATES BEFORE COLONIALISM**

In Africa, Latin America and Asia as well, states exist for centuries before the incursion of foreign powers that later came and dominate the people ways of life through colonial conquests. For instance: in Africa, there were empires of Ghana, Mali and Songhay as far

[1] M. Wood., "Independence", *Princeton Encyclopedia of Self Determination*, Princeton, Princeton Univ. 2021
[2] A. M Muhammad., Economic Independence of DPRK, the cable news, august 10th , 2021
[3] . Ibid.
[4] See S . Williams., What is the Definition of a Third World Country? Borgen Project, march 18, 2018 See also Countries of the third World, available on https://www.nationsonline.org/oneworld/third_world.htm Accessed on 22nd December, 2021

back as 8th to 17th centuries A.D,[5] Borno Empire that lasted for almost 1000 years,[6] Buganda state,[7] Bunyoro kingdom,[8] and the Sokoto caliphate which was conquered in `1903 by the British imperialists.[9]

The economy of these states as it were, was characterized as self generating and self sustaining type, in the sense that it capitalizes on the exploitation and development of local resources using indigenous technology and methods to satisfy needs and for exchange purposes i.e trade. For instance, let us discuss the Sokoto caliphate (1804-1903) which is now in Nigeria as a classical case study during its existence as regards to the state and economy.

For in the Sokoto caliphate, the economy was set as all encompassing and fully integrated with each part within the confederate state producing an item in respect of the availability of the resources at reach. For in the main areas within the caliphate capital, each has attain a particular skill of trade that serve the people. Areas as *Majema*, *Takalmawa*, *Marina*, *Masaka*, *Makera* were areas known to have been producing items as: leather and skin tanners, shoemakers, dyers, woodcarvers/carpenters and blacksmiths respectively. Apart from these items, agricultural produce was spread to distant stations across the capital. For areas around Gwandu, Goronyo, Gandi, Rabah and Kware were classified as *Ribats*[10] not only serving as administrative and defense districts, but also agricultural estates and plantations to compliment the food needs of the growing caliphate's population.

Also within the political structure of the confederate states of the caliphate (Emirates), there exists elaborate system of trade chiefs representing all occupational groups and trades. Titles as *Sarkin Rafi*, *Sarkin Noma*, *Sarkin Kasuwa* and *Tafarki* as titles relating to chief of gardens, chief of farmers, chief of markets and chief of highways respectively.[11]

Although the community is well structured and empowered socially and economically, there are also other sources of revenue for the caliphate. These are: tithe, poll tax, land tax, booty and surplus i.e the property whose owner is missing, and the property which is ownerless.[12]

In India, before the advent of colonial rule, it has a self sufficient flourishing economy. With the economy purely an agrarian including irrigation farming, as rice and wheat were commonly grown alongside few supporting handicraft industries in the fields of cotton and silk textiles, metals and other precious stone works- the quality of crafts had made India's products not only popular, but also sought after in huge demands in Asia and the world at large.[13] It was during this eriod that Indians economy was credited as the "Golden Age" or "Gupta Empire Period" which

[5] .J. Ryle et al.,(eds.), *The Sudan Handbook*, London, Boydell & Brewer Ltd, 2011 and Google search "images of Power and Identity" Available at https://africa.si.edu/exhibits/ipi?westsud.htm Accessed 19th December,2021.

[6] . H. Vincent., *A History of Borno*, London, HURST Publishers Ltd, 2017 See also M, Kyari., "Borno UnderRabih Fadl Allah, 1893-1900: The Emergence of a Predatory State". In *Paideuma*, Vol. 43, Pp. 281-300

[7] B. Barkindo et. al., *Africa & Wider World 2: East, Central and Southern Africa Since 1800*, Ibadan, Longman Nigeria Plc, 1992, Pp. 43-72

[8] A. R. Dunbar., *A History of Bunyoro-Kitara*, Oxford, OUP, 1965, Pp. 10-81. See also The Open University, Knowledge Media Institute, CORE, United Kingdom for more details *on The History of Bunyoro*.

[9] See O. Ikime, *The Fall of Nigeria: The British Conquest*, London, Heinemann Educational Books, 1977. See also in A. Y. Jiwon., *The Sulatanate of Sokoto (Sokoto Caliphate)* Available at BLACKPAST.ORG Accessed 22nd November, 2021 .

[10] . M. B., Sallau, "Ribats and the Development of Planatations in the Sokoto Caliphate: A Case Study of Fanisau",in *African Economic History* 34(34):23 DOI:10.2307?25427025

[11] . See Y.B Usman., *The Transformation of Katsina, 1400-1883 The Emergence and Overthrow of the Sarauta System and the Establishment of the Emirate*, Zaria, ABU Press, 1981 for more information on the nature of states formative stages in the history of Hausa land based on the relation of occupational groups as a kind of symbiotic relations in many early settlements that later emerged as states..

[12] Kabiru Sulaiman Tsafe the State and Economy in the Sokoto Calipahate: Policies and Practices in the Metropolitan Districts, c. 1804-1903, 1992, Ph.D Thesis, Dept. of History, Ahmadu Bello University, zaria, Pp.121-131

[13] . British Colonial Rule: India Before and After Colonization Available at https://www.toppr.com/guides/economics/indian-economy-on-the-eve-independence/british-colonial-rule/ Accessed 20th November,2021

was marked by advancements in trade, masonry, arts, music among other remarkable achievements.[14]

In Latin America, the once known empire states of Inca, Aztecs and Maya were flourishing states, with an elaborate system of government and economy that supports the state as independent entities.

For Incas economy was purely based on communalism; where the main unit of production is land which was worked jointly in the cultivation communes known as *Ayylus*.[15] Corn, beans, potatoes and maize were the basic produce. Apart from tilling the lands, each region specializes in other trade, depending on the availability of a particular materials needed or skill involved. Trades and skills in the regions include: road building, textile production, basket weaving, architectural designs and buildings among other trades, as various taxes were exacted to finance states projects in needs such as during famine and drought.

The government at the centre normally collects the entire surplus after local needs were met, and distributed it where it was needed. In this consideration, the citizen necessities as clothing, food, health care and education were provided free for all.[16]

**COLONIALISM**

In this aspect one need to understand what colonialism is and how it was skewed to produce a dependent economy of the third worlds even after it was systematically annihilated and despised globally.

Colonialism is defined 'as "control by one power over a dependent area or people".[17] It goes on to further highlight the content and context of the concept as explained in the above quote as: Colonialism "occurs when one nation subjugates another, conquering its population and exploiting it, often while forcing its own language and cultural values upon its people."[18]

From the above conception about colonialism as explained, it tersely elucidate the word as it is often used, and the way it was meant to serve as a kind of unequal relation between the exploited and exploiters.

Margaret, Collins, and Webster consider colonialism and defined it as:

A practice or policy of control by one people or power over other people or areas, often by establishing colonies and generally with the aim of economic dominance. In the process of colonization, colonizers may impose their language, economics, and other cultural practices.[19]

The above definition succinctly explained the aim of this research work as a kind of imposition of alien rule on a people by a foreign power with the aim of exploiting the resources of the exploited and at the same to undermine the culture of the indigenous population in its entirety.
In Africa, colonialism was stemmed after the Berlin Conference of 1884-5, and each of the European powers carved out their spheres of influence and implement favourable policies on the colonized areas. As Britain, France, Portugal and Belgium were the active European colonizers in Africa during the period under review (from 1880's up).

In West Africa, the French and British colonial policies were directed towards the economy of the colonies. This was aimed at feeding their industries with raw materials and at the same time a readily available market for their output/products. By this, colonial Africa was reduced as a primary producer of raw materials and consumer of European manufactures.

One of the economic policies adopted was the monetization of the economy. Thus, European monies replaced pre-colonial exchange medium. Not only

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[14]. See A. Eraly., *The First Spring: Life in the Golden Age of India. Part 1*, India, Penguin Books, Rev.Ed, 2015

[15] . Economy of the Inca Empire Available at www.discover-peru.org/inca-economy-society/ Accessed 210/12/2021

[16]. "Maya, Aztec and Inca Civilization", in *Core Knowledge Sequence: History and Geography, no:5* Available at www.coreknowledge.com Accessed 21/12/2021

[17] . Erin, Blakemore. "What is Colonialism?" American Monthly magazine, Published by National Geographic Society, February 19, 2019

[18] *Ibid.*

[19] Margaret Kohn, "*Colonialism*", Stanford Encyclopedia of Philosophy, Stanford, Univ. Press, 2017 and Harper Collins," Colonialism", Collins English Dictionary, 2011 Webster's Encyclopedia Unabridged Dictionary of the English, 1989. Pp. 290-299

that, the European banks as West African Currency Board(W.A.C.B)[20] and CFAO[21] were the sole sources where the monies could be sourced from. Therefore, for one to get the money to pay for imposed tax, he must produce what the European firms need. Items as: groundnut, cotton, cocoa, palm oil, Shea butter and spices were the principal items of the trade. Under this type of relations, the Africans had only one choice i.e to cultivate the needed agricultural produce, as for the price it was the sole responsibility of the approved European buying firms to fix the price of commodities through the their agents known as the License Buying Agents (LBA's) to buy from the farmers on behalf of the colonial firms known as the commodities Marketing Boards.[22]

On infrastructural development, industrialization and social services, the colonial government did little to develop the colonies. For instance; all railways constructed during colonialism only linked cash crop production areas with the harbours, where they could be exported to the metropolis states. Roads traversed areas where there are available colonial government offices and interests to protect. For the industries, only semi and micro raw materials processing industries were developed, such as ginneries, cocoa processing plants ea al. As for education, the colonizers only taught to Africans the rudimentary aspect of it such as reading, writing, arithmetic and Europeans history with little craft skill all included. This was meant to train them fit to serve in the colonial firms as traders and easy recruits to facilitate colonial needs as clerks and messengers. As for the clinics and health services, they only provide skeletal services to the natives.

The consequence of the relationship was that, all African labour was diverted towards cash crops production as against food crops production. This was why there was a widespread hunger during colonialism as diseases of malnutrition became common especially among children known as *Kwashiokor*.[23] Also there was massive rural-urban drift as not everyone is able to pay the prescribed taxes imposed, therefore, the best solution is to move to towns and urban areas where there could be jobs so that one may be able to satisfy the taxes and earn a living. Another sad note was the backwardness and death of many indigenous craft industries and local markets, which results in over reliance on foreign materials, tools and technology for agricultural production and other materials needed as well for survival.

In Asia third world states, colonialism did not favour them to some extent. For in India and elsewhere as well, the colonial government only focuses on the exploitation of raw materials and other resources of the areas concerned. Thus, the exploitation formula was re-organization of communities into production estates by using agents known as the *Zamindaris*[24]with Jute, cotton, indigo, tea, sugarcane and oilseeds as the main cash crops.

Self sustainability has been waned and commercialization of labour and large scale migration ushered in which led to famine in some areas, unlike in the pre-colonial India, food sufficiency which has now vanished and resulted in deterioration and stagnation- particularly with regard to food production as the *Zamindaris* were ruthless by nature in exacting rents, taxes and surpluses.[25]

In Latin American states, European colonization and settlement started in about 1500's which changed the structure of the economy and caused lasting effect to their economy and the states till date.

Exports form the bulk of the needs of the colonizers. Due to the availability of resources both natural and mineral, the Latin American states were colonized in earnest by the Spaniards largely then followed by the Portuguese. These European colonizers discovered goldmines in large quantities in Technotitlan, Cuzco,

[20] . The National Archives, Kew. *West African Currency Board*, File no: CO 984

[21] . CFAO, Edinburgh University Library, Special Collections, Ref: GB COLL-444 Also available on line at https://archiveshub.jisc.ac.uk/data/gb237-coll-444

[22] J. Robins., *Cotton and Race Across the Atlantic: Britain, Africa, and America, 1900-1920*, Rochester, Univ. Press, 2016, Pp.144-200

[23] C. D. Williams, "The Story of Kwashiokor", in *Nutrition Reviews/Vol. 31/No: 11/* November, 1973

[24] Indian Economy on the Eve of Independence Available on www.toppr.com/guides/economics/indian-economy-on-the-eve-independence/ Accessed 23/12/2021 See also Chandreyi., *Tea Gardens and Geographies of Colonial Exploitation*, Wisconsin, Univ. Press, 2021

[25] . *Ibid*

Otavalor which today form new Latin American states as Peru, Mexico, Ecuador, Bolivia and Argentina. Therefore, conquest was the tool to get access to such treasures. Thus, in areas controlled by the Spanish, the colonial administration was known as *Conquistadors*[26] with a geared economic policy called *Encomiendes.*[27] This Policy had some secret clause reservations aimed to empower the colonizers as the courts and other colonial machineries were in favour of the Spanish, and therefore purely alien to the natives. Labour relationship was relied upon, where the natives were made to produce agricultural and forest exports like woods and other luxuries for the colonizers, apart from engaging them in the mining sector.

That was the scenario of colonialism in Latin America which has some similarities in Africa and Asia as was described by Post-colonial African writer Walter Rodney in his book titled 'How Europe Underdeveloped Africa', where he lamented that "colonialism had only one hand- it was a one armed bandit"... -he blamed colonialism for laying the foundation of Africa's economic dependency on the international capitalist system.[28]

## INDEPENDENCE

Decolonization as a process towards independence had succeeded in making its imprints on many colonial subjects to the extent that independence was achieved through either passive or active moves i.e violent or non-violent method. Years of colonial oppression and economic backwardness together with external influence against colonialism all combined together to give sense to colonial subjects towards a common struggle and destiny as people and nations as well.

Top of the agitators or nationalists' agenda was the non-inclusion of the indigenous population in the exploitation of their resources for their own benefit. They resented the exploitative policies and system of colonial administration as totally evil and against their development in general.

Some notable personalities in Africa include kwame Nkrumah of Ghana, Nnnamdi Azikiwe of Nigeria, Julius Nyerere of Tanzania. In Latin America, persons as Simon Bolivar, Ernesto Che Guevera just to mention but a few. For Asia, Mahatma Gandhi and Jawarl Harlal Nehru – all these nationalists had common slogan i.e total independence of their states from all colonial vestiges.

More so, the two World Wars I&II (1914-1918 and 1939-1945) and their aftermath, the emergence of the United States as world super power and her repudiation stance to colonial and empire holding , so also the Atlantic Charter of 1941[29] which set all people free from the yokes of colonialism. These series of events liberated many third world states in the twentieth century, and that was why it was called a "century of independence" for the third world states.

But, does it mean that the third world states are really independent as they were meant to be both in theory and practice?

## INDEPENDENT THIRD WORLD STATES: CAPITALISM AND IMPERIALISM

Despite jubilations and high expectations upon attainment of political independence by the third world states, it was accompanied by uncertainties and dilemmas, as to which type of socio-economic system is suitable and can operate or be adopted in their states.

Also on the part of the erstwhile colonizers, they envisage that if the new independent states are allowed to become developed along any of the socio-economic and political line, they would compete with them in terms of economy, industrialization, military strength et. al. Therefore, the best idea is to continue to wield influence on the third world states by whatever means and thwart their efforts towards any development plan, ideas and agenda through a policy dependency, which define the extent of relations and based on the new formed theory as thus;

[26] . C. Minster.," Spain's American Colonies and the Encomienda System", ThoughtCo, Sep. 9, 2021 See also thoughtco.com/spain-american-colonies-encomienda-encomienda-system-2136545. Accessed 20/12/2021

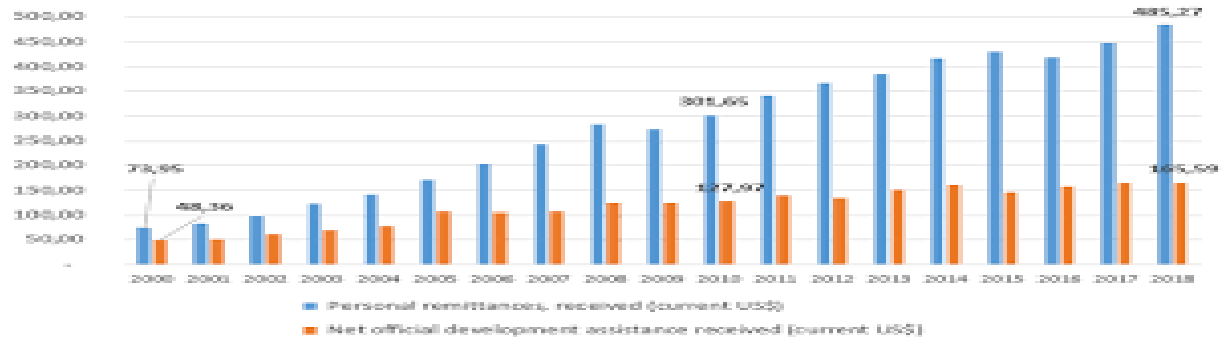
[27] .Ibid.

[28] . Ibid.

[29] . See D. Brinkley et. al., *the Atlantic Charter (The World of the Roosevelt's*), Palgrave, Macmillan, 1994.

... in reinforcing the dependency on the third world states, two important tools are used, they are capital and finance. The dependent nations come to owe the developed nations so much money and capital that is not possible to escape debt, and thereby continuing the dependency for the foreseeable future.[30]

From the above point expressed, the former colonial administrators and their home governments were determined to continue their dominance over the new independent states, so much that they capitalize on the state of the poor economy and lack of capital of the new independent third world states, therefore, to over burden them with debt is to continue exploiting them in the process of external debt services at the expense of national development where the capital is much needed. The chart below represents the extent of external debt of under developed economies of the third world from the year 2000-2018.




*Blue Colour: personal remittance received in US$ *Gray Colour: net official development recorded in US$
Source:www.cadtm.org Google Search :developing countries caught in the vice Accessed 27/12/2021

The above chart shows that the new politically independent states were caught within the trap of borrowing (debt), without commensurate development records many years after independence. The developed economies were using different terminologies in order to persuade third world states to accept such loans and grants. Such terms as soft loans, grants, waivers and intervention in foreign aids or foreign direct investment (FDI) as the case may be; were some of the common terms. These terms were succinctly digested as: it makes the states to rely on foreign capital to pursue economic and political reforms inwardly by many countries of the third world. These aids and grants, have become the reliable sources of finance to most third world economies, and for this reasons, they were classified as Less Developed States (LDS) whereas, the donor states are called Developed States (DS). The reliance of country/states on foreign aids will have a negative economic effect in its entirety.[31]

## GENERAL OVERVIEW OF THIRD WORLD STATES

The polarization of the world states into classes of the haves and the haves not was defined so often by strong and reliable economy. This makes us to understand why some countries are still poor and underdeveloped and while others continue to grow economically. The study of this paradigm lies in understanding the socio-political relations of the two and the unique features of the third worlds states or developing economies as some apologists want them to believe.

[30] . Ashley. C., *"Definition and Examples of Dependency Theory"*, ThoughtCo. Retrieved 12/02/2020 Accessed 27/12/2021

[31] , C. Micheal et al., "Counting Chickens When They Hatch: Timing and the Effects of Aids on Growth", in *The Economic Journal*, 122(561) 2011, Pp. 589-620

Common characteristics of the third world states are that they defend heavily on mono cultural economy i.e specialize on the production of one single commodity as a means of earning foreign exchange. For instance: Venezuela, Libya and Nigeria got most of their wealth from crude oil sales in the international markets. It accounted more than 65% of Nigeria's annual revenue to the government;[32] for Venezuela, oil comprises of 95% exports and 25% GDP[33] and for Libya, it represents about 69% of export earnings and this contributed to about 605 of the total GDP of the country.[34] Based on these percentages as regards to the contributions of oil and gas to the economy, the economy itself can be described as is in a fragile state - when oil prices are high, they enjoy good economic fortunes, and when prices drops, economic disaster sets in generally.

Secondly, they have lager populations without commensurate opportunities; unlike developed economies. Of the total world population of about 7 billion, the highly industrialized nations classified as G7, do not have larger populations in excess presently and their population may increase by 2030 to about 3.3%; while those of developing countries will be about 20.7%.[35] These projected figures are alarming, because as the total world population increases without growth in economic opportunities; so the poverty margin continues to widen, and for that third world countries continue to rely so much on debt to address the imbalance which of course they could not due to poor economic and planning policies.

More so, the population increase will lead to large scale migrations towards more prosperous countries and regions of the world from the third world states. This would no doubt aggravate poverty from the source of migrants as virile young men and women leave their states without investing their energies and resources in their home countries. Though it was envisaged that demographic increases will provide huge opportunities for business and people, large challenges too are expected to arise as billions of people come into existence and join urban ways of life as migrations from rural to urban cities and areas increase many times as was put forward as:

By 2030, 60% of the world's population will be living in urban areas, compared to today's 53%. In number terms, this means that 1.2 billion people will be leaving the fields to take part in city life. Eight out of ten (82%) people in developed countries and almost 56% of the population in developing countries will live in urban areas. [36]

With majority of the population adopting city life in the third world states the utilization of their labour and productivity seems to be a distant objective, as the migrants will become excess or surplus talents which may not be realized forever and hence, continue to live in poverty due to their states historical-economic ties with the highly developed worlds that did nothing to set and direct the society towards self sufficiency and economic independence of the third world states.

On another note which has much to do with indirect foreign influence of the developed economies through international organizations and bodies which continue to subjugate the economy of third world states despite being independent politically. Some of these bodies include:

(a) Commonwealth: being it an organization of former British colonies, it has to some extent continued to influence the economy of its former colonies through interventions with international business cartels. For instance: Crude oil sales and exchange to international markets from the former colonies is constantly under the watchful eyes of Britain. It upholds that such is aimed to protect the interest of her former colonies commodities exchange. But, over years of such intercessions between the former colonies and the international markets, there has never a point in time when Britain openly act to make sure products from its former colonies was being underpaid according to world prices.[37]

[32] . Nigeria Extractive Industries Transparency Initiative NEITI Available on www.eiti.org/es/implementing_country/32 Accessed on 30/12/2021

[33] . Greg Depersio, How Does the Price of Oil Affect Venezuela's Economy?, *Investopedia*, 25/06/2019(updated)

[34] OPEC Annual Statistics Bulletin 2021

[35] Roland Berger Consultancy, UK, 24 June 2015

[36] Roland Berger., *Op. Cit.*,

[37] See P. Murphy., *The Empire's New Clothes: The Myth of the Commonwealth*, Oxford, OUP, 2018

(b) European Economic Community (EEC)/European Union (EU) Aids: through this agency, the European Economic Community has been pouring so called aids and grants to help poor countries of which the third worlds are the main targeted states. The so called aids were the avenues to explore more areas of economic significance to the European member states, as some of the third worlds are still grappling with political uncertainties, therefore, dealing with uncertain governments in business is risky as governments might be easily unseat due to political instability. And the best way to explore and exploit third world states is to pose as helping friends, while reporting to their home countries the enormous potentialities of the states for possible ways to exploit them.[38] Even when decolonization was taking its effects in Africa and elsewhere, there was already a plan to continue to exploit third world states through another union of European states. This was aptly expressed by the leader of Pan-European movement, Richard Coudenhove-Kalergi that:

> Africa could provide Europe with raw materials for its industry, nutrition for its population, land for its overpopulation, labour for its unemployed, and markets for its products. ."Beyond Eurafrica: Encounters in a Globalized World", *Europe Now Journal*, 28/02/2018 Available online at www.europenowjournal.org

From the above it can be seen that, Europe is fully prepared to integrate its society and economy so as to pursue policies common to them no matter the rhetorical chores of the independence granted to the third worlds, and they have succeeded in harmonizing common exploitative policies against non European-third world states. For example: the formation of the European Movement (1948), organization for European Economic Co-operation (1948), the Council of Europe (1949), and finally the the European Economic Community (1957). These bodies are determined not only to relinquish colonialism, but rather elevate it to an international supranational level globally and they have succeeded to a certain degree till date.[39] And as the dictum goes on to state the true nature of such European associations and bodies as:

> The European Union must, of course, include its orbit the extensions, dependencies and associated territories of the European Powers in Africa and elsewhere, and must preserve the existing constitutional ties with them...we do not wish to see Africa lost to European influence, culture, trade etc...

So, by whatever policy and standard, the third world were forcibly joined to the whims and caprices of the Europe no matter the amount of efforts made to free themselves from the bondage of Europe's exploitative means and manoeuvres.

(c) United Nations (UN) and its strategies: the UN as an international body has not been fair in its role to third world states. In that, some third world states have been turned into supporting countries of the industrialized worlds under the guise as primary production areas with the support of UN's programmes and subsidiaries, such as the FAO. It was envisaged that through support to food production in the third world states, they may not likely realize their position as supporters of the developed worlds through food production in their countries. Historically, food has never been a problem in many third world states before colonialism, but with the inception of colonialism and forcible intensification of cash cropping system to the detriment of food crops, hunger and starvation set in. So, through assisting in the production of foods to the impoverished nation's population, the

[38] . John. Ravenhill., "Review: Equals, Clients, or Dependents? A.C.P Relations with the E.E.C under the Lome Conventions" *The Journal of Modern African Studies, Vol.25, No. 4, (Dec. 1987), Pp.700-740*

[39] . Ibid.

psyche of the citizens and the state as well may be directed into thinking that – the UN's FAO food prgramme is helping matters as regards to their plight (hunger). [40]

## CONCLUSION

It is clear from the above facts highlighted and discussed that, the third worlds are nothing both politically and economically rather than instruments in the hands of those who through their mischievous aims and visions in the domination and continuous exploitative policies that were designed to rule economies (third world states) in order to develop their states (developed worlds) and peoples. No doubt that, they (developed states) had tried many times to convince the world it was not economic motive that made them to come out of their lands and start colonizing other states. The reality can be seen as to why in the process they did not maintain mutual economic relationships with the third world states at the time they arrived and left? Secondly, their exploitative policies during colonialism in making the colonized produce what was not required or needed was to negate the states needs, and forced them to rely entirely on foreign products. Thirdly, upon attainment of political independence of the third world states, the developed states merged their businesses and firms into cartels and corporations in order to continue to influence third world states' economy - which in many cases determined how truly independent a state is, and its capacity to determine the destiny of its citizens without interference from any other state or body no matter how big and militarily strong it is. Therefore, the whole idea of political independence was cloaked under the garb of perception that: the third worlds are free, but in reality, there was only a replacement/substitution of political leadership from alien rule to native rule, the position and status of the economy is still the status quo as during direct control by the alien rulers of the third worlds.

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# Indian Industry and Self Reliant India – Vision and Prospects

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## ABSTRACT

Covid pandemic has drastically affected every sector of the economies all over the world. The industrial sector is drastically affected, that would also impact production, employment and revenue generation in the economy. Indian industry is largely dependent on the exports and major industries heavily reliant on the inputs from the other countries for the production. Owing to the lockdown, supply chain operations were disturbed with the imposed restrictions. In a globalised world, supply chain is interconnected among different nations. It resulted into enhanced supply chain disruptions across the globe. The Indian trade scenario also got shocked in this unprecedented situation. In order to revive out of this crisis, it is recognized to strengthen domestic supply chain with less dependence on exports. The Government of India initiated various measures in this regard to make Atmanirbhar Bharat- Self-reliant India. In this context, the present paper focuses on the on the trade scenario with special reference to supply chain disruptions in the light of challenges and policy measures.

**Keywords:** Covid Pandemic, Indian Industry, Supply Chain, Atmanirbhar Bharat

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## INTRODUCTION

The Covid-19 pandemic is causing large-scale loss of life and severe human suffering globally. The OECD indicates that the impact of the lockdown could be a decline in the level of output in many economies as well as the decline in consumers' expenditure. The connotation for annual GDP growth is anticipated in a decline of up to two percentage points for each month that strict containment measures continue, although this impact will depend on many factors, including the duration and magnitude of national shutdowns, the extent of reduced demand for goods and services in other parts of the economy, and the speed at which significant fiscal and monetary policy support takes effect. This is a much more negative outlook than foreseen just a few weeks earlier (OECD, 2020).

Indian industry is largely dependent on the exports and major industries heavily reliant on the inputs from the other countries for the production. With the

alarming depression owing to the Covid-19 pandemic, the high debt scenario can deepen the financial pressures to the economies and contribute to the meltdown in financial markets. India's recent economic slowness would be susceptible to the impact of the pandemic. The commotion in the supply chain, limited access to raw material, shutting down of factories and unavailability of the full strength of employees could lead Indian companies towards financial crisis (ASSOCHAM, 2020). MSMEs are likely to be strictly impacted if the lockdown continues for a longer duration. A large number of MSMEs could incur business losses and may also face stern cash flow disruption, which in all likelihood will have an adverse effect on the livelihood of several people working in this sector. Moreover, from economic outlook, it is particularly significant to ensure the flow of money into the working capital of such enterprises otherwise there will be a risk to the survival of these enterprises (FICCI, 2020).

Against this backdrop, the present paper focuses on the impact of COVID-19 on the Indian industry with special reference to disruptions in supply chains in addition to the challenges as well as suggestive measures. The data used in the paper is secondary, which is mainly obtained from the published reports of the various research agencies, government publications, newspapers through the internet. Besides Introduction in Section I, the impact of COVID-19 on the Indian industry has been discussed in Section-II. Section III explains the supply chain disruptions due to the COVID pandemic. Section IV concludes the paper with suggestions.

## COVID-19 IMPACT ON INDIAN INDUSTRY

The Indian economy has been witnessing economic slowdown over the past few quarters. In the third quarter of the current fiscal year, the economy grew at a rate of 4.7%. Investment and consumption demand had been suffering and a number of stimulus measures have been taken to bring back the economy on a growth path. There was a strong hope of recovery in the last quarter of the current fiscal year. But, the COVID-19 epidemic has made the recovery awfully difficult in the near future. It has posed huge challenges for the Indian economy on demand and supply fronts. The supplied front has been impacted owing to the closing down of the factories in China, US and other markets of Asia and Europe (FICCI, 2020).

The Indian economy is likely to experience a lower growth during the last quarter of the current fiscal. In case the spread of corona virus continues, growth may remain in the first quarter of the next fiscal year. Various agencies have therefore revised their 2020 and 2021 growth projections for India keeping in view the negative impact of COVID-19. ADB has projected that Covid-19 outbreak could cost the Indian economy alone between US$ 387 million and US$ 29.9 billion in personal consumption losses. The projections have been made by ADB under four different scenarios: best-case, moderate-case, worst-case and a hypothetical worst case. In the same way, in a moderate case, the losses will be about US$ 640 million while in a worse-case scenario when the precautionary measures continue for six months, personal consumption expenditure in India can decline by US$ 1.2 billion. The forecast by OECD has revised down India's growth forecast by 110 basis points to 5.1% for 2020-21 and by 80 bps to 5.6% for 2021-22. OECD has also estimated that global growth in 2020 could come down by 50 bps as compared to what was projected earlier. Fitch has also cut its forecast for India's economic growth to 4.9% for 2019-20 from 5.1% projected earlier, as it expects weak domestic demand and supply chain disruptions due to the corona virus outbreak to affect the manufacturing activities adversely. Moody's Investors Service has revised down its growth forecast for India to 5.3% for 2020 from its earlier estimate of 5.4%.

Further, MSMEs are suffering severe problems including shortage of labour, interruptions in the supply chain of intermediate goods in addition to the decline in demand, revenue, liquidity crisis etc. MSMEs occupy a vital role in the industrial sector of the nation in terms of employment, exports and revenues. This segment is adversely affected all over the world. Various countries have announced several measures to ensure the least impact of the present slowdown on this vital sector as follows (OECD, 2020).

A survey by the FICCI (2020) reveals that:

- The effect on demand and supply of goods and services, businesses are also facing

reduced cash flows due to slowing economic activity.

- 53 % of the Indian businesses point out the marked impact of the Covid-19 pandemic on business activities at early stages.
- It has significantly affected the cash inflows.
- Supply chain has been poorly affected.
- Organisations have focused on hygiene aspects.
- About 30% organisations have initiated Work-from-Home policies for their employees.

## SUPPLY CHAIN DISRUPTIONS

As per the UN report, India is among the top 15 nations affected by the slowdown of manufacturing in China. It is also estimated the trade impact of around 348 million dollars. Further, this outbreak could also huge loss in respect of consumption losses, as per the report of Asian Development Bank (www.livemint.com). For India, the trade impact is estimated to be the most for the chemicals sector at 129 million dollars, textiles and apparel at 64 million dollars, automotive sector at 34 million dollars, electrical machinery at 12 million dollars, leather products at 13 million dollars, metals and metal products at 27 million dollars and wood products and furniture at 15 million dollars. China has seen a dramatic reduction in its manufacturing Purchasing Managers Index (PMI) to 37.5, its lowest reading since 2004. This drop implies a 2 per cent reduction in output on an annual basis. This has come as a direct consequence of the spread of corona virus (CII, 2020). China accounts for close to 30% of global expoets of electronics and electroinic components.India's total electronic imports account for 45% of China. Around one-third of machinery and two-fifths of organic chemicals India purchases from the world come from China. For automotive parts and fertilisers China's share in India's import is more than 25%. Around 65% to 70% of active pharmaceutical ingredients and around 90% of certain mobile phones come from China to India (Kumar et. al., 2020 and Business line, 2020).

Further, the disruption in the global supply chains due to lockdowns and business closures have affected the economies all over the world and it is estimated that it will decline the global trade of all nations. The Covid pandemic has enhanced the problems and challenges of already slowdown of global trade growth due to USA and China trade war; increase in protectionism and non agreement among G-20 and g-7 countries to enhance global trade. The covid-19 outbreak is global in nature and severely affected the economic structure as it is intensely interrelated. It has widely disrupted the supply chain in every nation including India. As discussed above that Indian industry is heavily dependent on imports. Such imports are also essential for exports apart from domestic production. Thus, supply chain disruptions have far reaching impacts on exports earnings, employment and MSMEs which are heavily dependent on imports (Sahoo, P. 2020- book). According to the Ministry of Commerce and Industry, Government of India, the dollar value of exports reduced by 12.76 per cent in the January-March 2020 quarter, compared to the same quarter in 2019, where as in case of exports of 2019 to US$ 21.41 billion in March 2020 with a negative growth rate of 34.57 per cent. Further, imports also declined from US$ 43.72 billion in March 2019 to US$ 31.16 billion in March 2020. The covid outbreak would largely affect manufacturing sector where the production process is globally fragmented. The share of global value chain based trade in total world trade augmented astoundingly during the 1990 – 2000. Developing countries dependent on global value chain trade would be negatively affected due to the lockdown at global level (World Development Report, 2020 and Veeramani, C.2020-book).

## CONCLUSION AND SUGGESTIONS

There is an urgent need to take immediate steps to not only contain the spread of the virus but also to address the key pain areas of the industry which can help in minimising the impact of the outbreak on the Indian economy. Supply chains have become highly sophisticated and vital to the competitiveness of many companies. But their interlinked, global nature also makes them increasingly vulnerable to a range of risks, with more potential points of failure and less margin of error for absorbing delays and disruptions. A decades-long focus on supply chain optimization to minimize costs, reduce inventories, and drive up asset utilization has removed buffers and flexibility to absorb delays and disruptions. COVID-19 illustrates

how many companies may not fully appreciate their vulnerability to global shocks through their supply chain relationships. India needs to move away from an input base system to a more support base system that would promote participation in the supply chains. Domestic firms must develop its own local sourcing units and adopt alternative strategies for reducing dependency on China. The government must support domestic manufacturers to enlarge capacities, venture into new geographies and reach out to global manufacturers, making it attractive for them to invest in the country. COVID-19 has taught corporate decision makers that in formulating future supply chain design, apart from cost, quality and delivery they would also need to stress-test the chains on new performance measures including resilience, responsiveness and reconfiguration.

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# The Determinants of Trade Flow and Potential between Ethiopia and Group of Twenty

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## ABSTRACT

This study is intended to assess Ethiopia's trade flow determinants and trade potential with G20 countries whether it was overtraded or there is/are trade potential by using trade gravity model. The sources of panel data used were IMF, WDI, United Nations population division, The Heritage Foundation, Washington's No. 1 think tank online website database, online distance calculator and others for the duration of 2010 to 2019 for 10 consecutive years. The empirical data analyzing tool used was Random effect model (REM) which is effective in estimation of time-invariant data. The empirical data analyzed using STATA software result indicates that Ethiopia has a trade potential with seven countries of G20, whereas Ethiopia overtrade with 12 countries and EU region. The Ethiopia's and G20 countries/region bilateral trade flow statistically significant/ $p<0.05$/determinants were the population of G20 countries, growth domestic products of G20 countries, growth domestic products of Ethiopia, geographical distance between Ethiopia and G20 countries. The top five G20 countries exported to Ethiopia were china, United State of America, European Union, India and South Africa, whereas, the top five G20 countries imported from Ethiopia were EU, China, United State of America, Saudi Arabia and Germany respectively. Finally, the policy implication were Ethiopia has to Keep the consistence of trade flow with overtraded countries and improve with under traded countries through trade policy revision and secondly, focusing on the trade determinants to improve trade flow is recommended.

**Keywords:** Trade Gravity Model, Trade Determinants, G20, International Trade, Trade Potential

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## INTRODUCTION

This research is conducted to examine the trends of trade flow, determents of trade flow and trade potential of Ethiopia with Group of twenty members. The group of twenty is comprised of Argentina, Australia, Brazil, Canada, China, the European Union, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South

Korea, Turkey, the United Kingdom, and the United States. Collectively, G20 members account for around 85% of global gross domestic product (GDP), 75% of world trade, 80% of global carbon dioxide emissions (CO2) and 70% of global plastic production as well as two-thirds of the world's population (Organization for Economic Co-operation and Development/OECD, 2019). It excluds about 148 global countries and only contains medium and high income countries, but takes a loin share in trade, economic, world population, and carbondioxed emmission. South Africa is the only African country member of group of twenty. The major international trading partners of Ethiopia were China, the United States, Somalia, Kuwait, Switzerland, Saudi Arabia, Germany, Italy, Djibouti, Japan, and UK. (Oumer N. & Eunice L., 2017). Except Somalia, Kuwait, Switzerland and Djibouti the rest countries are a group of twenty members. Ethiopia's industrialization strategy emphasis on labor intensive economy, whereas most of group of twenty memebers are capital intensive and the trade between Ethiopia and a group of twenty is better off as Heckscher-Ohlin theory of trade. This theory is comparative advantage in international trade. According to this theory capital intensive nations exports capital intensive goods and imports labor intensive goods, while countries in which labor intensives are expected to export labor intensive goods and imports capital intensive goods (Arndt, S. W. 1997).

As of world trade organization the Ethiopia's merchandize world total trade share in 2019 were 0.01% export and 0.08% import (WTO, 2020). In 2019, Ethiopia exported $7.6 billion and imported $20.0 billion, resulting in a negative trade balance of -$12.4 billion.

In 2015, Ethiopia's largest export sector was Vegetable, with 64.69% of total exports. Ethiopia exported 1,654 different products in 2015 foreign direct investment was $2.5 billion or 2.62% of the GDP, as of 2019. Ethiopia's annual GDP growth was 8.36% per year in 2019. Its total investment rate was 39.00% of GDP in 2017. Inflation was 10.69, as of 2017. (The World Bank, 2019). As of World Bank national and the Organization for Economic Co-operation and Development (OECD) national account data file the Ethiopia's international trade/export and import/ contribution to GDP is 48.23% in 2011 and 28.42% in 2019. It decreased continuously from 2011 to 2019 by 2.43% in average. Now days, lot of literatures are accessible on gravity model approach trade flow determinants and potentials analysis. (Negussie Z. and Dessalegn G., 2014) conducted a research on Determinants of Bilateral Trade between Ethiopia and its Major Trading Partners'. Its result were total trade flow was determine by mass (economic size) of the importing and exporting countries, real bilateral exchange rate, FDI of Ethiopia, weighted distance and bordering between Ethiopia and the major trading parents.

Another recent study conducted on a Dynamic Panel Gravity Model Application on the Determinant Factors of Ethiopia's Coffee Export Performance. It's results suggested that lagged Ethiopia's coffee export performance, real gross domestic product (GDP) of importing countries, Ethiopian population, Ethiopian real GDP, openness to trade of importing countries, Ethiopian institutional quality, and weighted distance were found to be the determinant factors of Ethiopia's coffee exports performance (Wondesen T. and Fekadu G., 2019).

Another study on the Determinants of Ethiopia's Live Animal Export Using a Gravity Model Approach by Hayat Mohammed in 2019. The study result indicates the Partner country's Gross domestic Product, weighted distance between Ethiopia and partner countries', partners country's population and total road network of Ethiopia found to be a significant factors affecting Ethiopia's live animal export in the period between 2000 and 2017 (Hayat Mohammed, 2019).

(Murad M. and, Beyan A, 2020) studied the Determinant of Sesame Export Performance in Ethiopia using a Panel Gravity Model Application. The study results were real gross domestic product of importing countries; Ethiopian real gross domestic product, real exchange rate and weighted distance were found to be the determinant factors of Ethiopia's sesame exports performance.

The study conducted on Determinants of Ethiopia's Livestock Exports: Analysis of Gravity Model of Trade analysis revealed that real gross domestic product, real gross domestic product per capita, the population size of the importing partner countries, and the real

exchange rate were the major gravity factors affecting positively livestock export earnings (Yibrah H. and Gabriel T., 2020). From above literatures, it is possible to observe the gaps and limitations of the previous studies that:

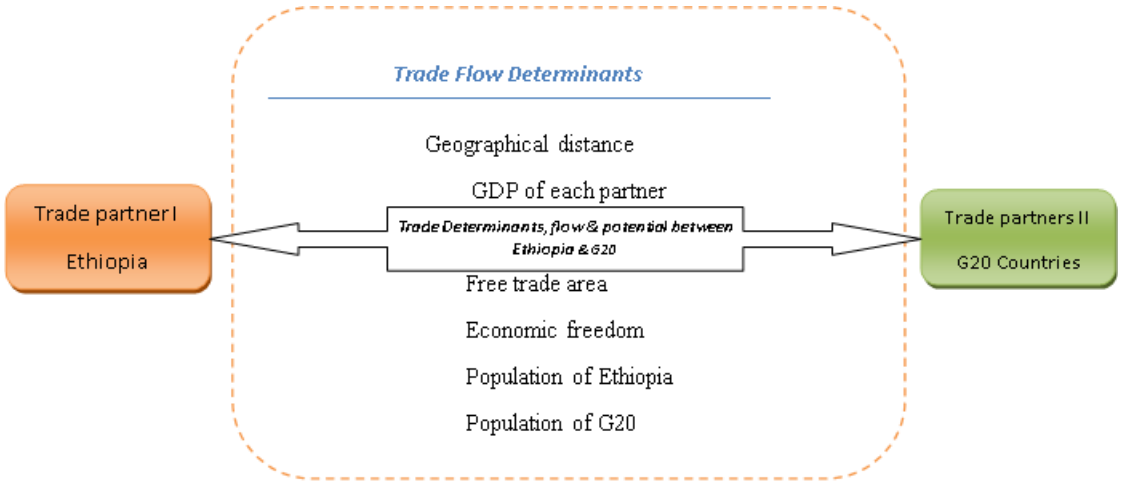
All literatures covers the basic trade gravity model factor economic sizes, and distances but different in other independent variables however, there is no single study, which considered the economic freedom index in its study.

Thus, this research is intended to identify the trade determinants, trends of trade flow and assesses where the Ethiopia's international trade potential is/are in the members of group of twenty, the main factors that can affect the Ethiopia's international trade, and international trade tends flow using traditional gravity model of trade and dummy variables like FTA and EF.

## CONCEPTUAL FRAMEWORK

The conceptual framework for overall study is shown as the following diagram.

Figure 1.1. Conceptual framework




## METHODOLOGY OF THE STUDY

This chapter discussed the research methodology used for data collection, data generation and analysis. The main methodologies discussed were model specification, sources of data and data analysis. Research methodology allows the reader to critically evaluate a study's overall validity and reliability of the study. It discusses the way trade flow determinants and potential between Ethiopian and Group of twenty countries data collected, generated and analyzed.

## MODEL SPECIFICATION

The basic form of the gravity model of trade can be described as follows:

$$T_{ij} = \beta_0 * \frac{GDP_i * GDP_j}{\dots\dots\dots\dots\dots\dots\dots\dots} \quad (1)$$

Where $T_{ij}$ is bilateral trade volume between Ethiopia and each G20 member countries, $\beta_0$ is constant; $GDP_i$, and $GDP_j$ are Ethiopia's and Group of twenty member countries GDP respectively, $D^2$ the square of Geographical distance of capital city of Ethiopia (Addis Ababa) to other group of twenty member countries capital city.

Based on the above basic gravity model of trade above, the other variables used were population, economic freedom index of Ethiopia and G20, Common free trade area, and error terms. To satisfy the requirements of linear estimation the natural logarithm transformation of equation (1) above were expressed as:

$$lnT_{ijt} = \beta_0 + \beta_1 ln\ GDP\_prt_{it} + \beta_2 lnGDP\_eth_{it} + \beta_3 lnD + \beta_4 lnpop_j + \beta_5 lnpop_i + \beta_6 lnEF_j + \beta_7 lnEF_i + \beta_8 lnFTA + ei \ldots (2)$$

$T_{ijt}$ is the value of international trade (export and import) between country i (Ethiopia) and country j (G20 member countries) in year t. the total trade value is used as dependant variable.
$GDP\_eth_{it}$ is Growth Domestic Products of country i (Ethiopia) in year t
$GDP\_prt_{jt}$ is Growth Domestic Products of country j (G20 member country) in year t
$D_{ij}$ is distance between capital city of country I and j
$FTA_{ij}$ is a dummy variable that takes the value of 1 if both countries have PTA together; otherwise 0.
Economic Freedom (EF) is a dummy variable that has 5 categories: free, almost free, moderately free, mostly unfree and repressed. It takes the value of 4 if a country i economic freedom rank is free, 3 mostly free, 2 moderately free, 1 mostly unfree and 0 repressed, and some for country j.
ei is error term.
Population ($pop_i$, $pop_j$) is a total population of Ethiopia ($_i$) and G20 countries/region ($_j$) respectively.
ei is error term and $\beta_1$ to $\beta_8 > 0$.

## VARIABLE DEFINITIONS AND DATA TYPE

For the effectiveness of this research, the types of data used were Panel data, which is the Hybrid of cross-sectional & time-series data. This is because of the fact that cross-sectional or time series data alone is not sufficient to study these types of research as it needs further data, which were collected from IMF, WDI, United Nation population division, and other sources. Both quantitative and qualitative data were collected. Survey data collection instrument was Online Surveys or secondary data. The type of data collected were export values from Ethiopia to each group of twenty countries, import values from each country to Ethiopia, geographical distance of capital city of Ethiopia from each country or vis., GDP, Population, and dummy variables (FTA, and economic freedom) of each countries/region.

**Total Trade Value (Tv)**
The Total trade values of bilateral are export (EX) and import (IM) of goods and services of Ethiopia with G20 countries/region partners in USD. Therefore, total trade value is the sum of bilateral exports and imports. Data on bilateral exports and imports were collected from IMF, direction of trade statistics database Online.

**Growth Domestic Products (Gdp)**
It is the market value of total production of goods and services in a country. In this paper G20 countries/region and Ethiopia's GDP were used. The Data on GDPs' were obtained from the World Bank-World Development Indicators online database.

**Geographical Distance (Dist)**
It is the geographical distance between the capital city of economic center from Ethiopia to G20 trading partners, measured in kilometers (km) and it is fight distance. Data on distance is sourced from an online distance calculator website. For geographical distance center of European Union, the average center place was used as the fight distance from Ethiopia to EU.

**Population (POP)**
The data for the countries and region included in the study were obtained from United Nations population division, department of economic and social affairs, world population prospects 2019 online database. The population in this study includes both sexes

combined by region, sub-region and country annually for 2010- 2019 estimations. The populations of EU countries were taken the sum of all 27 members of EU member countries for each year.

**Economic Freedom Index**

It is the fundamental right of every human to control his or her own labor and property. In an economically free society, individuals are free to work, produce, consume, and invest in any way they please. In economically free societies, governments allow labor, capital, and goods to move freely, and refrain from coercion or constraint of liberty beyond the extent necessary to protect and maintain liberty itself. The economic freedom index has 12 factors to evaluate EF score of a country. A country's scores in each area are then compiled into a single score, according to which countries are ranked from most (highest score) to least free. These factors are Property rights, Judicial effectiveness, Government integrity, Tax burden, Government spending, Fiscal health, Business freedom, Labor freedom, Monetary freedom, Trade freedom, Investment freedom and Financial freedom.

Economic freedom data of each countries and region were obtained from index of economic freedom, an annual guide published by The Heritage Foundation, Washington's No. 1 think tank online website database.

**Common Free Trade Area (FTA)**

Ethiopia has no bilateral free trade area with any of G20 countries/regions, but Africa as a continent and developing countries has the free trade with USA and EU. Therefore, Ethiopia shared the opportunities with others. The two Free trade areas (opportunities) are generalized system of preference (GSP) everything but army (EBA) which removes tariffs and quotas for all imports of goods (except arms and ammunition), coming into the EU from least developed countries and African Growth and Opportunity Act (AGOA) which is designed to assist sub-Saharan Africa and improve the economic relationship between United State and the region.

## DATA ANALYSIS

After the completion of data collection, the data analyzing was done using gravity model approach and Random Effect Model (REM) and Generalized Least Square (GLS) econometric techniques. The panel data were collected from IMF, WDI, United nation population division and other sources were quantifiable, and it organized and analyzed systematically with the help of statistical software (STATA 14.00). Gravity model is the equation easily fits with some important stylized facts; gravity model has become a popular model to measure an elasticity of trade volumes. It also noted that the model is easily estimates using Random effect Model (REM) which uses GLS. Gravitational equations have proven to be very effective used as linear equations that can be used to measure elasticity. An advantage of the REM is that it allows us to estimate the effect of time-invariant variables which cancel out in fixed effects estimation.

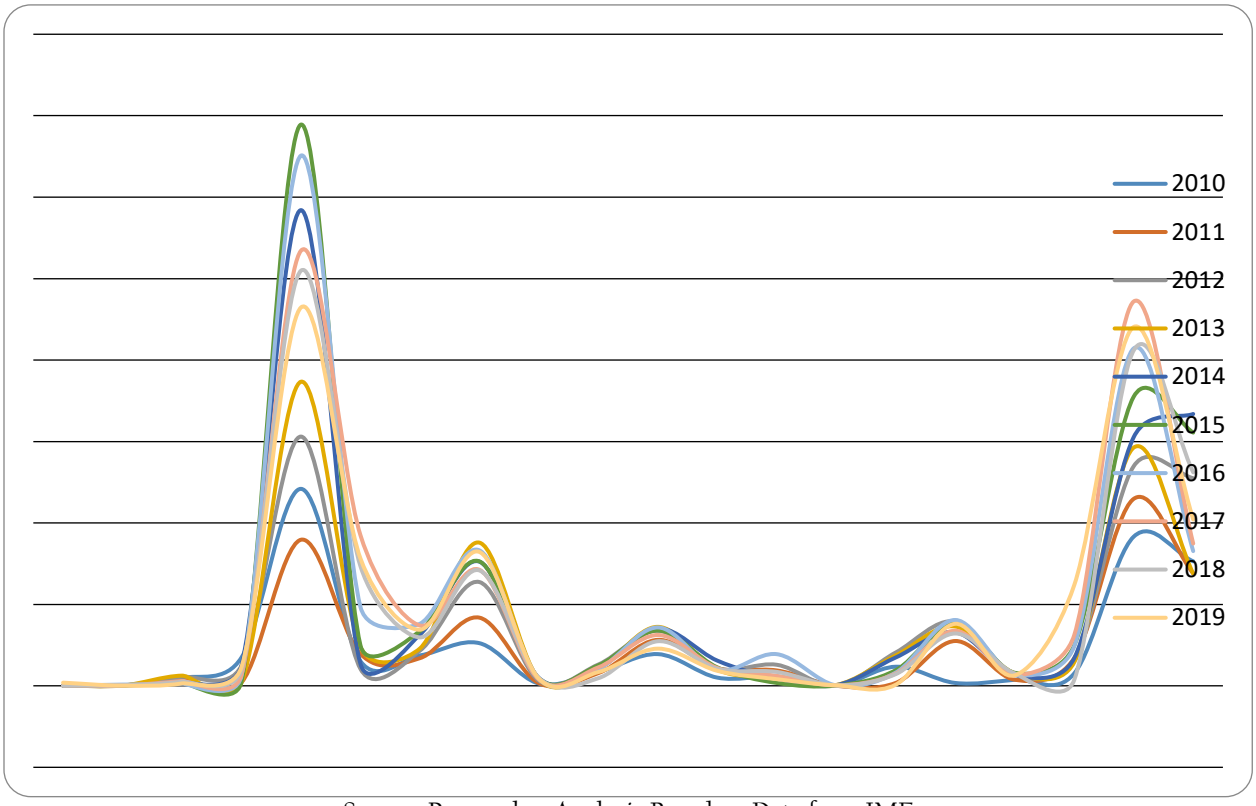
## RESULT, DISCUSSION AND ANALYSIS

This chapter discussed the Ethiopia's international total trade trends with G20 countries, descriptive of empirical results of the study, correlation and regression analysis. The descriptive empirical analysis focused on the describing and characterizing of each continuous and dummy variable. The continuous variables are natural logarithm of total trade value, natural logarithm of Growth Domestic Products of G20 countries and Ethiopia, natural logarithm of geographical distance between Ethiopia and each G20 country, natural logarithm of G20 and Ethiopia's population. The discrete/dummy variables are economic freedom of Ethiopia and G20 member countries/region, and the free trade area between Ethiopia and G20 countries/region.

**Ethiopia's Import trade trends with G20 countries (2010 -2019)**

Even though, there were variations in the value of trade trends Ethiopia has the trade trends with all group of twenty countries/ region (G20). The import trade tends of Ethiopia with G20 countries/ region from 2010 to 2019 are shown as the following line graph. As it can be observed from the graph 3.1 Ethiopia's importing trends are increasing from time to time.

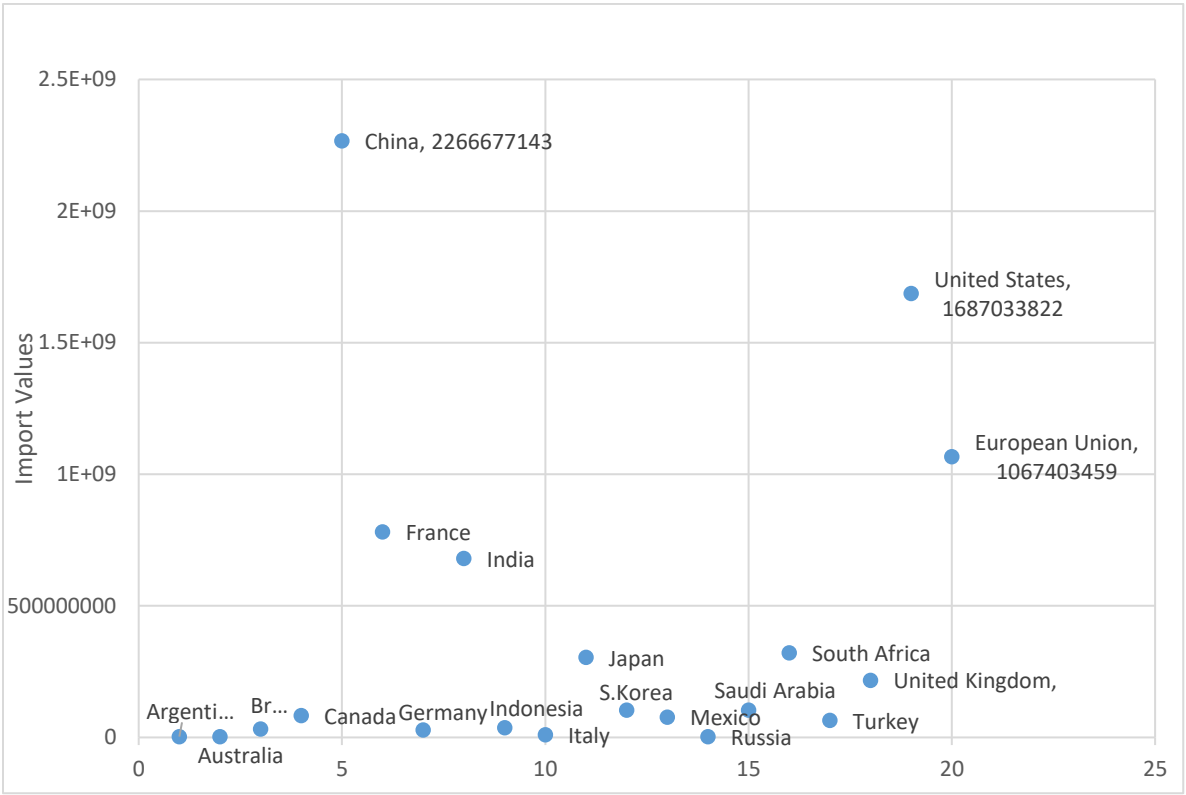
**Figure 3.1** Ethiopia's Import trade trends with G20 members (2010 -2019)




Source: Researcher Analysis Based on Data from IMF

The average import trade trends of Ethiopia with G20 countries/region was as shown in the following graph. In the graph, it shows that Ethiopia's import trade with china higher than other G20 countries/region in average. The average value of import trade of Ethiopia from china during 2010 to 2019 was estimated to 22,666,771,427 USD. The top three lowest import trade trends of Ethiopia with G20 countries was observed with Russia, Austria and Argentina. The imported trade values were estimated to 26,183,000 USD, 30,552,084 and 31,946,392 respectively.

Figure 3. 1 Ethiopia's Average Import trade trends with G20 members (2010 -2019)



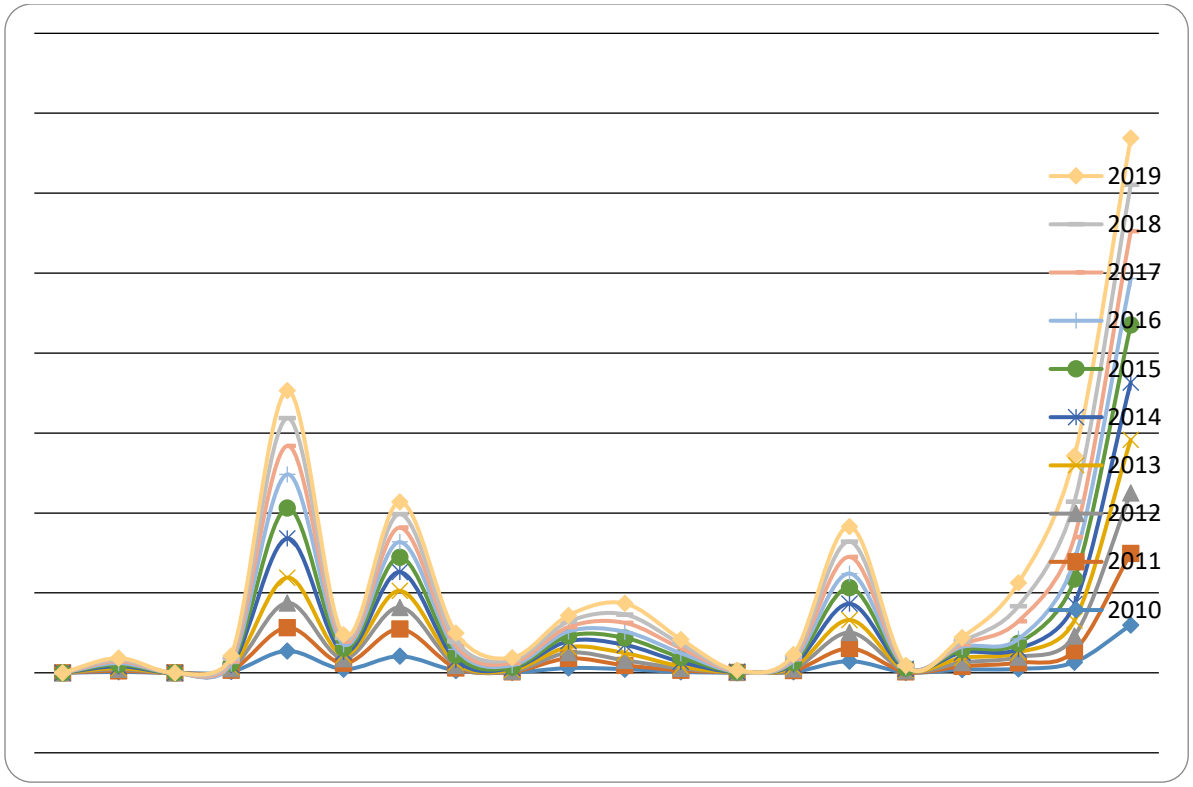

Source: researcher analysis based on data from IMF

The top five G20 countries/region suppliers to Ethiopia from 2010 to 2019 were China, United State, European Union, India and South Africa. In other words, they are top five G20 countries or region import destination of Ethiopia. The Ethiopia's import values were 22,666,771,427USD, 16,870,338,218USD, 10,674,034,587USD, 6,798,276,873 USD and 3,210,659,900 USD respectively.

**Ethiopia's Export trade trends with G20 countries (2010 -2019)**

Ethiopia has the long history of export trade starting from barter trade. The export trade trends of Ethiopia with G20 countries/region from 2010 to 2019 were discussed in this paper. Though the import and export trade tends of Ethiopia with G20 countries/region were unbalanced or deficit trade the export trade trends of Ethiopia was increased from time to time. The average total Ethiopia's import trade trends from 2010 to 2019 were 78,390,158,682USD, whereas the total average exports trade trends of Ethiopia with G20 countries/region were 22,417,977,696 USD. The total average trade deficits of Ethiopia with group of twenty countries / region were 55,972,180,986 USD. The Ethiopia's export trade trends were more than three times lower than that of imported commodities from group of twenty countries/regions. The following line graph 2.4 shows the Ethiopia's export trade trends from 2010 to 2019 with G20.

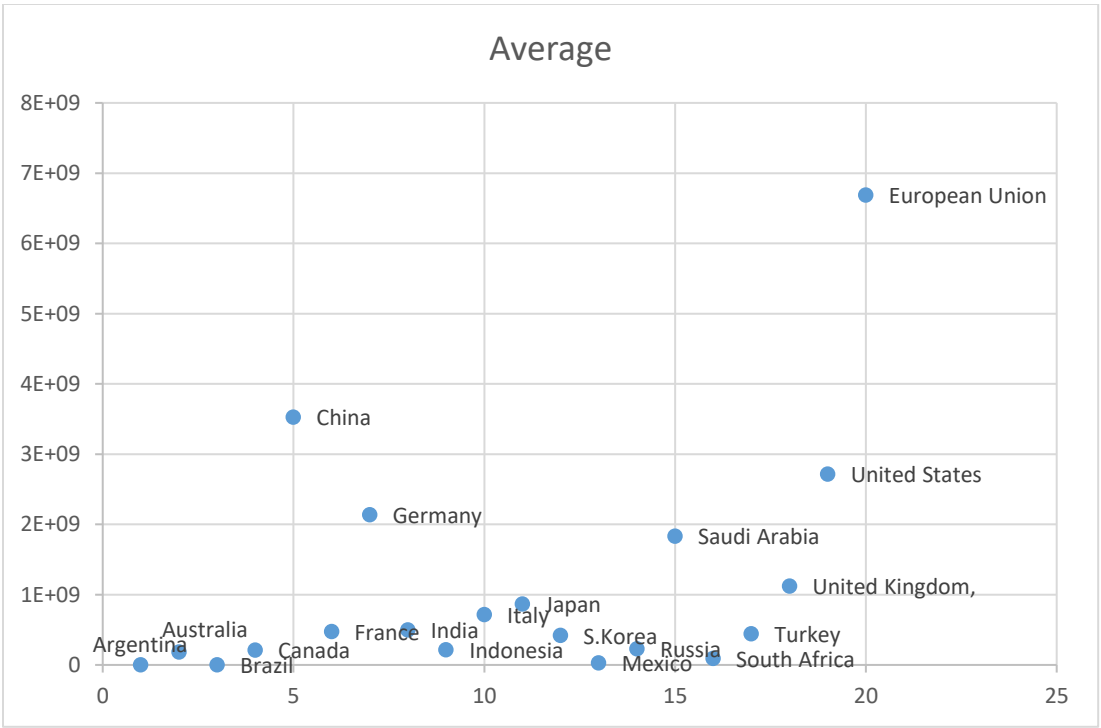
Figure 3. 3 Ethiopia's Export trade trends with G20 countries (2010 -2019)




Source: researcher analysis based on data collected from IMF

The highest export destination of Ethiopia from 2010 to 2019 was European Union. The estimated total export value to EU was 6,689,489,925 USD. The top three lowest Ethiopia's export destination from G20 member countries were Brazil, Argentina, and Mexico. The average exported values to these countries were 1158235 USD, 1310332 USD and 31339620 USD respectively. The following line graph 6 shows the average export destination of Ethiopia from 2010 t0 2019.

**Figure 3. 4 Average Ethiopia's Export destination with G20 countries (2010 -2019)**




Source: researcher analyis based on data collected from IMF.

The top five Ethiopia's export destinations of G20 countries/region from 2010 to 2019 were EU, China, united State, Saudi Arabia and Germany. The total Ethiopia's export values to these countries were 6689489925 USD, 3529508319 USD, 271660612 USD, 213975669 USD and 1831936066 USD respectively. The following bar graph 2.7 shows the top five Ethiopia's export destination of G20 countries from 2010 to 2019.

**Descriptive, correlation and regression analysis**

This sub topic discussed the descriptive, correlation and regression analysis. The descriptive analysis focused on the describing and characterizing of each continuous and dummy variable. The continuous variables are natural logarithm of total trade value, natural logarithm of Growth Domestic Products of G20 countries and Ethiopia, natural logarithm of geographical distance between Ethiopia and each G20 country, natural logarithm of G20 and Ethiopia's population. The discrete/dummy variables are economic freedom of Ethiopia and G20 member countries/region, and the free trade area between Ethiopia and G20 countries/region.

**Table 3: 1 The continuous descriptive variables empirical results**

| Variables | Observation | Mean | Std.dev | Variance | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| ln_tradevalue | 200 | 18.91043 | 1.760832 | 3.100529 | -0.61438 | 3.427845 |
| ln_GDP_prt | 200 | 28.42133 | 1.077938 | 1.161951 | 0.4830461 | 2.443371 |
| ln_GDP_eth | 200 | 24.7624 | 0.3879544 | 0.1505086 | -0.3480927 | 1.812824 |
| ln_distance | 200 | 8.869385 | 0.5153695 | 0.2656057 | -0.922934 | 3.713576 |
| ln_popeth | 200 | 18.41371 | 0.0789117 | 0.0062271 | -0.042166 | 1.768671 |
| ln_poppart | 200 | 18.51701 | 1.161137 | 1.348239 | 0.6864482 | 3.07655 |

Sources: Researcher own analysis based on data collected (IMF, WDI, UN Population Division)

From table 2.1 above it is possible to know the characteristics of data distribution or normality of the data. The skewness measures the degree of asymmetry of the series. The normal skewness has 0 skew. It shows weather distribution is symmetry around its mean or not. The positive value of skewness shows the long right tail of the distribution and the negative value shows the long left tail of the distribution. Kurtosis shows the flatness/peakness of the curve. A normal distribution is with the kurtosis value of 3. Positive kurtosis value shows the peak curve and negative value shows the flat/lower curve. There are different literatures on the acceptance level of skewness and kurtosis. Some literatures says the acceptance level of skewness is -/+1 and acceptance of kurtosis 3 whereas other literature says -/+ 2 and -/+7 respectively.

Based on the concepts discussed above and the STATA result table 4.1 it can be concluded that skewness of trade value, population of Ethiopia, GDP Ethiopia and distance are negative value and slightly twisted to the left, but with the acceptance level of below -1. The skewness of the variables GDP of G20, population of G20 is positive and slightly twisted to the right with the acceptance level less than 1.
The kurtosis statistical data result shows that the values of trade value, population of G20 and distance are slightly greater than 3 and it implies that there is a thin "bell" with a high peak for each variable, whereas the variables for kurtosis in STATA result for population of Ethiopia, GDP of Ethiopia and GDP of G20 are less than 3 and shows its tails are shorter and thinner, and its central peak is lower and broader compared to a normal distribution. In general, the statistical result of both skewness and kurtosis are within the acceptable level.

In the study economic freedom index (EF) and free trade areas (FTA) were considered as discrete/dummy variables. EF is a dummy variable that have 5 categories as of The Heritage Foundation, Washington's No. 1 think tank online website database of 2010 to 2019 Economic freedom index. The categories were: free, almost free, moderately free, mostly un-free and repressed. ef_categoryeth and ef_ categoryprt are designated for economic freedom of Ethiopia and G20 member countries/region respectively. As data sourced indicates, EF score of Ethiopia from 2010 to 2019 were ranged from 43.8 to 53.6 and it is categorized as the score less than 50 are repressed and 50-60 is mostly un-free economic freedom. Since, the Ethiopia's economic freedom score failed between these two categorize it is a dummy variables which takes 1 for mostly un-free (50 -60) and 0 for less than 50 is repressed. Thus, comparing with 183-world countries economic freedom index the statistics result shows 20 % of the Ethiopia's economic freedom index category from 2010 to 2019 were repressed, whereas 80% were mostly un-free.

The economic freedom of G20 member countries/region were categorized as 4 if a G20 countries economic freedom rank is free, 3 mostly free, 2 moderately free, 1 mostly un-free and 0 repressed. The statistical analysis shows 2% of G20 countries/region were categorized as repressed, 26.5% as mostly un-free, 38.5% moderately free, 26.5 % mostly free and 6.5% is free.

Another dummy variable included in the study was FTA which shows that the common free trade area between Ethiopia and each G20 countries/region. The statistical result shows that Ethiopia and G20 members have 25% common free trade area whereas with 75% Ethiopia has no common free trade area with G20. The Ethiopia's common free trade area with

G20 members that covers 25% are generalized system of preference (GSP) everything but army (EBA) which removes tariffs and quotas for all imports of goods (except arms and ammunition), coming into the EU from least developed countries and African Growth and Opportunity Act (AGOA) which is designed to assist sub-Saharan Africa and improve the economic relationship between United State and the region.

**Regression Analysis of Alternative Model Result**

This part of the study is to presents the empirical results of the Fixed Generalized least square (FGLS), fixed effects (FE), random effects (RE) estimators and RE robust. The section is also help to choice the appropriate estimator based on the time invariant of data.

**Analysis of the Estimated FGLS, Fixed Effects and Random Effects Models**

In view of the nature of dataset employed in this study, it is essential that we select an appropriate estimation method, which accounts for the heterogeneity and correlation in the gravity models resulting from the presence of individual and time effects in the panel data. Therefore, first estimate the FGLS model, fixed effects (FE) and random effects (RE) models, with total bilateral trade of Ethiopia with G20 as the independent variable. The preliminary results of these models are presented in Table 5.3.

Table 3.2 GLS, FE, RE and Random Effect Robust (RER) Models Estimates of Trade Gravity Model of Ethiopia's Total Trade Values From (2010 - 2019)

| Dependent Variables | Fixed Generalized Least Square (FGLS) Model | Fixed Effect (FE) Model | Random Effect (RE) Model | Random Effect, Robust |
|---|---|---|---|---|
| Dependent Variables | LnTij | LnTij | LnTij | LnTij |
| ln GDP_prt | 0.5413824 *** (0.000) | 0.2465448 (0.325) | 0.7056942 *** ( 0.000) | 0.7056942 ** (0.011) |
| ln GDP_eth | 1.209303 (0.255) | 1.014466 * (0.063) | 1.089744 * (0.051) | 1.089744 ** (0.032) |
| lnDis | -1.574686*** (0.000) | omitted | -1.367755*** (0.000) | -1.367755*** (0.000) |
| Ln_poppart | 0.8541629 *** (0.000) | 0.0775861 (0.513) | 0.2258836 ** (0.037) | 0.2258836 (0.141) |
| Ln_popetht | -4.08198 (0.433) | -2.879266 ( 0.283) | -3.455918 (0.209) | -3.455918 (0.211) |
| ef_categoryprt | 0.831167 *** (0.000) | 0.1424604 (0.264) | 0.2003922 * (0.087) | 0.2003922 (2.47) |
| ef_categoryeth | 0.0212935 (0.891) | -0.015734 (0.843) | 0.007528 (0.927) | 0.007528 (0.886) |
| FTA | 0.3285348 (0.104) | omitted | 0.4428466 (0.351) | 0.4928468 (0.315) |
| conistant | 45.05642 (0.520) | 38.07883 (0.29) | 42.900000 (0.247) | 42.90566 (0.25) |
| $R^2$ | | 0.4415 | 0.6845 | 0.6845 |
| No. of countries | 20 | 20 | 20 | 20 |
| No. observation | 200 | 200 | 200 | 200 |
| Hausman (x2) | - | 0 | 119.85 | - |

***, **, and * indicate statistical significance at 1%, 5%, and 10% error level respectively. The values in parenthesis are the p-values of associated with the parameters. The results obtained with the aid of STATA14.

**Models fitness**

The fitness of the model or the independent variables reliably to predict the dependent variable is identified in the regression model. The significance level taken for this study is 5%. It means alpha level is 0.05. From the regression analysis 3.2, the p-value is 0. P-value less than significance level means the group of independent variables reliably predicts the dependent variable. If p-value greater than alpha level then the independent variables are not consistently predicts the dependent variable. In this study the p< alpha, therefore the model is fit. The other is R squared it

shows an overall measure of the strength of association independent variables and dependent variables. It does not reflect to what extent particular independent variable is associated with the dependent variable. It believed that the higher R-squared value and Adjusted R are better. Thus, the model has no problem in both R –squared and P-value. In this study the R-squared are 44.15% for fixed effect model, 68.45% for random effect model. R-squared value indicates that the variance in total trade value between Ethiopia and G20 can be predicted by the independent variables GDP of Ethiopia, GDP of G20, the geographical distance between Ethiopia and G20, population of Ethiopia, population of G20, economic freedom of Ethiopia, economic freedom of G20 and common free trade area.

According to the FGLS results, the trade of all the conventional gravity variables domestic income (GDPi), foreign incomes (GDPj) and geographical distance (Dist) have their theoretically stipulated signs with statistically significance of GDP of G20 and geographical distance at 1% error level. Others independent variables which are statistically significant at 1% error levels are economic freedom index and population of G20 with positive sign of coefficient.

For the Fixed effect (FE) model only GDP of Ethiopia is significant at 10% of error level whereas all $GDP_i$, $GDP_j$ and Distance are found as per the theory of trade gravity model.

The random effect model statistical result shows the $GDP_i$, $GDP_j$ and Geographical distance confirms both theory of gravity model and empirical. The $GDP_j$ (G20) and Distance are statically significant at 1% error level and $GDP_i$ (Eth) is statistically significant at 10% error level. The robust random effect statistical result shows $GDP_i$, $GDP_j$ and distances are statistically significant at 1%, 1% and 5% error level and theoretical fit with the gravity model of trade.

**Coefficient Estimation and Model Selection**

According to the FGLS results, the trade of all the conventional trade gravity model variables growth domestic income ($GDP_i$), foreign incomes ($GDP_j$) and geographical distance (Dist) have their theoretically stipulated signs with statistically significance of GDP of G20 and geographical distance at 1% error level. Others independent variables, which are statistically significant at 1% error levels, are economic freedom index and population of G20 with positive sign of coefficient. For the Fixed effect (FE) model, only GDP of Ethiopia is significant at 10% of error level whereas all $GDP_i$, $GDP_j$ and Distance are found as per the theory of trade gravity model. The random effect model statistical result shows the $GDP_i$, $GDP_j$ and Geographical distance confirms both theory of gravity model and empirical. The $GDP_j$ (G20) and Distance are statically significant at 1% error level and $GDP_i$ (Eth) is statistically significant at 10% error level. The robust random effect statistical result shows $GDP_i$, $GDP_j$ and distances are statistically significant at 1%, 1% and 5% error level and theoretical fit with the gravity model of trade.

The random effect model uses GLS and fixed effect model uses OLS for estimations. With fixed effects models, we do not estimate the effects of variables whose values do not change across time and the REM allows estimating the effect of time invariant variables, which cancel out in fixed effects estimation. As this study includes independent variables, which do not changed through time series, Random effect model is preferable over fixed effect model. The fixed effect model omitted Geographical distance between trade partners and FTA as it indicated in table 3.2

The predicted total trade value flow between Ethiopia and G20 members' were estimated using REM and eight independent variables that help to predict total trade flow. The results of each coefficient and corresponding p-values show the statistical significance or insignificance of each independent variable on dependent variable. Increasing every unit independent variables increases or decreases the dependent variable by the value of estimated coefficients. The study result shows the geographical distance and population of Ethiopia adversely affect the trade flow between them. The other independent variables affect the trade flow positively as its results are positives. The coefficient for GDP of G20, geographical distance, GDP of Ethiopia, and population of G20 are 0.7056942, -1.367755, 1.089744 and 0.2258836 respectively, which their p-values are significantly different from 0 using alpha of 0.05 because their p-values are less than 5% error level. The rest variables are not significantly different from zero

using alpha 0.05 because their p-values are greater than alpha level.

**The existence of trade positional between Ethiopia and G20 member countries**

This study estimates trade potential of Ethiopia with group of twenty countries/region using trade gravity model analysis. After the average trade estimation from 2010- 2019 for each countries has been estimated the comparison of average actual trade between Ethiopia and G20 countries/region take place. If the actual value is lower than the estimated value, it is called "trade inadequate/under trade/un taped", and if actual trade value is greater than estimated value then it is called over trade (ZHANG Hai-sen,XIE, ZHNG jain-ming, 2010). The regression equation used to analysis the coefficients and estimated trade value was linear regression model of REM. As the ratio result of actual trade value to estimated trade value shows there are different results of estimated trade values. The G20 countries actual trade value is less than estimated trade values include Argentina, India, Indonesia, Brazil, Mexico, Russia and Australia. The G20 member countries/region actual trade value is greater than estimated trade values consists of EU, USA, Germany France, Saudi Arabia, china, Canada, south Africa, turkey, south Korea, Japan, Italy, and United Kingdom. The estimated trade between G20 and Ethiopia is shown in appendix 1.

## CONCLUSIONS AND POLICY IMPLICATIONS

*Policy Implication*

Based on the study findings the policy implications of the study were indicated as follows:

1. The finding shows that seven G20 countries (Argentina, Brazil, Russia, Indonesia, India, Mexico, and Australia) were under traded with Ethiopia, whereas 12 G20 countries and EU region (Saudi Arabia, Japan, EU, France, USA, Germany, South Africa, United Kingdom, turkey, china, South Korea, Italy, and Canada) were overtraded. It implies that Ethiopia were under traded with least GDP countries and overtraded with high GDP countries. Therefore, the study would like to recommend Ethiopia to Keep the consistence of trade flow with overtraded countries and improve with under traded countries through trade policy review.
2. The study discovered that Ethiopia has no trade bilateral agreement with any G20 countries/region. The common free trade area considered in this study were EBA and AGOA which are the trade opportunity of developing and African countries rather than bilateral. Even though it is common advantages for African trade, it improves the trade flow between Ethiopia and G20 members. Therefore, the researcher would like to recommend Ethiopia to consider bilateral trade agreement with G20 countries in its trade policy.
3. One of the main objective of this study was assessing the determinants of trade flow between Ethiopia and G20. Finally, the study discovered, the population of G20 member countries/region, economic freedom of G20 countries/region, growth domestic products of G20 member countries/region, common free trade area and geographical distances were the factors that affects the trade flow between Ethiopia and G20. Therefore, this study finding indicates trading with high-populated countries/region, nearest located countries, high GDP and FTA brings better achievements.

*Conclusion*

This thesis conducted on the determinants of trade flow between Ethiopia and Group of twenty countries/region. It was to identify the trade flow determinants, the trade trends and the trade potentials between trade partners. To conduct the research the independent variables considered were GDP, population, geographical distance, economic freedom and common free trade area of Ethiopia and G20 member countries. The panel data for 10 consecutive years 2010 to 2019 has been analyzed using Random effect model (REM) estimation technique. The trade gravity model fits the panel data. All three of the trade traditional gravity effects are intuitively reasonable, with statistically significant p-values with significance level 1% and 5%. The statistical results of trade determinants shows that the population, economic freedom, and growth domestic products of G20 member countries/region, common free trade area and geographical distances of

trade partners were the factors that affects the trade flow between Ethiopia and G20. The thesis empirical results also indicates that Ethiopia was under traded with seven g20 countries (Argentina, Brazil, Russia, Indonesia, India, Mexico, and Australia) and overtraded with 12 G20 countries and EU region (Saudi Arabia, Japan, EU, France, USA, Germany, south Africa, United Kingdom, turkey, china, south Korea, Italy, and Canada). Another point this research identified were the top five-export destination of Ethiopia and top five supplier trade partners. The quantitative data analyzed shows that the Ethiopia's top five export destination g20 member countries were EU, China, united State, Saudi Arabia and Germany respectively, whereas the top five G20 countries/region exports to Ethiopia from 2010 to 2019 were China, United State of America, European Union, India and South Africa respectively. The study satisfies the basic trade gravity model, the bilateral trade flow improved with increasing the trading partners GDP & GDP of Ethiopia, decrease with increasing of the distance between the partners. The econometric estimation result implies as distance and increasing in population of Ethiopia affects the trade flow adversely, however the increasing of the population of Ethiopia was not statistically significant. The study implies that Ethiopia should Keep the consistence of trade flow with overtraded countries, improve with under traded countries through trade policy review, and better to consider bilateral trade agreement with G20 countries in its trade policy. However, this study left the trade determinants and trade potential of export and import of Ethiopia with G20 member countries/region independently for future study, as this study emphasized on total trade flow.

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# APPENDICES

| | Argentina with Ethiopia | | | EU with Ethiopia | | | US with Ethiopia | | |
|---|---|---|---|---|---|---|---|---|---|
| year | Actual value | Estimated | Actual/Est | Actual value | Estimated | Actual/Est | Actual value | Estimated | Ac |
| 2010 | 1.11 | 66.23 | 0.02 | 1362.27 | 721.47 | 1.89 | 1049.73 | 500.60 | |
| 2011 | 1.13 | 560.02 | 0.00 | 1587.39 | 56.18 | 28.26 | 1292.31 | 423.73 | |
| 2012 | 1.31 | 48.41 | 0.03 | 2030.53 | 522.76 | 3.88 | 1531.50 | 364.27 | |
| 2013 | 1.84 | 55.26 | 0.03 | 1354.36 | 555.19 | 2.44 | 1656.17 | 414.46 | |
| 2014 | 1.92 | 63.52 | 0.03 | 2384.75 | 614.66 | 3.88 | 1733.68 | 474.84 | |
| 2015 | 1.16 | 75.00 | 0.02 | 2272.59 | 620.00 | 3.67 | 2085.12 | 562.00 | |
| 2016 | 1.45 | 57.85 | 0.03 | 1409.58 | 443.87 | 3.18 | 2307.74 | 429.59 | |
| 2017 | 2.04 | 64.57 | 0.03 | 1465.46 | 506.89 | 2.89 | 2650.89 | 477.85 | |
| 2018 | 1.51 | 5.93 | 0.25 | 1891.15 | 429.48 | 4.40 | 2504.26 | 438.29 | |
| 2019 | 19.77 | 52.83 | 0.37 | 1605.45 | 385.52 | 4.16 | 2775.54 | 388.28 | |
| Average | 3.32 | 104.96 | 0.08 | 1736.35 | 485.60 | 5.86 | 1958.69 | 447.39 | |
| | | | | | | | | | |
| | Turkey with Ethiopia | | | Italy with Ethiopia | | | Germany with Ethiopi | | |
| Year | Actual | Estimated | Actual/Est | Actual value | Estimated | Actual/Est | Actual value | Estimated | Ac |
| 2010 | 78.31 | 72.32 | 1.08 | 145.76 | 96.10 | 1.52 | 394.20 | 130.93 | |
| 2011 | 330.89 | 99.88 | 3.31 | 199.19 | 81.03 | 2.46 | 510.70 | 109.95 | |
| 2012 | 399.76 | 86.59 | 4.62 | 202.58 | 69.45 | 2.92 | 488.26 | 93.92 | |
| 2013 | 453.43 | 99.46 | 4.56 | 176.75 | 78.81 | 2.24 | 436.42 | 106.33 | |
| 2014 | 454.69 | 115.08 | 3.95 | 184.86 | 90.03 | 2.05 | 550.70 | 121.45 | |
| 2015 | 426.62 | 137.00 | 3.11 | 190.75 | 106.00 | 1.80 | 522.06 | 143.00 | |
| 2016 | 435.98 | 106.17 | 4.11 | 161.01 | 80.68 | 2.00 | 569.92 | 109.31 | |
| 2017 | 423.05 | 119.24 | 3.55 | 169.23 | 89.18 | 1.90 | 550.90 | 121.50 | |
| 2018 | 379.50 | 110.33 | 3.44 | 113.98 | 81.23 | 1.40 | 468.51 | 111.38 | |
| 2019 | 366.09 | 98.44 | 3.72 | 163.64 | 71.44 | 2.29 | 496.98 | 98.54 | |
| Average | 374.83 | 104.45 | 3.54 | 170.77 | 84.40 | 2.06 | 498.87 | 114.63 | |
| | France with Ethiopia | | | Saude Arabia with Ethiopia | | | Russia with Ethiopia | | |
| Year | Actual value | Estimated | Actual/est | Actual value | Estimated | Actual/est | Actual value | Estimated | Ac |
| 2010 | 198.30 | 101.86 | 1.95 | 263.61 | 44.42 | 5.93 | 12.54 | 232.42 | |
| 2011 | 269.29 | 85.97 | 3.13 | 177.01 | 38.44 | 4.60 | 18.24 | 195.42 | |
| 2012 | 162.65 | 73.73 | 2.21 | 403.77 | 33.82 | 11.94 | 20.66 | 167.02 | |
| 2013 | 281.92 | 83.69 | 3.37 | 344.14 | 39.37 | 8.74 | 27.96 | 189.05 | |
| 2014 | 176.37 | 95.67 | 1.84 | 377.93 | 46.08 | 8.20 | 37.68 | 215.55 | |
| 2015 | 295.70 | 113.00 | 2.62 | 297.11 | 56.00 | 5.31 | 26.21 | 254.00 | |
| 2016 | 529.32 | 86.00 | 6.15 | 258.50 | 43.15 | 5.99 | 23.38 | 193.21 | |