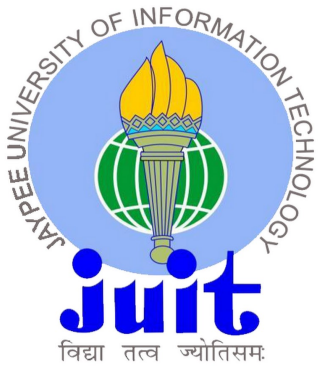
EXPLORING AND ESTABLISHING LINKAGES OF GLOBALIZATION WITH FINANCIAL PERFORMANCE AND PRODUCTIVITY OF FIRMS

Thesis submitted in fulfillment for the requirements of the degree of

DOCTOR OF PHILOSOPHY

By

BALRAJ



DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY,

WAKNAGHAT, H.P.

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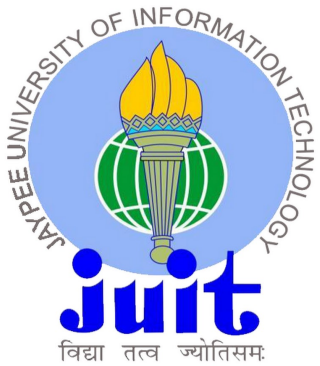

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DECLARATION BY THE SCHOLAR

I hereby declare that the work reported in the PhD thesis entitled **"Exploring and Establishing Linkages of Globalization with Financial Performance and Productivity of Firms"** Submitted at **Jaypee University of Information Technology, Solan (HP), India** is an authentic record of my work carried out under the supervision of **Dr. Amit Srivastava**. I have not submitted this work elsewhere for any other degree or diploma. I am fully responsible for the contents of my PhD thesis.

BALRAJ
Enrollment No.: 166802
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(HP), India

SUPERVISOR'S CERTIFICATE

This is to certify that the work reported in the Ph.D. thesis entitled **"Exploring and Establishing Linkages of Globalization with Financial Performance and Productivity of Firms"** which is being submitted by **Balraj** at **Jaypee University of Information Technology, Waknaghat, Solan (HP), India**, is a bonafide record of his original work carried out under my supervision. This work has not been submitted elsewhere for any other degree or diploma.

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BALRAJ

ABSTRACT

After experiencing about three decades of the era of globalization, it is pertinent to test the impact of globalization on the macro and micro-economic variable of the economy such as the economic growth and the firms' performance in India. The study takes account of both the realm of performance, i.e. financial performance and productivity. The thesis thus examines the effect of globalization on economic growth, on the financial performance of firms and on the productivity of firms, in the three different portions. To investigate globalization - growth phenomenon, the study used time-series dataset for the period 1991 to 2017, for exploring the globalization - firm's financial performance and globalization - firm's productivity linkage, the unbalanced panel data set of 912 firms was developed for the period 2000 to 2018. The present study not only tests the association but also tries to explore the causal linkages of different dimensions of globalization with different dependent macro/ mirco economic variables. The study also tried to find out the influence of globalization on the firms from fourteen different sector of Indian economy to assess the sector-specific performance.

The study use statistical tools such as panel regression, the johansen cointegration test and VAR/ VECM for analysis. The result shows the long-run convergence between the globalization's dimensions and India's economic growth. The study found bidirectional causality between financial globalization and the economic growth. The firms' financial performance is found to have an association with the economic and political globalization. Overall, the investigation failed to establish the long run integration between different dimensions of globalization and firms' financial performance. The results established causality of economic and political globalization with the financial performance of the firms, in the short run. In context to productivity, the study found no convergence of globalization with the firms' productivity in the long run. However, when tested for causality, trade, financial and informational globalization found to have caused the productivity of firms, in the short run.

Keywords: Globalization, Economic Growth, panel data, Differential Intercept Coefficients, Firm Performance, KOF Index, ROA, ROCE, ROI, Economic Growth, KOF Globalization Index, Cointegration, VAR, VECM, Granger causality, Stationarity, Foreign Direct Investment, Total factor productivity, Firm-level analysis, Panel data.

LIST OF ABBREVIATIONS

ADRL	Autoregressive Distributed Lag
ASEAN	Association of Southeast Asian Nations
ATK/FP	A.T. Kearney / Foreign Policy
B2B	Business-to-Business
CMIE	Centre for Monitoring Indian Economy
CUGI	Cultural Globalization
D.V.	Dependent Variable
DEA	Data Envelopment Analysis
EBIT	Earnings Before Interest and Taxes
EC	Error Correction Term
FDI	Foreign Direct Investment
FIGI	Financial Globalization
GDP	Gross Domestic Product
GATT	General Agreement on Tariffs and Trade
G-index	Globalization Index
GMM	Generalized Method of Moments
HBR	Harvard Business Review
HH Index	The Hirschman Herfindahl Index
HRM	Human Resource Management
I.V.	Independent Variable
ICT	Information and Communication Technology

INGI	Informational Globalization
IIT	Intra-Industry Trade
IPGI	Interpersonal Globalization
IT	Information Technology
KFP Index	Kearney/ Foreign Policy Index
KOF	Konjunkturforschungsstelle
Ln	Natural Log
MPI	Malmquist Productivity Index
NGO	Non-Governmental Organization
OECD	Organisation for Economic Co-operation and Development
OIC	Organisation of Islamic Cooperation
OLS	Ordinary Least Squares
POGI	Political Globalization
RBI	Reserve Bank of India
RIGHT	Right-Wing Political Parties
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
ROI	Return on Investment
SAARC	South Asian Association for Regional Co-operation
SARS	Severe Acute Respiratory Syndrome
SIC	Schwarz Information Criteria
SMEs	Small and Mid-Size Enterprises
SPSS	Statistical Package for the Social Sciences
SSGRs	Steady-State Growth Rates
TFP	Total Factor Productivity
TFPG	Total Factor Productivity Growth
LM Test	The Lagrange Multiplier Test

MGI	The Maastricht Globalization Index
TRGI	Trade Globalization
UK	United Kingdom
UN	United Nations
UNO	United Nations Organization
WTO	World Trade Organization
IMF	International Monetary Fund
WB	World Bank
US	United States
USD or US$	United States Dollar
VAR	Vector Auto Regressive Model
VECM	Vector Error Correction Model
WITS	World Integrated Trade Solution
WMRC	World Market Research Centre's
Wtavg	Weighted Average

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Chapter 1

INTRODUCTION

1.1 Introduction

World economy has not only witnessed the exponential quantitative increase in the volume and value of cross-border trade and capital flow, but qualitative shift in the ways societies/ people interact with each other particularly, in the last few decades. Nation states are now increasingly interconnected through foreign markets for goods and intermediate goods, resulting in increased cross-border flows of products, capital, and labour, as well as knowledge, innovation and technology, and managerial know-how. The global economy is getting more intertwined now. One of the most important changes impacting the transformation of national economies is the globalization process. Globalization provides numerous opportunities for participating economy to accelerate their development, but it also creates obstacles and puts pressures on policymakers in managing national, international, and world economy systems. While the benefits of globalization may be enormous, the question of whether the real allocation of gains is fair and equal in the case of developing counties like India is still need the answer. Nevertheless, the causal influence of different components of globalization on the economic growth is still an unexplored area.

The economic growth of a nation lies on the success of the firms operating there and in the evolving world economic order, globalization has become one of the most significant forces shaping today's economic growth as it is affecting almost every aspects of business, especially production. Globalization has enabled firms to look beyond their national boundaries and it has not only created new markets around the globe but also offered the opportunities to embrace sophisticated technology and managerial know-how which are in practice globally. However, the actual influence of globalization on the performance of the firms has been a matter to discussion and further analysis. Given the context, the study tries to examine the impact of globalization on the Indian economic growth and also on the financial performance

and productivity of the firms operating here.

In this study, "globalization" refers to the progressive phenomenon by which cross-border exchange of goods, services, ideas, information, technologies, human migration etc has been increased. Such phenomenon is supported by economic, social, political processes. It is derived by the international trade reforms and advancement in information, communication and transportation technologies [1] [2]. World Bank defines globalization as "Freedom and skill of individuals and firms to initiate voluntary economic dealings with residents of other countries".

1.2 Globalization and its Effects

Globalization is the growing integration and interaction among nations, society and people across the globe. Globalization transforms the way people live, drives companies to change their business practices, and encourages nations to adopt new national policies. The frequency of profound effects on different parts of the globe as a consequence of some event happened at some other place is faster than anybody would have imagined. For instance, the 1997 Asian financial crisis has seriously impacted the businesses and industries around the world [3] [4]and the 2003 severe acute respiratory syndrome (SARS), demonstrated how globalization allows for the fast propagation of the disease, severely affecting the service industry like airlines, hotel and tourism across the globe [5] [6]. From the economic perspective, globalization allows companies to outsource and find customers worldwide. The globalization of manufacturing/ production helps companies by achieving their economies of scale and scope [7]; [8]. Therefore, it is believed that globalization has altered the way we do business, however, such alteration and its direction (positive or negative) demands country-specific/ sector-specific empirical investigation.

The globalization phenomenon is so comprehensive and multifaceted that understanding the effects of globalization as a whole is challenging. Therefore, it has no single/ specific definition as it depends on the authors' background and also on the intent and scope of the matter chosen for discussion. In general, globalization refers to the economic, political and socio-cultural interconnectedness across international boundaries. In the economic sense, this includes reducing restrictions and thereby increasing flow on trade and investment. Free trade agreements of any nature i.e. bilateral or multilateral have spurred the free flow of people, commodities, information etc, thereby encouraging openness in trade and foreign investment. Such flows/ movements have accelerated the integration of developed economies. A significant number of emerging and developing countries have also benefited from the process of liberalization and increased trade openness which thereby further encouraged other to adopt globalization policies and practices. However, the benefits of globalization is far more than just development, the proliferation of foreign trade and cross border exchange of production's factors. Now the government not only takes into account the domestic factors but also the global factors that can affect its decisions while framing policies concerning nation's prosperity, stability and social equity. At the moment, the cost of keeping oneself away from the rest of the world is too high [9]. Thus in

order to help their country adjust into the globalization process the role of government is crucial and cannot be denied irrespective of the fact that it had led to considerable decline in government autonomy. Political Science concentrates on the role of international institutions like UNO, WTO, IMF, World Bank etc. Other disciplines like sociology explore the socio-cultural dimension of it by studying on the interconnection between different cultures/ societies.

Globalization process influences almost every aspect of life, for instance, it affects the environment, culture, political systems, economic growth and prosperity, human development etc.[10]. In today's era, the implications of globalization on daily life are apparent. The continuous advancement in information technology and advanced means of transportation are acting as a catalyst to further accelerates the globalization process as they are capable of connecting the people across the world, thereby allowing the swift sharing of knowledge, ideas and cultural practices [11].

Although globalization is not a new phenomenon it emerged more forcibly after World War II. In 1945, with the end of World War-2, the integration of economies started and this process got tremendous impetus with the integration of communist bloc countries in the global market economy after the cold war ended in 1991, as earlier they had intentionally kept themselves isolated from the west capitalistic economies. The collapse of socialist economic system and the success of capitalist economic system supported by international institutions like IMF and WB have led to market liberalization offered extra momentum to the globalization process. India signed the General Agreement on Tariffs and Trade (GATT) in the year 1947 and was one of the founding member country of GATT, however, it adopted the path of global integration by liberalizing its economy in the 1990s. As in early 1991 there erupted an unforeseen balance of payments crisis. Two years of political turmoil (1989-91) and the Gulf War (1990-91) with the subsequent oil shock accompanying it precipitated the 1991 economic crisis. It was the result of continued economic policy failures that accumulated since the 1980s. It was believed that the crisis was the tragic product of the inefficient economic policies that have been followed since independence. The belief that we have wasted valuable time and that the reforms are eventually our only option was the guiding force behind the reforms. Thus, a detailed plan for structural adjustment and reform was drawn up in June 1990. Since then, India's share in world merchandise plus services exports has improved significantly from 0.5 per cent in the nineties to 2.1 per cent in 2017. India's trade as a percentage to the gross domestic product in the year 2019 was around 39.55 per cent which signifies India as the fairly integrated and open economy [12]. Globalization has become a universal phenomenon and as a consequence the Indian economy as a whole and the firms operating here are inevitably affected by the process of globalization.

In contemporary times, the word "globalization" has become the buzzword. Measurement of globalization, for academician/ economist/ business experts and policymakers, was the core concern. The purpose behind the globalization's calculation may differ based on its application in various fields, so businesses may gain insight into the investment outlook, recent growth trends and the international business climate. For policymakers, globalization measure offers a global context within which policy strategies will become operational. Initially, the studies treated trade and financial openness as a globalization's proxy. These proxies can only provide a partial answer unfortunately.

In order to examine the effects of globalization and also to make greater use of it for empirical investigations, the need for a more detailed globalization metric took the form of a composite index. Later on, Many experts/ researchers tried to create different globalization indices with the aim of forming a single comprehensive composite index that covers different aspects of globalization (as discussed in chapter 3).

1.3 Globalization and Economic Growth

Globalization remains a major topic of debate/ discussions among political activists, researchers, corporate leaders, and governments. Since decades, globalization has been viewed as an essential and inevitable process and if embraced, it cures all the ills of world's economies. However, some saw this clearly as a destructive cycle that benefits the few while the majority suffer. Positive and negative effect is (will be) a matter of investigation, but this is certain that globalization has a profound impact globally, specially the way government and firms operate business. Irrespective of the arguments against or in favour of globalization, one can see this gigantic global forces that is changing the societies around the world, which have influences both developed and developing countries immensely [13][14]. Data from World bank revealed that the global merchandise trade has risen by 151.96 times since 1960 in current USD term, i.e. from US$ 252.657 billion in the year 1960 to US$ 38.394 Trillion in 2019. From only US$ 12.56 billion in the year 1970, the net FDI inflow hit the peak level of US$ 3.134 trillion in 2007 and still stands at US$ 1.631 trillion in 2019. Distinguishing the new surge of globalization, Thomas Friedman called it "farther, faster, cheaper, and deeper."

The scale and pace of growth as a product of the globalization process, in the continuously transforming world order, have motivated the developing economies to follow globalization practices. In 1991, India, as a late entrant, introduced policies of liberalization, privatization and globalization. The goal of the ambitious economic reforms initiated by the Government of India in the early nineties was to ensure the sustained and rapid growth of the economy by turning it more productive and competitive in the world. The bottom line was that technical innovation, improvement in efficiency and competitiveness as a result of openness would ensure fast economic development. The consistent structural and policy reforms in India enabled the businesses to start-up and expand their manufacturing capacity without much interference. Thereafter, Indian merchandise trade in current USD has grown from 38.175 billion USD in 1991 to 810.309 billion USD in 2019, which is nearly twenty-one times. The outcomes of reforms were evident in the form of huge foreign investment in the Indian manufacturing sector in the early nineties. From USD 73.54 million in 1991, the net inflow of FDI in India has risen to USD 50.611 billion in 2019. Subsequently, India has experienced a 10-fold rise in gross domestic product from 1991 to 2019.

Globalization has once again been the epicenter of discourse and has brought more focus to researchers/ economists/ policymakers as advanced economies like the United States and the United Kingdom, who have represented themselves as advocates of globalization and who have thus illustrated and spread the concept of globalization in the second half of

the 20th century are now suppressing/ limiting it. The determination of the President of the United States to revise trade arrangements with their trading partners and the desire of Britain to renegotiate their economic ties with the European Union as a result of their declaration in favour of the Brexit is definitely not in accordance with their former ideology of globalization. Now, the US-China trade war is reaching another point and hammering financial markets around the globe, thus in the long run, posing a great threat to globalization phenomenon that has grown in the past half-century or so.

In view of the changing circumstances, India is supposed to make an analytical assessment of its position on globalization. The study seeks to figure out empirically whether there is a relationship between the globalization and economic growth of India. Not only this it will also explore the causal connection between the different aspects of globalization (i.e. trade globalization, financial globalization, cultural globalization, interpersonal globalization, informational globalization and political globalization) and the Indian economic growth. The aforementioned details would address the need for a macro-level assessment of the impacts of various aspects of globalization on the overall economic growth, but by acknowledging the fact that it's not the nation that trade or invest instead firms do it is also important to analyze how this affects the country at micro-level (i.e. at firm-level).

1.4 Globalization and Firms' Performance

This segment deals with the issue of characterizing and determining the performance of firms? The landmark book "Relevance Lost – Rise and Fall of Management Accounting", written by Johnson and Kaplan in 1987 has made performance assessment widely popular [15]. In reality, Neely [16] found that over 3,600 papers/ articles were written between 1994 and 1996 on performance measurement, and coined the term "performance measurement revolution". Today, assessment of performance and performance improvement activities are widespread in all fields of industry and trade as well as within the public sector, including government agencies, NGOs and charities.

Firms are an important component of any economy in the sense that the growth and development of the economy depend largely on the success of their firms. Internal, as well as external factors dominant in the ever-changing global market, affect the business performance, thereby, businesses observe these crucial and complex factors consistently to manage and reduce their impact on firms' performance. Although firms try to control its internal factors like human resource, capital resource, production efficiency etc. for improving their financial performance but interestingly it also depends upon the external factor (like economic condition, political situation, factors like the foreign investment and technological advancement as the outcome of the process of globalization etc.) which are beyond their control. Therefore, the matter of the fact is that even if the firm is internally efficient, a bad external economic condition/factor may land the firm in a poor financial situation. Hence knowing the effect of external factors on the financial performance of the firm is an important and essential condition for the managers of the companies [17].

One of the most influential external factors under scrutiny is globalization and its ever-increasing scale and scope. Globalization has changed the dynamics of countries and also the way business function. Firms have adopted sophisticated business practices being generated out of the dynamics of globalization which has enabled firms to look beyond their national boundaries and develop new potential markets around the world. Companies operating internationally are less vulnerable to slowing demand across one or a few countries [18]. Also, firms take advantages of globalization in the context of production by realizing the economy of scale and scope, which not only improves the performance of the firms but also reduces risks. However, it's one side of the coin, on the other side, the firm encounters the increasing numbers of competitors and also, the intensity of competition associated with market uncertainties, has gone up exponentially.

Firm Performance is a relevant concept globally and despite its importance, there is hardly any agreement on its definition, dimension and measurement. To represent the firm's performance the most common choice has been the accounting measure of profitability. Many researcher have also recommended productivity or production efficiency as described by Venkatraman and Ramanujan [19] as another measure of firm performance. The study uses both accounting-based measures such as ROA i.e. return on assets, ROCE i.e. return on capital employed or ROI i.e. returns on investment and efficiency based measure as total factor productivity (TFP) to measure firm performance, separately. However, the study admits the fact that profitability and productivity are not the only two ways of measuring the firm's performance, as performance is a multi-facet concept.

The implication of the globalization process has been complex and varied from country to country. In response to the process of globalization, firms have consistently been restructuring themselves in different ways such as downsizing, rightsizing, adopting cooperative strategies like the merger, strategic alliances etc. [20]. Many renowned researchers from the field of international business like Clougherty [21], Eden and Lenway [22] and Clark and Knowles [23] highlighted the need for further testing the impacts of globalization on firms. Therefore, the focus is to understand the effect of different dimensions of globalization on the firms' performances in context to India which has not been explored much in the hitherto researches, especially, at the micro-level (i.e. at firm's level). To carry out the investigation, the firms' performance is depicted in two ways: first, as financial performance, or profitability, and second, as productivity. Hence, the study tries to examine the impact of globalization on firms' financial performance and also on the firms' productivity separately.

1.4.1 Globalization and Firms' Financial Performance

After the 1980s, global markets have undergone drastic shifts. A new and complex competitive landscape has been laid for all businesses by globalization-led liberalization of trade and capital markets, globally [24]. Many developments in the business climate have occurred with the movements to more interdependence between nations. The demands

of customers worldwide converged with the advent of global markets. Such developments have triggered two major impacts of globalization, global business opportunities and global market threats [25], [26], [27]. It is argued that Global business opportunities enable companies to gain access to global resources and penetrate into a variety of new foreign markets, thus improving business performance [28], [20], [29], [30]. Global market threats, on the contrary, may be harmful to a company's success because of an increase in the number of rivals and the level of competition, as well as increased market volatility [31], [28], [20].

Considerable literature is available showing the effects of macro-economic factors on firm profitability [32], [33], [34], [35], [36], [37], [38], [39], [40], [41], [42], [43]. Although often referred to in previous literature, empirical analysis on the effects of globalization on firm performance are scanty. Moreover, the studies analyzing the effects of globalization on the financial performance of firms of different sectors are even rare, thereby, questions about the relationship between firms' financial performance and a possible macroeconomic factor-like globalization are motivating and demanding essential empirical evidence. Therefore the present study seeks to analyze the dimension specific impact of globalization on financial performance of firms operating in India among fourteen different sectors.

The next rational step in the progression is to have a selection of firm-level performance measures. Although, because of its multidimensional properties, the concept of performance is a controversial subject in finance and business. In general, performance measures can be divided as being either accounting-based measures such as ROA, ROE, ROI, ROCE, and so on, or market-based metrics such as Tobin's Q. It should be noted, however, that the proxy/ indicator/ measure for performance chosen is entirely dependent on the study' objective. The study is intended to capture firm's financial performance i.e. profitability and thus the use of accounting based measures seems most suitable for the analysis. Therefore, The present study uses ROA, ROI and ROCE separately to capture the firm's financial performance, ignoring the ROE as it is vulnerable to financial engineering.

1.4.2 Globalization and Firms' Productivity

There is an inseparable connection between globalization and productivity growth. Because globalization, by fostering competition, will increase competitiveness and thus may lead to increase in productivity. Increasing productivity could also facilitate more globalization, providing companies with the necessary leverage for access to foreign markets. Over recent decades there has been a substantial reduction in trade barriers and it has further encouraged the global economic activities. Globalization promoted the transfer of technology, creating efficiencies among businesses, as well as dramatically increasing FDI flows and trade. FDI's infusion introduces advanced technology to the host countries, boosting productivity growth on the one hand and on the other, globalization changes society's way of life and consumer's taste and choice. The demand for development from modern economic activities has thus increased with the passage of time. Differences in productivity across sectors, as well as the shift in consumer

demand pattern, forces businesses to improve and update their resources to make their output performance better.

However, owing to the lack of an empirical study that examines these relationships, no conclusions can be taken about how the globalization contribute to firms' productivity. Studying the degree and directions of the relationships between the effects of globalization and firm's productivity would help us achieve a greater understanding of the directional effect and develop effective strategies to better handle these effects and help firms remain competitive in a globalized world.

1.5 The Rationale of the Study

The effect of globalization is not uniform among the nations and cannot be seen as a certain solution to a country's success. Pursuing a strategy of globalization, as it fully modifies the functions of a nation, is one of the few bold decisions taken by any government. It became more difficult even when the policies of globalization, not by preference but by compulsion, were embraced by a nation like India. Hence the need for an empirical analysis of available data in order to assess the impact of globalization on Indian economic growth is necessary after undergoing globalization policy since 1991.

Moreover, the micro-data study of firms has fully renewed the spectrum of evidence-based policy research, since the mid-1980s. With micro-data, econometric assessments on the attributes of the industry/ sector are much simpler to enact. In addition, it is easy to control the time-invariant attributes of firms if we create panel data in which individual firms are tracked over time, allowing the assessment of complex heterogeneous transformation of organizational activities. In other words, micro-data has enabled one to have a dynamic and flexible empirical framework for robust econometric analyses of firms.

Therefore, the research is not limited to exploring the impact of globalization on macroeconomic factors such as economic growth which present an aggregate picture of the economy but also tries to explore its impact on the firms' performance operating in India by carrying out the micro-data analysis of firms. As the study accredits the fact that it's not the country which performs economic activities such as trade or investment etc. rather firms do. Hence, the sector-specific findings can, however, differ, the study, therefore, sought to pursue the firm-level analysis of the impact of various aspects of globalization policies on the performance of firms operating in India in 14 different sectors. Firms are an indispensable component of any economy in the sense that economic growth and prosperity are primarily dependent on the success of their firms. Specific studies define firm's performance differently and the study chose two sets of relevant performance indicators based on accounting measures such as ROA, ROCE and ROI, as well as productivity measurement as total factor productivity, rather than only choosing one of many proxies to measure the performance of the firm. This allows us to examine the effect of different dimension/ sub-dimensions of globalization on firms'

financial performance i.e. profitability and firms' productivity separately. The study extended the analytical depth by determining not only how dependent and independent variables are associated, but also attempting to investigate short- and/or long-term causal phenomena between them. The research thus seeks to answer the following questions:

- Is there a connection between dimensions of globalization and the economic growth?
- Whether this connection causes the Indian economic growth in the short and/ or the long run.
- When evaluating pairwise, what is the direction of causality?
- Have the dimensions of globalization influenced the financial performance of firms' operating in India?
- Whether there exist any short or long run causality between globalization's dimensions and firms' financial performance.
- If exist, out of the fourteen sectors under examination, which sector's firms gained the most or least in terms of financial performance?
- Which aspect(s) of globalization, in particular, is/are responsible for causing the financial performance of firms?
- Have the dimensions of globalization influenced the productivity of firms' operating in India?
- Whether there exist any short or long run causal phenomenon between globalization's dimensions and the firms' productivity.
- Which sectors utilized the globalization phenomenon well and which lag behind relatively, in context to firms productivity?
- Which aspect(s) of globalization, in particular, is/are responsible for causing firms' productivity?

This is done with the intention to help the Indian government in formulating policies accordingly.

1.6 Organization of the Thesis

The thesis is divided into nine chapters. The "Introduction" as the first chapter provides the broader context and conception of the research. This chapter introduces the concept of research and outlines the question of research to be studied. The second chapter is "Review of literature" which lays the foundation of knowledge on different subject areas such as globalization, economic growth and firm's performance etc. considered for research and also covers the theoretical and empirical studies extensively conducted on the subject matter. This is not only to avoid the duplication of work but more importantly to build our understanding for further research on the area of study.

The third chapter, “Indices or Proxies,” addresses the indices/proxies that are used to describe different variables, as well as the explanations for choosing indices/proxies after comparing them to other available indices/proxies, with the overall aim of making the best predictions.

Chapter four “Dimension of Globalization and Economic Growth” is the methodological part of the study which concentrate on analyzing the dimension-specific impact of globalization on the economic growth. The chapter fifth and chapter sixth “Dimension of Globalization and firm’s financial performance” and “Dimension of Globalization and firm’s productivity” respectively covers the analytic part of the investigation at the firm-level. Further, sector-wise impact of globalization on the firms’ financial performance and firms’ productivity respectively are also assessed in the chapters.

The seventh chapter, titled “Findings of the Study” outlines the study’s main findings, eighth chapter ”Conclusion and Implications of the study” concludes and addresses the study’s implications and finally the ninth chapter ”Limitation and Future Scope of the Study” illustrates the limitations and proposes the future scope for further research. This chapter is then accompanied by the references section and the Appendix.

Chapter 2

REVIEW OF LITERATURE

This chapter is an attempt to review the recent and appropriate literature on economic growth, firm performance and firms' productivity and critical analysis of globalization and its effect on India at macro and micro levels. The literature has offered support to the study intent. It uses related literature, books, journals articles, websites, government publications particularly the reports and statistics etc. As per the nature and requirements of this study the literature is presented in three different sections. Literature exploring globalization and economic growth linkages have been reviewed in the first section, the second section illustrates the literature on globalization and its effects on firms' financial performance i.e. profitability and the literature about the impact of globalization on firms' productivity is presented in the third section.

2.1 Globalization Theories

The globalization believed to be in existence even in ancient time. Traders covered great distances in ancient times to purchase goods that were scarce and valuable for sale in their native lands. However, the word "globalize" was first used in the 1930s, according to the Oxford dictionary. It was included in the Merriam-Webster dictionary in 1951 [44]. By the 1960s, economists and sociologists were making enormous use of it. However, linguistic experts claim that the word "Globalization" got popularity in 1983 through the scientific literature of Levitt, whose article was published in Harvard Business Review at that time [45].

Wallerstein's World system theory define a world-system as a "multicultural territorial division of labor in which the production and exchange of basic goods and raw materials is necessary for the everyday life of its inhabitants" [46]. They argued that there is a global economic system under which certain countries prosper and others are exploited. The

social mechanism of global inequality is highlighted in the theory. [47], [48], [49, 50], [51] etc. perceive globalization as a historical process and it connects with almost all aspect of life. They believed that without referring to the world system in which they belong, a nation economic system cannot be understood. The authors describe globalization as the product of the evolution of social relations; however, the definitions do not include the whole phenomenon.

Zinov'ev [52], Therborn [53], Mironenko [54] emphasized on the economic aspects of globalization. According to Therborn and Zinov'ev's, the world is experiencing its sixth wave of globalization, which has been caused by the need to minimize protectionist policies, reduced costs, and the advancement in Information and Communications Technology (ICTs) across the globe. Robertson [55], Castells [56], and Grinin [57], see globalization as a dynamic and unifying force that affects all aspects of life and a forecast of potential globalization consequences is offered. They presented the mechanism of economic and cultural unification around the world. In his theory, Robertson highlighted the cultural dimension of globalization and proposed that mass information flow is causing the global dispersion of social process.

Some argue that the industrial revolution was the most profound development in the world's history [58]. Emphasis on manufacturing as an outcome of the industrial revolution, particularly in Europe encouraged the countries to go for the trade. Thereafter, subsequent advancement in transportation and communication technology eased the trade further. Rapid industrialization followed by a high degree of specialization in manufacturing enabled the nation to flourish in specific areas of manufacturing and this eventually allowed the nation to produce vast quantities of commodities. Economic integration was the only way to find new markets for their products. The shortage of funding and the lack of technological advancement has pressured the developing countries to authorize imports products to access their markets. The rapid modernization of developing countries also supported the process of globalization as the people pressurized the government to maintain a smooth flow of imported products. Moreover, developing countries have had the option of selling their products in developed countries. Hence, these events acted as the catalyst to speed up the process of globalization by forcing the countries to liberalize their economic policies.

Thus in the current context, Globalization refers to the phenomenon in which economies, people, and firms are becoming more integrated across the globe as factors such as information and communication technology (ICT), transportation & infrastructural development, media, and global finance make it possible for products, services, innovations, and people to transcend conventional national borders. Here, globalization in the economic sense represents the interconnectedness of economies around the globe fostered by free trade. Increased contact between diverse cultures as an outcome of globalization is referred to as the social phenomenon of globalization. The cultural phenomenon involves sharing of knowledge, beliefs, traditions and artistic practices between cultures and it seems to move towards a common, more integrated homogenous global culture. Globalization has diverted focus to intergovernmental/ international bodies such as the United Nations, the World Trade Organization, ASEAN, SAARC etc. referred to as the political phenomenon, primarily focused to facilitate international agreements and minimize conflicts among countries.

2.2 Economic Growth Theories

The mercantilism growth theories derived from the leaders of mercantilism in the 15th century and lasted until the 17th century. The French economist Antoine de Montchrestien brought the word "mercantilism" into intellectual discourse [59]. They consider wealth creation as the primary cause of economic prosperity and also an essential and integral part of the public policy of the state [60]. In the late 18th century, a group of intellectuals proposed "Physiocracy theory" in France and became popular. The Physiocrats' main achievement was their focus on productive work and were the first one to consider labour as the only source of value. However, they referred to labour as agricultural labour, ignoring the manufacturing and other non-agricultural labour. Moreover, they criticized government involvement in economic activities [61].

The most prominent and excellent classical school representatives are Adam Smith (1723-1790), David Ricardo (1772-1823), Thomas Malthus (1766-1834), Karl Marx (1818-1883), John Stuart Mill (1808-1873), Jean-Baptiste Say (1767-1832) among others [62]. Before 1776, there were political economists, they proposed many theories and many of them had economic content in it, however, economics came out as a separate discipline after Adam Smith published a book widely known as "An Inquiry into the Nature and Causes of the Wealth of Nations". The crux of Smith's famous book was that the wealth of nations was not based on gold, but on trade. This was based on the ground that If two nations trade with each other, it is obvious that both get the benefit and hence, the overall wealth of both the nation increases.

Smith campaigned against mercantilism and he promoted laissez-faire economic policies which prevents from government interventions in the economy. He gave importance to the ability of market forces to control themselves and advocated to minimize the role of government in regulating the markets. He believed that economic liberty would result in economic progress. In addition to that, the past studies considered the worth of gold and silver possessed as a nation's wealth. Smith argued that the basis for measurement should be their level of production and commerce. This idea became the basis for the development of a GDP index to measure the wealth of a nation.

David Ricardo is regarded as the first economist to present classical theories in a coherent body of economic study. David Ricardo [63] built on Smith's growth model and changed it by adding the diminishing return to land. He argued that like labour, the land is also accountable for output growth as land is "variable in quality and fixed in supply". Therefore more land is required for further growth. However, as the land is also limited, the rent and wage increases and leads to the reduction into the profits of capitalists and limits the growth. Ricardo also believed that this downturn of growth could easily be regulated by the technological innovation and the specialization driven on by the trade.

Malthus [64] argued that population increase was not so easily managed and would rapidly outpace growth and inflict widespread suffering. John Stuart Mill changed little on Ricardo, maybe only to highlight the need to regulate population growth in order to resist the slowing growth. The theories of Adam Smith, T. R. Malthus and David

Ricardo laid the foundation for capitalism.

Karl Marx [65] presented a different picture of the growth model than the Classicals did before. In particular, Marx's "main contribution" to economic science comes in the 10-paragraph section of "The Communist Manifesto", in which he explains how the economic development induces differences within the social classes i.e. labours and capitalists, often contributing to a fight for political influence. Joseph Schumpeter [66], an Austrian economist developed the idea of creative destruction from Karl Marx's work and popularized it as the philosophy of economic innovation and the business cycle. He conveyed that there is an obvious conflict between the old and new technologies, as new innovations will make the old production practices obsolete. He pointed out that the economy which focuses on reproduction and follows the traditional production structure fails to maintain substantial growth in national wealth. Only the advancement of innovation will increase the national outputs.

Aggregate demand is the fundamental of the Keynesian growth model developed in the 1930s, as the increase in aggregate demand can lead to economic growth. He demonstrated that the fall in income at the time of recession and due to the rise in unemployment leads to a decrease in spending, savings and investment. In such a situation, he advocated for government intervention to boost the aggregate demand by implementing fiscal and monetary policy to revive economic activities. That includes lowering of taxes, public spending on infrastructure, lowering interest rates etc.

Roy Harrod [67] and Evsey Domar [68] proposed their economic growth theory in line with the Keynesian growth model. The outcomes of both the theories were so similar that they, later on, became known as the theory of Harrod-Domar. He argued that a low level of growth is linked to a reduction in saving rates. Low saving results in lower investment, lower marginal efficiency of capital and then finally, reducing the overall growth rate. The only ever-growing stock of capital allows the economy a dynamic equilibrium between aggregate demand and aggregate supply. To ensure sustainable growth of investment, the state can regulate the portion of savings in national wealth or the pace of technological innovation, thereby deciding the efficiency of capital.

If economic growth is a complex phenomenon, can the same factors decide its intensity in the future in the same proportions? Classical economics emphasized on investment and increasing production as the crucial elements of economic growth. Throughout the first half of the twentieth century, neoclassical economics recognized land, labour and capital responsible for economic growth. This was enough to illustrate the drivers of economic growth in developed nations. More utilization of these factors will lead to higher economic growth. Solow [69] in his work on united states recognized technological advancement as a key driver of growth in the United States economy beside other factors like land, capital and labour.

Solow considered the rate of population growth and technological advancement, the factors vital for long-run economic growth as the exogenous factors. On the contrary, the "New growth theory" developed in the 80s and 90s considered

technological innovation as endogenous factors and advocated for investment in technology and human capital. The theory of endogenous growth, argues that investing in human resources, knowledge and innovation lead greatly to economic development. A knowledge-based economy produces positive externalities and spillover effect that would contribute to economic growth.

2.3 Globalization and Economic Growth

With the advent of globalization, shifts in the global economic structure have also been of concern to policy-makers, economists, researchers and academics. The effect of globalization differs among countries and the stage of development they are in, as well as the complexity and availability of their resources, therefore, provide strong foundation for empirical investigation. Several pieces of work have been carried out to examine the impact of globalization on the economic growth of different countries.

A large number of studies in the initial stages emphasized only on the economic aspect of globalization to represent globalization as a whole and they consider trade intensity or trade openness as a proxy to calculate it. Afterwards, few have considered financial openness along with trade openness to measure globalization. With the evolution of the subject matter and recognizing the far-reaching ramifications of globalization, for example, socio-culturally, economically, politically, etc., scholars have sought to measure globalization in the form of different indices rather than just a narrow description of it. Many of the key works in the field concerned as well as the creation of the globalization index has been discussed here.

Rodriguez and Rodrik [70] in their study scrutinized empirical works of Dollar (1992), Ben-David (1993), Sachs and Warner (1995) and Edwards (1998) to test the relationship between trade barrier and economic growth. They conveyed that openness and growth relationship is still an open question and require a suitable answer. They would not like to leave the reader with the impression that they agree that trade openness in the form of lower tariff and non-tariff barriers is essential for economic development. As they found no reliable evidence that proves open trade policies are related to higher economic growth at least for the post-1945 period.

Empirical investigation in 2000, Jang considered five indicators/ proxies i.e. real government spending, the supply of money, real output, foreign price shocks, and openness measures to examine the influence on the growth of East Asian economies by using Vector autoregression (VAR) model [71]. Jang in 2000 and latter Stiglitz in 2003 [72] reported similar results and highlighted the government's role and the capabilities of the country in coping with the phenomena of globalization. They concluded that, if well handled, globalization could be a potent force for growth.

Lee et al. [73] formed a panel of dataset of 100 nations with 8 cycles of 5 years each, spanning from 1961-65 to 1996-2000, with a view to develope a connection of openness with growth. They used real per capita GDP growth as an

indicator of economic growth. The proxies used to reflect the openness were the size of trade (the proportion of trade to gross domestic product), the tariff index, import duties (as a percentage of total imports) and the black market premium (the official exchange rate and black market rate difference), and found that most openness indicators established a positive impact on growth, though the results are smaller than the results produced by ordinary least square model.

On the same line, Aka [74] employed the three-variable vector autoregressive model on the annual data of Côte d'Ivoire for the period 1969-2001. They computed economic growth as the natural logarithm of the GDP, openness as the logarithm of the share of imports to GDP and globalization as the natural logarithm of the share of international trade in GDP. The results established long-run cointegration between GDP, openness and globalization. Globalization has negative effect on growth, and while there is a positive influence of openness on growth in the short term. However, Increasing openness and globalization have not made a positive contribution to the economic growth of Côte d'Ivoire in the long run. This has been one of the few studies which negate the effect of globalization on economic development.

Over time, while the calculation of globalization remains based on a single metric, scholars have started to calculate economic growth on the variety of parameters. Leong [75] developed a panel data set to perform an empirical investigation on India and China to check the relationship between openness and economic growth for the period 1970-2003. The natural log of both trade and foreign direct investment are taken as proxies for openness and the natural log of GDP is used as a proxy for growth. The findings of the report provide a positive impact on growth concerning the rise in exports of both nations. The result dispels the popular review of openness policy adoption has a multiplier effect on economic growth in the sense that an increase of one percentage point in the rate of growth of trade or FDI has a rise in the economic growth rate of these countries below one percentage point.

In order to obtain the greater insights about the association of globalization with economic growth, the complexity of the research methodology developed over time. Zhuang and Koo [76] have introduced reliable panel data and an empirical growth model to test the influence of globalization on economic growth. The list of the panel comprises 19 developed countries and 37 developing countries, a total of 56 countries under-studied for the period 1991 to 2004. The research used the annual time series data of each country for the variables considered for examination, which included GDP growth rate, labour, capital, economic globalization index, human capital and technology. Economic growth, human capital and technology were computed by GDP growth rate, the growth rate of tertiary school enrollment and the high-technology exports as a ratio of manufactured exports. Moreover, the study assigned equal weight to foreign direct investment, portfolio capital flow and trade to construct an index to measure economic globalization. The assessment outcome clearly confirms the beneficial and significant effects of globalization on economic growth across all countries. China and India benefit the most from globalization, followed by developed countries and then the developing countries. In addition, capital growth, human capital and technology make a major contribution to economic growth.

Afjal [77] studied the time-series dataset from 1960 to 2006 to evaluate the impact of globalization on the economic

growth of Pakistan by employed the OLS regression and vector error correction model. Trade openness and financial integration have been used as elements, reflecting globalization and the study used real GDP to represent economic growth. They used gross capital investment in place of capital stock, as the data for the capital stock is not available for most developing economies. Additionally, in order to understand their relative value to economic growth, gross capital investment is further divided into the public sector and private sector investments. Two indices of openness were used to assess the degree of integration. One was the ratio of trade to GDP, and the other was the ratio of the sum of capital inflows and capital outflows to GDP. The study showed that the existence of long-run cointegration among the variables. Public sector investment and private investment are mutually reinforcing, and in turn, would promote economic growth. Results showed a significant association of trade openness and financial integration with economic growth. He also concluded that liberal trade policies and financial integration would promote global prosperity in the long run.

Polasek and Sellner [78] investigated globalization-growth relations using the Spacial Chow-Lin data interpolation method on 27 European Union countries covering the annual data from 2001 to 2006. To analyze the cross-section of countries, they use three variables as trade openness, a technological transfer and the regional integration to represent globalization. To capture the regional integration variable they used European union structural fund expenditures and used FDI inward stock as a percentage of GDP and total trade as a percentage of GDP as a proxy for technology transfer and trade openness respectively. They reported the positive effect of globalization on economic growth in the region, primarily due to trade disparities and foreign investment.

Moghaddam et al. [79] used foreign investment and merchandize trade as globalization's indicators for the evaluation and analysis of economic growth in eight nations, i.e. India, Turkey, China, Singapore, Malaysia, Japan, Brazil and Iran. The findings of the research revealed a strong connection between FDI, exports and imports and the economic growth rate in the countries under evaluation. China and Singapore witnessed strong economic growth, due to the massive inflow of FDI and merchandise trade. The findings of the report affirm the statistical association of FDI and GDP with economic growth in the developing nations.

Ray tries to determine whether Indian economic development is a long-term outcome of globalization, using an econometric model [80]. He used annual time series data for study throughout the period 1990-91 to 2010-2011. And to evaluate the dataset, he used the ordinary least square method, the Granger causality test and the error correction model. The regression has shown a positive impact on economic growth through private investment, human capital and openness. Financial integration illustrated an insignificant negative effect on growth. Public investment, although insignificant, has had a positive impact on economic growth. All the explanatory macroeconomic variables were found to have a long-term relationship with growth, confirming that since 1991, globalisation was one of the reasons for Indian economic growth.

With more and more work on macro-level indicators such as aggregate growth, the emphasis turned to discover the

effect of globalization on various industries within the economy. In order to investigate the impact of globalization on the growth of the Nigerian economy's core sectors, Umaru et al. [81] examined pre- and post-globalization data set. The comparison period used for comparative analysis was 1962-2009 and the method used for the study was Simple Annual Average Growth Rate Technique. The results revealed that the impact of globalization varies across sectors of the Nigerian economy. The study showed the positive impact on sectors such as agriculture, transportation and communications, but at the same time showed a negative impact on the solid minerals, manufacturing and petroleum sectors. Nevertheless, the cumulative effect of globalization has yielded promising effects on the output of the Nigerian economy as calculated by GDP.

Meraj [82] used annual statistics on exports of goods and services, imports of goods and services and GDP for the period 1971 to 2005 considering 2000 as the base year. He took the natural logarithm of all the three series and employed an ADRL model and the Granger causality test to examine the impact of globalization on Bangladesh's economic growth. The time-series data set used was from 1971 to 2005. Results provided a bi-directional causality between exports and GDP, which means that exports facilitated economic growth in Bangladesh. The study proposed that more attention on exports would lead to economic growth in least developed countries such as Bangladesh, subject to tight import restrictions.

The work evaluated above concentrates mainly on globalization as a single factor, such as trade openness, trade as a percentage to GDP, overall investment, and so on. However, discussing globalization using one factor/ variable at a time may not present the complete picture. Hence, attempts have also been made to create a comprehensive index that calculates globalization specifically and accurately. Nevertheless, the two well-known and widely used globalization indices are the Kearney Globalization Index (KFP) and the KOF Globalization Index. Literature also includes the works that used these indexes to calculate globalization for empirical research.

Dreher [83] was one of the pioneers works in the area of globalization, where globalization has been used as an index focusing on multiple dimensions. He developed a composite globalization index with three main components, i.e. economic integration, social integration and political integration. The study aimed empirically to examine the effect on economic growth of the overall index and the sub-indexes of the of globalization. A Panel data model for 123 nations, covering annual data from 1970 to 2000 was formed and the findings showed that the overall globalization index was positively influential, which means that globalization actually speed up the growth.

Work using globalization as a composite index has been well received by numerous researchers. Rao et al. [84] used the KOF globalization index formed by Dreher and adapted the Solow Growth Model [69] to measure the steady-state growth rate projections for Thailand, Malaysia, India, Singapore and the Philippines. Empirical analysis has shown that countries with better policies of globalisation have stronger, steady-state growth rates (SSGRs). Studies have shown that the impact of globalization is not consistent among all nations. Consequently, out of the five countries under research, the highest and lowest growth effects of globalization have been noticed in India and the Philippines

respectively.

As the globalization index became comprehensive, covering various aspects, such as economic, social and political aspect, it provided researchers with an opportunity to investigate the effect of the different dimensions of globalization on the economic growth of a nation. Chang and Lee [85] stressed the political party's role in shaping the relationship between globalization and economic growth, as the political party's ideology can be a strong indicator of government policies. They tried to verify it empirically by taking into consideration one of the variables, along with other independent variables, such as the aggregate globalization index and its sub-indices. For this reason, they used Pedroni's panel co-integration techniques of the panel of 23 OECD countries from 1970 to 2006. The results illustrate the unidirectional causality of globalisation as a whole, the social and economic component of globalization with growth in the long run, but there was very weak evidence of short-term causality. The study further presents evidence of the political party's agenda to shape economic growth. Right-wing political parties has had a positive effect on economic growth. This can be explained by the fact that right-wing parties, in the OECD countries, are considered to be supporters of trade.

Mutascu et al. [86] used the annual time series data of real annual GDP growth rate and the globalization index covering the period 1970 to 2007 and applied the unrestricted VAR framework to examine globalization in Romania. The findings revealed that if a nation wishes to achieve maximum economic growth, it must become more global.

Leitao [87] studied the association between economic growth, globalization and trade in the United States. Intra-industry trade was adopted as a new measure to illustrate exports that, along with foreign direct investment, the globalization index as the independent variables and GDP per capita as a dependent variable from 1995 to 2008. Results reported that foreign trade in identical goods and services (Intra-Industry Trade) encourages innovation and economic growth. Foreign direct investment, economic globalization, cultural globalization and political globalization are positive and statistically significant, i.e. the independent variables foster economic growth.

Over time, the KOF index got its place and it was accepted well because it was not only comprehensive but also getting updated regularly. It also made possible to the researcher to test a specific type of globalization, like economic, social or political, as well as overall globalization. Samimi et al. conducted one such study in order to assess the impact of economic globalization and complementary policies on economic development. The GMM estimator was used to conduct a panel of 33 OIC countries for analysis [88]. The research has verified the positive impact of economic globalization on growth. Also, the implications of economic globalization are more pronounced in countries with high rates of human capital and well-developed financial systems. Economic globalization also accelerates growth indirectly through complementary policies.

Ying et al. [89] used a fully modified OLS regression model and a panel co-integration study to analyze the globalization-growth linkages of ASEAN countries. The data gathered contains annual time series data for the period

1970 to 2008. They considered the economic globalization, political globalization and social globalization of the KOF index to evaluate the effect of globalization on growth. The outcome revealed the major positive effect of economic globalization on growth. The effect of social globalization has been negative and statistically significant, while the political aspect of globalization has had a non-significant negative influence. Economic globalization has seen to be more successful than political or social globalization in increasing economic growth. According to the ASEAN countries' experience, Policymakers should be more instrumental in promoting international trade and foreign investment, while also attempting to increase participation in international economic organizations and adopt outward-looking policies that facilitate collaboration with other economies.

Kilic [90] used the panel data analysis for 74 developing countries to check the impact of economic, social and political globalization on growth. He used fixed effects least square method and the Granger causality test, and the data collected for the study covers the period from 1981 to 2011. The empirical results showed that economic and political globalization has increased the economic growth of 74 developing countries under review and, on the contrary, social globalization has formed a negative correlation with economic growth.

Savrul et. al [91] evaluated the panel data set of 10 ASEAN countries for the period 1970-2015 to determine whether the globalization process has an impact on development. Findings had emerged in favour of the fact that globalization has a significant impact on the ASEAN countries' economic growth.

Olimpia et al. [92] studied the correlation between globalization and the growth of the Romanian economy, and the study's annual data ranged from 1990 to 2013. Titalessy [93] examined a group of twenty Asian Pacific countries for the period 2000 to 2014. The two studies showed identical findings. The findings showed a statistically significant and positive correlation of the economic and political aspect of globalization with economic growth. Social globalization has had a negative effect on economic growth in both cases.

With the passage of time, the KOF index begins to improve itself, which now contains three new indexes for the calculation of globalization as a whole, i.e. it now has six dimensions since economic globalization has split into trade globalization and financial globalization; social globalization has split into three as interpersonal globalization, informational globalization, and cultural globalization, and political globalization is the sixth. According to the author's understanding, the present is the first to examine the relationship between globalization and India's economic growth using all six dimensions of globalization. It will also not only test but also explore the causal relationships between the different aspects of globalization and India's economic growth.

2.4 Globalization and Firms' financial Performance

For several decades now, a large number of economies have become integrated, and the process of convergence is still ongoing, with various nations being a part of this newly evolved global economic order at different times. In a way, globalization seems to be the ultimate aim, and thus the phenomenon of globalization is a matter of interest to all scholars, encouraging them to examine its impact on the economy, especially on companies operating in these economies.

A broad spectrum of literature studied the impact of globalization on different macro-economic variables such as economic growth/development, unemployment, inflation, education, health etc. The effect of economic globalization [83], [94], [95], [96], [84]; [97], political globalization [98], [99]; [100], [101] and social globalization [102], [103] individually on economic growth/ development has also been studied by the researchers. The literature includes enough studies on the effect of globalization and its cultural, political and social aspects on economic growth/development for both developed and developing economies. Surprisingly, studies exploring the interaction between globalization and firms' performance are much less prolific. This work is one of a few empirical studies that examine the effect of the multiple dimension of globalization on the performance of firms.

Globalization as a global phenomenon undoubtedly impacts businesses and to analyze the effect of globalization on firm performance, Thoumrungroje [104] surveyed the total of 208 companies, i.e. 58 companies from the united states and 150 companies from Thailand, from the electronics and chemical sectors and observed that global business prospects favour firm profitability and global competitive pressure influence the performance negatively. I Globalization has been described as a double-edged sword for its effect on firm performance, in the sense that it emphasized the willingness of companies to leverage on opportunities and handle the threats that exist in the global markets.

In an effort to explore the impacts of globalization on firm performance, Kraemer [105] used a combination of qualitative and quantitative approaches to evaluate 2139 firms from 10 countries – Brazil, Denmark, China, Germany, France, the United States, Mexico, Taiwan, Singapore and Japan. By following a stratified random sampling process, data were obtained by a telephone survey technique from top-level executives of firms and for the analysis of data used factor analysis method. The study expressed firms' globalization through five parameters such as whether the firm has a head office abroad, whether the firm has its other facilities abroad, the proportion of firm's international sales to its total sales, the proportion of international procurement to the total procurement and The level of competition from foreign competitors. Similarly, they have expressed firm performance with parameters like effective internal processes, increased efficiency of employees, increase in sales, increase in business area, better customer service, enhanced overseas sales, reduced procurement costs, reduced inventory costs, better cooperation with vendors and Improved competitiveness. The study reported that the net effects of globalization were positive for firm

performance and emphasized that the impact of globalization is more positively significant in case of B2B e-commerce use.

Sledge [106] through his study evaluates the impact that globalization has on the firm's performance of two groups of firms such as fifty multinational corporations each from developed nations and developing nations. The five-year average of sales growth rate and the net income growth rate for the period from 1997 to 2001 were used to measure the firm performance and to compute globalization, he used indicators like foreign sales as a a percentage to total sales, foreign assets as a percentage to total assets and foreign employees as a percentage to total employees. The findings show that globalization does have an effect on the firm performance of both categories of firms in the anticipated direction. Greater internationalization leads to higher sales and revenue for these companies, which, in effect, leads to greater profit opportunities. In both samples, all three globalization measures impact firm performance.

Asiedu and Freeman [107] utilized firm-level data of 4055 SMEs of the United States to investigate the influence of globalization on their performance. Data for 2003 for the indicators like total export and export of SMEs' to represent globalization and total firms' profit and the proportion of sales to asset for measuring firm's performance were collected and computed. He came to the conclusion that globalization has a negative effect on the performance of SMEs.

Georgiou [108] worked on the data related to the non-financial corporation of OECD countries- Belgium, Austria, Denmark, France, Finland, Germany, Norway, Ireland and Netherlands, to form and analyze the unbalanced panel data-set for the period 1999-2009. The study used net return on equity after tax to measure company performance and total trade to GDP at current prices to represent globalization. The paper demonstrates that globalization has a positive effect on the profitability of corporations in Europe.

Akinola [109] used both purposive sampling and random sampling techniques to collect the data of marketing heads of banks and banks' customer and collected both primary and secondary data for analysis. The time period chosen for the study covers the years from 1999 to 2007, as this period was known for the reforms carried out in the Nigerian banking sector. A sample size of 1520, composed of 50 top management personnel, 220 marketers and 1,250 customers. The statistical tools employed to analyze the data were Statistical Package for Social Sciences (SPSS) and econometric packages like E-views. He took profit before tax as a proxy of the performance and represent globalization as the composition of foreign ownership in the shareholders' funds of twenty-five Nigerian Banks. The higher profitability was attributed to the broader business reach of banks in the region, both locally and internationally. The analysis concluded that globalization has greatly increased the performance of banks in Nigeria.

Karadagli [110] aimed to examine the effect of globalization and its specific dimensions on stock market returns for seven emerging economies such as China, India, Brazil, Indonesia, Turkey, Russia and Mexico. The work is carried out using annual data covering the time span from 1998-2009. Results of the random effect panel estimation revealed that overall globalization boosts firm performance and also recorded the positive effect of the economic, political and social

aspect of globalization on the company's stock, while economic globalization was not statistically significant. Such results indicate that the country's increasing degree of globalization not only has performance-enhancing consequences for firms working in such an environment but also creates increased opportunities for emerging countries to keep up with developed countries.

Haghi et al. [111] used the stock market index to quantify the firm's performance for each country. The goal of the study was to evaluate the effect of economic globalization on the firm performance and for that they selected firms from 12 different countries in Asia i.e. India, Iran, Saudi Arabia, Singapore, Malaysia, China, Indonesia, Russia, South Korea, Philippines, Pakistan and Sri Lanka. This research is carried out using annual time series data for the period from 1997 to 2013. Globalization has led to an increase in the firm's stock. Subsequently, political globalization represented a positively significant effect on the firm's stock. Assuming stability of the other factors, if economic globalization raises the stock market of these countries also goes up.

Chibuzo et al. [112] used cross-sectional survey method to obtain the data from a total population of 465 personnel from the HRM / administrative divisions of eight registered companies from the selected manufacturing firms in Port Harcourt to evaluate the relationship between globalization and performance. Participants were chosen using a simple random sampling technique. Hypotheses are checked with the Spearman rank correlation coefficient with the help of Statistical Package for Social Sciences (SPSS). In the results of this study, globalization greatly affects the performance of manufacturing firms in Port Harcourt. Global liberalization is seeking to open up markets fully to foreign companies. It is a mechanism whereby international economies allow for privatization and restructuring of their markets for increased profits and increased collaboration between private firms.

In another study, Akdogan [113] studied the effect of globalization on the operational efficiency of 142 Turkish listed companies of which 56 are SMEs. The effect of globalization on the operating efficiency of Turkish listed firms is studied for the period 2001-2010 by means of a pooled panel study of annual data. The study showed a decrease in operating profit as a result of the globalization of Turkish companies. Also, the substantial decline in sales and the cost of goods sold is apparent as a result of increased competition.

The literature review recognizes the diverse and varied effects of the economic, political and social dimensions of globalization on the performance of firms across countries. Empirical work in this area is limited and, in particular, in the case of the developing country such as India, it is rare and thus requires an empirical investigation. In several respects, the conceptual framework of this study is distinct and unique from the existing studies.

- First, the firm-level analysis focuses on the influence of a different dimension of globalization on firm performance by using ROA, ROCE or ROI as their proxy for firm performance. Most of the previous research, though limited, used the stock market returns of firms as a measure for firm performance.
- Second, the study analyzes three different models using three separate metrics (i.e. ROA, ROCE or ROI) of

firm performance that cross-check and verify the findings obtained.

- Third, the work examines the effect of the economic dimension, political dimension and social dimension of the globalization on the performance of India's firms, rather than merely examining the effects of overall globalization on firm performance as demonstrated in previous studies. Not only these, but the present analysis also aims to establish the causal effect, if any, between firm performance and the different dimensions of globalization.
- Finally, by analyzing the effect of globalization on the performance of firms in diverse sectors of the Indian economy, the study aims to add valuable knowledge to the existing literature.

2.5 Globalization and Firms' Productivity

Since the development of the Cobb-Douglas production model in 1928, the production system between input and output has become a key area of inquiry. Since then on, there have been considerable debates, advancements and scientific research in this field. Following early attempts by Tinbergen [114], Stigler [115] and Solow [69] to establish the idea of Total factor productivity, growth accounting started to progress with the contributions of various scholars in the 1960s, including Kendrick [116], Denison [117],and Jorgenson and Griliches [118],. Economists have long reported that the rise in inputs to output, such as working hours of labour or the amount of capital invested, will explain only a portion of the growth of the economy. The unexplained portion, probably reflecting advances in production processes and technology, is attributed to all factors of integrated production generally referred to as total factor productivity growth. The role of globalization in driving economic growth, especially in fostering productivity, presented researchers and economists with an opportunity to examine changes in the aggregate productivity of countries through the adoption of globalization policies.

Neoclassical growth models support the idea that foreign trade influences economic development. Higher trade volumes increase productivity by the deployment of more sophisticated production technologies, which improve total factor productivity and fuel growth. Through developing manpower and acquiring skills, FDI enhances the stock of knowledge.

Several arguments have been discussed in the empirical literature regarding the impact of trade liberalization on the production of the manufacturing sector. The argument that trade liberalization has a negative impact on the growth of the manufacturing industry; in the light of the fact that industries facing substantial scales of increased import competition due to trade liberalization are witnessing a decrease in industrial production, Katrak [119] for India, Haddad et al. [120] for Morocco and Foroutan [121] for Turkey has been endorsed. In particular, Semenick and Morrison [122] thought that reducing trade protectionism could lead to a downturn in industrial production, as intense competition could cause manufacturers to exit the market rather than expand.

The assumption that the liberalization of merchandise trade has a positive impact on productivity growth in the manufacturing sector has been supported by studies of Weiss and Jayanthakumaran for Sri Lanka [123], Urata and Yokota for Thailand [124], Kim [125] and Dongsuk [126] for South Korea, Kristiono [127] and Sjoholm [128] for Indonesia, Weiss [129] and Tybout & Westbrook [130] for Mexico, Rodrigo [131] for Chile, Harrison [132] for Cote d'Ivoire, and Goldar and Kumari [133], Krishna and Mitra [134], Madheswaran et al. [135] for India.

Weiss used various indicators to measure productivity and the extent of liberalization to analyze the effect of trade liberalization on the productivity of the Mexican manufacturing sector [129]. The study consists of three different periods: period 1 (1975-80) for early liberalization at the end of the 1970s, period 2 (1980-82 to 1984-86) for the re-imposition of many other protective measures at the beginning of the 1980s, and period 3 (1984-6 to 1987-88) for the major reform after 1985. The study carried out a regression analysis and observed a positive, but weak effect on productivity.

Sharma et. al. [136] designed an econometric model to analyze factors linked to growth in productivity and applied the OLS regression on the pooled cross-section data-set for the period 1972-1973 to 1993-1994. This is to test the claim that output growth will result in increased TFP growth as it enables economies of scale to be exploited. As production increases, the utilization of resources improves and the operating cost decreases. From their study of the Nepalese manufacturing sector, concluded that neither trade liberalization nor export prospects had an impact on productivity.

Abizadeh and Pandey [137] used the data-set of 20 OECD countries, covering the period from 1980 to 2000, to analyze the connection between trade openness and productivity growth. Countries as a whole included in this study observed an improvement in total factor production attributable to trade openness, but the impact of trade openness among sectors (i.e. Agriculture, Manufacturing and Services sector) revealed substantial variations. Of the three, only in the service sector, trade openness have a favorable and significant effect on the TFP growth.

Rath and Parida [138] used a panel regression to investigate the effect of trade openness on the TFP growth in five South Asian countries – India, Pakistan, Sri Lanka, Bangladesh and Nepal. The annual country-wise data used for analysis covered the year span from 1980 to 2011. The findings identified long-term causality, extending from trade openness to TFP growth and bi-directional causality between the two in short-run. The study suggests that low-income countries in South Asia may increase their degree of openness by liberalizing their trade policies, such as licensing regulations, and lowering trade barriers which in the short-run, will raise overall productivity.

Several investigators have provided data to understand the effect of foreign investment on TFP. Borzenstein et al emphasize FDI as an important method for technology diffusion [139]. Imports of high-tech products and the adoption of new technology are number of ways that multinational companies are encouraging. He also promoted a high degree of human capital needed to ensure increased productivity.

The data from Venezuela, UK, Japan and Norway was analyzed by Aitken and Harrison [140], Griffith [141], Fukao

and Murakami [142], and Balsvick and Haller [143] respectively. The results of OLS regression concluded that the productivity of companies is likely to increase after foreign investment/ acquisitions.

Mello [144] analyze the effect of foreign direct investment (FDI) on the recipient country's total factor productivity growth and for investigation he prepared a panel of data-set from OECD and non-OECD countries for the period 1970-90. The study illustrates that the FDI inflow drive economic growth by technical progress and the spillover effect of knowledge over the long term. The study also highlighted the fact that foreign investment supporting growth depends on the degree of complimentarity.

Kose et. al. [145] divided economies between those that are more financially open and those that are less financially open and performed a detailed analysis of the link between financial openness and TFP growth using a broad data set from 1966 to 2005. The study also used numerous indicators for productivity and financial openness across a wide range of countries. This finds strong evidence that TFP growth is powered by foreign direct investment and private equity liabilities, while external debt is in fact negatively correlated with total factor productivity growth.

The development of sophisticated econometric techniques and also the accessibility of data allow researchers and economists to carry out a firm-level study i.e. enable them to carry out micro-level investigations. Tybout et al., [146] for Chile, Gocekus [147] for Turkey and Sjoholm [128] for Indonesia carried out the firm-level investigation by using cross-sectional data set and reported increases in operational efficiency as a result of the reduction in the average effective protection rate.

Under secondary data analysis, a number of studies employed the panel data estimation technique to investigate the impact of trade reforms /trade liberalization on the productivity of firms. The firm-level studies undertaken by Tybout and Westbrook [130] on Mexico for the period 1984-1990, Harrison [132] on Cote d'Ivoire for the period 1979-1987, Haddad et al. [120] on Morocco for the period 1984-1988, Mulaga and Weiss [148] on Malawi for the period 1970-1991 and Alam and Morrison [122] on Peru for the period 1988-1992 have resulted in a rise in TFP growth due to trade reforms or trade liberalization.

Mahadevan [149] used the Cobb-Douglas framework to analyze the productivity growth of Australian firms and in doing so, He disintegrates total factor productivity into technological progress and technical efficiency gains to examine the effect of trade liberalization on the individual elements of productivity growth. The study showed that trade liberalization had a positive and significant impact on technological progress, and also recorded no major improvements in terms of technical efficiency.

Several studies on Indian firms examining the relationship between trade reforms/ liberalization and total factor productivity have provided inconclusive results. Here are few studies that have shown that trade liberalization in India has not contributed to productivity gains [150], [151], [152].

Over the years, productivity studies undertaken in India centered on the effect of macroeconomic variables on productivity growth. Of these, relatively few empirical studies have investigated the impact of trade/ financial openness, liberalization or globalization on total factor productivity growth are Fujita [153], Krishna and Mitra [134], Kathuria et al [154], Sandra Lancheros et al. [155], Haider et al [156]. In recent years, the availability of micro level data has enabled researchers to perform sector specific analysis and few such studies are Kiran and Kaur [157], Mitra et. al. [158], Sahoo [159], Rath and Akram [160], Sinha [161] etc.

Inconclusive results have been obtained in studies especially on Indian firms testing the connection between trade reforms/ liberalization and total productivity. In order to measure the overall factor productivity of the Indian manufacturing industry, Fujita [153] collected annual data between 1982 and 1988. The study tested three major hypotheses and concluded that the liberalization has accelerated the productivity growth and, secondly, the rate of productivity growth is more evident in labour intensive industries than the capital intensive industries. thirdly, the growth of exports is attributed to improved productivity.

Krishna and Mitra [134] have performed a firm-level analytical study on the link between trade liberalization and productivity growth across four randomly selected industries of the Indian economy. The solow [69] methodology was used to measure the TFP. For companies working in electronics, electrical machinery, transport equipment industries and non-electrical machinery, this survey gathered data from CMIE for 1986 to 1993. In the years after the reforms, the study concluded with less evidence of increased productivity.

The decline in tariffs is seen as an early and significant step towards globalization. In order to check the claim that the decline in tariffs is likely to have an impact on the productivity of the manufacturing sector, Balakrishnan et. al. [151] developed a panel data model for 2300 Indian manufacturing firms from 1988 to 1998. The study shows no signs of growth in the productivity of firms during this time.

In order to check the popular opinion in favor of trade liberalization that it contributes to significant productivity growth, Chand and Sen [162] assembled a panel of data on the Indian manufacturing sector. The research has demonstrated a positive impact on total factor productivity, but the productivity gain arising from the liberalization of trade is more apparent in the intermediate goods sector than in the final goods sectors.

Driffield and Kambhampati [163] studied companies from six Indian manufacturing sectors to check the improvement in production efficiency during the post-liberalization phase. He observed an average increase in the efficiency of companies in five of the six industrial sectors. The analysis also showed that imports do not appear to improve efficiency; however, the liberalization enhancing efficiency was very clear in four manufacturing sectors.

Topalova [164] set up a panel regression model for Indian companies to analyze the influence of the Indian government's trade reforms in the early 1990s on the productivity of Indian manufacturing firms. The study identified a rise in productivity of Indian companies as a result of policies to minimize trade restrictions.

Kiran and Kaur [157] studied the past studies with a view to examining the improvements in India's industrial productivity as a result of the liberalization reforms in 1991. The data was divided into two sub-periods, i.e. prior 1991 and post 1991 to assess the shift in productivity in the Indian manufacturing sector. Although they used data from 1981 to 2003 to see the aggregate effect. The findings indicate that TFPG growth was higher in pre-liberalization than in post-liberalization. Moreover, Indian industry TFP growth rates remain very low. The performance of India manufacturing sectors is far away from satisfactory and productivity improvement efforts are required.

In order to see improvements in TFP, Sahoo [159] explores the Indian software industry and used the Malmquist Productivity Index (MPI) for TFP estimation. The study used data envelopment analysis (DEA) for the period between 1999 and 2008. The Indian software industry rose in productivity. A significant factor in improving TFP production has been exported.

Bandara [165] developed a balanced panel model to empirically investigate the impact of globalization and linked policy reforms on the efficiency of Sri Lankan firms. The data collection obtained reflects 27 manufacturing industries over a span of 21 years from 1978 to 1998. To calculate growth in total factor productivity he used Cobb-Douglas production method. The findings of the study indicate that export-oriented industrialization as a consequence of the globalization process typically results in an improvement in the overall productivity of firms. The study stated that globalization, driven by open economic policies, is inadequate for productivity growth, however, the promotion of political stability, especially in developing countries, is necessary and of the utmost importance.

Sandra Lancheros et al. [155] focused on the role of globalization, assessed by the export and Outward FDI, on the premise that this is likely to improve firms' productivity and slow down convergence. The annual statistics of 8015 Indian manufacturing firms, from 1998 to 2009 have been compiled in an unbalanced panel data set. The data showed that both exports and Outward FDI increased production, but the convergence rate was decreased.

Haider et al. [156] used the ADRL test, vector error correction model and granger causality test to investigate the causal association between total factor productivity and openness. The Tornqvist Indice is used to measure the total factor productivity and a percentage of trade to GDP as an openness proxy. The data for TFP and openness were derived from two major sources i.e. Penn World Table version 8.1 and world bank database respectively from 1970 to 2011. The analysis revealed long run co-integration among openness and TFP. Evidence of unidirectional short-term causalities from trade openness to TFP is provided.

It is clear from the analysis that globalization tends to have different impacts on productivity, primarily because the growth accounting analysts vary in their methods, in the data they use, in the level of development of the country/ countries they analyze and in the time period they investigate, and in the degree of economic activity they assess and the factors they want to take into account.

The review of literature examine the complex and varied impacts on firms' productivity across countries by different

indicators of globalization. As per author's information, this work would be the first to utilize all six components of globalization to define connections with the productivity of firms operating in India. The conceptual and analytical framework of the present study is distinct and separate from existing research in many respects.

- First, A firm level approach is followed by the analysis. The key point is that earlier research for analysis have chosen firms from manufacturing sector only. However, the study shaped panel data from the firms of fourteen different sectors of Indian economy.
- Second, previous studies emphasized on the economic aspect such as trade openness and/ or financial openness as the proxies of globalization, which is only one aspect of globalization and does not fully reflect globalization. The present study used the six dimensions (i.e. trade dimension, financial dimension, interpersonal dimension, informational dimension, cultural dimension, and political dimension) of globalization in an attempt to cover the economic, social and political aspects of globalization as a whole as defined by Gygli et. al. [166]. These six sub-dimensions of globalization allow us to conduct a thorough analysis of the topic.
- Further, as per the author's best knowledge this study will be the first to examine the impact of six dimensions/ sub-dimensions of globalization on productivity of firms that operate in India. It will not only examine the association, but also try to explore the causal connection between the sub-dimensions/ dimensions of globalization and firms' productivity.

Chapter 3

INDICES / PROXIES USED

An essential prerequisite for a robust and reliable statistical analysis is that all the measures (i.e. indices or indicators) employed in the interpretation must be specified clearly and their scope must be demarcated properly.

3.1 Measuring Globalization

Given the multidimensional character of globalization, we need to quantify globalization in order to be able to analyze arguments about it more objectively. Different researchers/experts have described globalization in different ways, particularly when it comes to empirical research. Many research originally intertwined the terms globalization, liberalization, and internationalization, and used the same proxy/ proxies to represent these. Export to GDP, Import to GDP, trade to GDP, average tariff rates etc. were used to represent globalization in the earlier studies illustrates only the openness of trade or more specifically the concept of internationalization or trade liberalization, not the globalization. These studies have considered proxies highlighting only the economic aspect of globalization thus, ignored the multidimensional character of globalization. As we understand globalization as a multi-dimensional concept, it involves a lot more than just the trade and financial openness (FDI to GDP). If at all, studies considered the social and political aspects along with the economic aspect of globalization for empirical investigation, in practice they have given more weight-age to the economic aspect. Therefore, selection or development of proxy/ measure which represent different aspects of globalization fairly is essential for robust investigation.

Many experts/researchers tried to create different globalization indices with the aim of forming a single comprehensive composite index that covers all qualitative and quantitative aspects of globalization. The qualitative aspect of study relies on a multi-dimensional examination of globalization by developing theories and principles to comprehend it.

This offers some tools, but not a rigorous scientific basis which can truly figure out the globalization phenomenon in every aspect. Therefore, it emphasizes on theory/ conceptual framework but ignore the measurement part of it, which may lead to unscientific estimations. The quantitative side of the study evaluates the situation with the help of data and statistics on globalization and run the risk of oversimplify the multidimensionality of globalization. Therefore, bridging the gap between theory and measurement to the extent possible is the ultimate solution. Globalization composite indexes may serve as a meeting point for both the approaches. Therefore, a wide array of composite indexes and other methods were developed to measure the effect of globalization on world countries. These are the G-index, ATK/FP Index, the Maastricht globalization index (MGI), KOF globalization index etc developed by World Market Research Centre's (WMRC); A.T. Kearney / Foreign Policy 2007; Martens and Zywietz (2006); Dreher (2006) and Dreher et al. (2008) respectively. In order to examine and select one index for our investigation it was necessary to see how they have defined globalization [103]. To do so, as illustrated in Table 3.1, the study referred the eligibility criteria given by Dreher, Gaston and Martens (2008).

The G-index is mainly composed of economic variables and the way the weights are allocated to various components of globalization is not revealed, and the data used in the index is only partly disclosed. The ATK/FP index does the same, by using an a priori weighting system that strongly favours economic indicators. Unfortunately, through these indexes it is impossible to differentiate between globalization, internationalization, and liberalization.

With the aim to select the more accurate index of globalization Samimi et al. [88] conducted detailed analysis comparing six different composite indexes and based on their coverage of economic, social and political criteria concluded KOF Index as the most accurate. KOF Index is the only one out of these indexes which consider cultural proximity of the nation with the rest of the world. Finding out about how many nations and for how long the index of globalization was measured is one way to evaluate it. The KOF index is the most valid under these criteria too. This is the reason that the KOF indexed developed by Dreher [83] and further upgraded by Dreher et al. [99] has became the most commonly used globalization index [167].

The study used the updated and upgraded version of KOF index of globalization [166]. It distinguishes clearly between de facto and de jure measure of globalization, where variables under de facto measure illustrates the actual flow and activities and the variables under de jure measure illustrates the policies and criteria enabling the flow and activities. De facto measures of globalization are the focus of measurement in this study because they reflect the real picture by focusing on variables that show actual movements and activities. Moreover, to get the clear insight economic index was divided in to trade and financial component, and social index is disentangled into informational, interpersonal and cultural component. It utilized principal component analysis on 10-year rolling windows to measure time-varying weights having the advantage of allowing the variable's weights to alter over time with the change in the role of the variables. The revised index defined the cultural globalization in a wider sense. With few replacements, several new variables were added, making the number of underlined variable to 42 in comparison to 23 in its previous version.

Table 3.1: Indices and the parameters of comparison

Category	**Sub-category**	**WMRC** (2001)	**ATK /FP** (2007)	**MGI** (2009)	**KOF** (2006; 2008)
Relevance	Definition of globalization used	Very narrow, only economic	Medium	Very broad	Very broad
	Differentiation of globalization from internationalization	No differentiation	No differentiation	No differentiation	No differentiation
	Geographical adjustment	No	No	Yes	No
	Coverage	185 countries	72 countries	117 countries	122 countries
Robustness	Sensitivity to year to-year data variations	Very high	High	Low	High
	Method for determining weights	With normative discussion	With normative discussion	Equal Weights	Principle Component analysis (PCA)
	Weight distortion	Method not published	Some distortion	No distortion	Some distortion
Added value	Correlation with own components	High	Low	Some	Some
	Correlation among components	Not published	Not published	Moderate	Moderate
Transparency	Transparency of methodology	Moderate	High	High	High
	Data published	Partially	Yes	Yes	Yes

Source: Dreher, Gaston and Martens (2008)

Table 3.2: Structure and weights of KOF Globalization Index (2008)

Indices and variables		**Weights**
1. Economic Globalization		**36**
1.1 **Data on Actual Flows**		50
	1.1.1 Trade (% of GDP)	16
	1.1.2 FDI flows (% of GDP)	21
	1.1.3 FDI Stocks (% of GDP)	23
	1.1.4 Portfolio Investment (% of GDP)	19
	1.1.5 Income to Foreign Nationals (% of GDP)	22
1.2 **Data on Restrictions**		50
	1.2.1 Hidden Import Barriers	24
	1.2.2 Mean Tariff Rate	28
	1.2.3 Taxes on International Trade (% of current revenue)	28
	1.2.4 Capital Account Restrictions	20
2. Social Globalization		**38**
2.1 **Data on Personal Contact**		29
	2.1.1 Outgoing Telephone traffic	14
	2.1.2 Transfer (% of GDP)	8
	2.1.3 International Tourism	27
	2.1.4 Foreign Population (% of total population)	25
	2.1.5 International Letters (per capita)	27
2.2 **Data on Information Flows**		35
	2.2.1 Internet Hosts (per capita)	20
	2.2.2 Internet users (share of population)	24
	2.2.3 Cable Television (per capita)	20
	2.2.4 Daily Newspaper (per capita)	14
	2.2.5 Radios (per capita)	23
2.3 **Data on Cultural Proximity**		37
	2.3.1 Number of McDonald's (per capita)	40
	2.3.2 Number of Ikea (per capita)	40
	2.3.3 Trade in Books (% of GDP)	20
3. Political Globalization		**26**
	3.1 Embassies in Country	35
	3.2 Membership in International Organizations	36
	3.3 Participation in U.N. Security Missions	29

Source: Dreher et.al (2008): KOF Index of Globalization

Table 3.3: Structure and weights of KOF De facto Globalization Index

Indices and variables		**Weights**
1. Economic Globalization		**33.3**
1.1 **Trade Globalization**		**50**
	1.1.1 Trade in goods	40.9
	1.1.2 Trade in services	45.0
	1.1.3 Trade partner diversity	14.1
1.2 **Financial Globalization**		**50**
	1.2.1 Foreign direct investment	27.5
	1.2.2 Portfolio investment	13.3
	1.2.3 International debt	27.2
	1.2.4 International reserves	2.4
	1.2.5 International income payments	29.6
2. Social Globalization		**33.3**
2.1 **Interpersonal Globalization**		**33.3**
	2.1.1 International voice traffic	22.9
	2.1.2 Transfers	27.6
	2.1.3 International tourism	28.1
	2.1.4 Migration	21.4
2.2 **Informational Globalization**		**33.3**
	2.2.1 International patents	35.1
	2.2.2 International students	31.2
	2.2.3 High technology exports	33.7
2.3 **Cultural Globalization**		**33.3**
	2.3.1 Trade in cultural goods	22.6
	2.3.2 Trade in personal services	25.6
	2.3.3 International trademarks	13.3
	2.3.4 McDonald's restaurant	23.2
	2.3.5 IKEA stores	15.3
3. Political Globalization		**33.3**
	3.1.1 Embassies	35.7
	3.1.2 UN peacekeeping missions	27.3
	3.1.3 International NGOs	37.0

Source: Gygli et. al (2018): KOF Index of Globalization

3.2 Firm's Financial Performance Measures

The literature incorporating studies demonstrating the impact of macroeconomic factors on firm performance is differently opinionated on their choice of indicator illustrating financial performance. There is no single measure recommended to measure the performance, the selection of performance measures is thus both intricate and discretionary. Initially, studies considered 'stock returns' as an indicator to measure the firms' financial performance, later on, researchers preferred the absolute financial indicator like return on assets, return on equity, return on capital employed or return on investment. In this study, in place of one, we have considered three alternate variables separately to compute firm performance: return on assets [168], [169], [170], [25], [171], [172],[173],[174], [175], return on capital employed [176],[177], [178] and return on Investment [179], [180], [181], [182]. ROA is the most prominent and widely accessible financial indicator for evaluating a firm's performance. It considered not only the income statement parameters but also the assets needed to operate a firm hence ROA gives a holistic picture of firms' performance. Whereas, other measure like return to equity or shareholder are vulnerable to financial engineering, particularly, through debt leveraging which results in showing the distorted picture of the firm's performance. Many assets under ROA such as plant, machinery, properties and intangibles are less prone to short-run gaming, as it involves long run assets decisions that are difficult to manipulate in the short run [183]. ROA is computed as net profit after tax divided by total assets. Returns on capital employed (ROCE) are measured by the efficiency of the employing capital in spite of employing the total assets of companies, as in the case of the ROA, which reflects the profitability of a company, and is calculated as the earnings before interest and the taxes divided by the capital employed. Return on investment (ROI) shows investment gains separated by the cost of investment. It is extremely useful measure as it reflects the profitability on the expenditure, irrespective of the size and industry of a business.

Table 3.4: Variables and their Computations

Variable Name	Computation
ROA	Return on assets = Net profit after taxes / Total assets
ROI	Return on Investment = Net profit margin x Net Sales / Total assets
ROCE	Return on capital employed = Earning Before Interest and Taxes / (Total Assets - Current Liabilities)

Source: Ven Horne and John M. Wachowicz

3.3 Firm's Productivity Measure

Productivity is one of the key attributes of today's economic dynamism. Kuznets [184] pointed out that speedy growth of industrial productivity was an essential component in the growth and structural transformation of the recently developed nations. The term "productivity" has been used in so many different ways that determining whether it is synonymous with efficiency or overall effectiveness of a productive unit such as a company or factory is extremely difficult. The productivity is an elusive phenomenon which is difficult to describe as well as compute. The concept of productivity is fraught with ambiguity in such a way that people use the same terminology and signify different things [185]. Here in the study, productivity is generally used to describe the total efficiency of a firm's performance.

The study used total factor productivity (TFP) as a measure to represent firms' productivity. The following variables were used to determine the production function: total output value, gross fixed assets, salaries and wages, expenditure on raw materials, power & fuel charges, and depreciation. These variables are part of firm's balance sheets and income statements. The study used CMIE prowess database to extract the data for the variables considered. The firms' financial data are generally reported in nominal values and to use these values for the estimation of production function required data conversion by using appropriate price deflator. Sector specific wholesale price index were used to convert the values of total output and power & fuel charges in real terms and an overall wholesale price index was used for salaries and wages and raw materials expenditures. The research adopted the Balakrishnan et al. [151] approach for calculating capital employed by the firm in the production cycle. It uses the perpetual inventory method for addressing the problem that the valuation of capital is reported at historical costs rather than replacement costs. In order to obtain the value of capital stock at its replacement costs for a base year 2011 considered, the study develop a revaluation metric assuming a steady rate of changes in capital prices and investment growth. This revaluation factor transforms the base year capital value into capital at replacement cost (at current price). Subsequently, it is further deflated by using the appropriate deflator computed form the gross capital formation series. For all businesses over all years, the total factor productivity is calculated. Hence in this way a panel data model is constructed to explore the impact of trade dimension, financial dimension, interpersonal dimension, informational dimension, cultural dimension and political dimension of globalization on the productivity of firms in India.

Chapter 4

DIMENSIONS OF GLOBALIZATION AND ECONOMIC GROWTH

The analytical research sought to examine the long-term or short-term causal impact on Indian economic growth of various aspects of globalization. In reference to that, this chapter concentrates on the methodology used for analysis, illustrate and discuss the basic model formulated and the subsequent. Next, important part of this chapter is the the data analysis & results section and the last section contains the discussion part.

4.1 Methodology

The parameter used to describe economic growth was the Gross Domestic Product (GDP), the dependent variable [71], [72], [74], [80], [91], [93]. The research used the revised index for KOF globalization developed by Gygli et al. [166], in order to provide relevant and comprehensive information on globalization. The work used the de-facto index values for all the six components of globalization. For the analysis, the de-facto globalization metric was chosen largely because the variables it contains reflect real flows or activities as illustrated in detail in the previous chapter.

4.1.1 Variables Used

Table 4.1: Variables and their representation

Sr. No.	Variable	D.V. / I.V.	Proxy	Denoted by
1	Economic Growth	D.V.	Gross Domestic Product	GDP
1	Trade Globalization	I.V.	KOF Trade Globalization Index	TRGI
2	Financial Globalization	I.V.	KOF Financial Globalization Index	FIGI
3	Informational Globalization	I.V.	KOF Informational Globalization Index	INGI
4	Interpersonal Globalization	I.V.	KOF Interpersonal Globalization Index	IPGI
5	Cultural Globalization	I.V.	KOF Cultural Globalization Index	CUGI
6	Political Globalization	I.V.	KOF Political Globalization Index	POGI

Source: Authors' compilation

Here, the dependent variable (D.V.) are the real gross domestic product of India and the independent variables (I.V.) are the six different components of globalization viz. trade, financial, informational, interpersonal, cultural and political globalization for India.

Further, to linearize the trend of the time series, the gross domestic product is transformed to its natural logarithm (ln_GDP).

4.1.2 Sources of Data

The time series data set covers the years 1991 to 2017. Two key sources were used for Data extraction. Data of gross domestic product of India was collected from a World Bank database [186]. It was necessary to check the time series properties of the variables before beginning a regression exercise. During this method, the GDP data was transformed to its natural log from. This log transformation illustrated that to what degree one per cent increase in various dimension/ sub-dimensions influence the economic growth of India.

The annual reports issued by the Swiss Economic Institute for the KOF Globalization Index have provided data for

the indices taken as independent variables in the study. With the measurement and publication of indexes of the economic, political and social globalization index, the researchers are now able to carry out a much more in-depth analysis as the economic globalization is disintegrated further into trade globalization and financial globalization; social globalization into interpersonal, informational and cultural globalization. A higher index value suggests higher degree of globalization and vice versa. The structure and time-varying weights for all dimension/ sub-dimensions of the de facto globalization index are mentioned in the earlier chapter.

4.1.3 Statistical Tools / Techniques

To test the existence of long run co-integration and causality between the dependent and independent variables both in the long/ short run, the study used a Johansen co-integration test and Vector Auto-regressive Model/ Vector Error Correction Model (VAR/ VECM). Finally, the residual testing for the serial correlation, normality and heteroscedasticity is carried out to assess the robustness and validity of the VAR / VECM estimations.

4.1.4 Model Specification

The most important aspect of the VECM/ VAR study is determining the lag length of independent variables that have a direct effect on the economic growth of the country. The economic growth is influenced not only by the present values of macroeconomic factors, but also by their lagged values. As a result, Akaike's Information Criterion (AIC) and Schwarz Information Criteria (SIC) is used to determine how many lags of these variables are appropriate for this analysis.

The first step in time-series analysis is to ensure that the series are stationary, which is done using the Augmented Dicky-Fuller unit root test. The Johansen Cointegration Test is used to check for cointegration between the variables in the second phase. A long-term or equilibrium relationship exists between the variables if they cointegrate. The next step is to evaluate the short-term relationship between the dependent and independent variables, hence to find out that VECM or VAR are used. When the variables are cointegrated, VECM is used; otherwise, VAR is used. If the error correction term (EC) in VECM is negative and significant, it implies that any short-term variations in the dependent and independent variables will result in a stable long-run relationship. The final step entails deciding the direction of causality.

The regression equation used for VECM is as follows:

$$\Delta ln\_GDP_t = \sum_{j=1}^{n} \alpha_1 \Delta TRGI_{t-j} + \sum_{j=1}^{n} \alpha_2 \Delta FIGI_{t-j} + \sum_{j=1}^{n} \alpha_3 \Delta INGI_{t-j} + \sum_{j=1}^{n} \alpha_4 \Delta IPGI_{t-j} +$$

$\sum_{j=1}^{n} \alpha_5 \Delta CUGI_{t-j} + \sum_{j=1}^{n} \alpha_6 \Delta POGI_{t-j} + \sum_{j=1}^{n} \alpha_7 EC_{t-j} + \epsilon_t$.....(4.1)

In the case of no cointegration relation, VECM is no longer required and VAR is applied.

$\Delta ln\_GDP_t = \alpha_0 + \sum_{j=1}^{n} \alpha_1 \Delta TRGI_{t-j} + \sum_{j=1}^{n} \alpha_2 \Delta FIGI_{t-j} + \sum_{j=1}^{n} \alpha_3 \Delta INGI_{t-j} + \sum_{j=1}^{n} \alpha_4 \Delta IPGI_{t-j} + \sum_{j=1}^{n} \alpha_5 \Delta CUGI_{t-j} + \sum_{j=1}^{n} \alpha_6 \Delta POGI_{t-j} + \epsilon_t$.....(4.2)

Where ln_GDP is the natural log of gross domestic product, TRGI, FIGI, INGI, IPGI, CUGI and POGI are trade globalization, financial globalization, informational globalization, interpersonal globalization, cultural globalization and political globalization respectively. Also, α_0 is the intercept, $\alpha_1, \alpha_2, \ldots. \alpha_6$ are the short run coefficient, EC is the error correction term with the coefficient α_7 , ϵ represents the disturbance term and n is the lag length.

Residual testing has also performed to check the robustness/ reliability of the VECM/VAR models are conducted, such as the Breusch-Pagan-Godfrey test for Heteroscedasticity, the Jarque-Bera Standardity Test and LM Tests for Serial Correlation. The level of significance considered for all of the tests is 5%.

In addition, according to the literature, the anticipated relationships between the dependent variable and independent variables are shown in the table below.

Table 4.2: Expected Signs of Independent Variables Used in Regression Analysis

Sr. No.	**Variable**	**Expected Sign**
1	Trade Globalization	Positive (+)
2	Financial Globalization	Positive (+)
3	Informational Globalization	Positive (+)
4	Interpersonal Globalization	Positive (+)
5	Cultural Globalization	Positive (+)
6	Political Globalization	Positive (+)

Source: Authors' compilation

4.1.5 Hypothesis Formulated

The empirical evidence obtained by several studies [83], [76], [85], [86], [88], [91] indicates that the globalization influences the economic growth. Here, the long-term, as well as the short-term effects of the globalization on the economic growth of India, is studied. So the following hypotheses have been formed. In the hypothesis, it is expected that there exists a significant long-term relationship of the globalization dimensions on the economic growth.

H_1: The globalization has a significant impact on the economic growth of India, in the long run.

H_{1a}: The trade dimension of globalization has a significant effect on the economic growth of India, in the short run.

H_{1b}: The financial dimension of globalization has a significant effect on the economic growth of India, in the short run.

H_{1c}: The informational dimension of globalization has a significant effect on the economic growth of India, in the short run.

H_{1d}: The interpersonal dimension of globalization has a significant effect on the economic growth of India, in the short run.

H_{1e}: The cultural dimension of globalization has a significant effect on the economic growth of India, in the short run.

H_{1f}: The political dimension of globalization has a significant effect on the economic growth of India, in the short run.

The hypotheses were tested against their null hypothesis, with a significance level of 5%.

4.2 Data Estimation Results

4.2.1 Stationarity/ Co-integration/ Causality Test

Before testing for co-integration and causality, to review the series for stationarity is the essential condition. To do that, the unit root test developed by Levin, Lin and Chu [187] was then applied at a significance level of 5%. The prerequisite for running co-integration test is that the series must be non-stationary at level and stationary at its first difference. Table 4.4 summarizes the outcomes of stationary test of series at level and also at first difference i.e. I(1). The result of unit root test reported in Table 4.4 shows that at level, the natural log of GDP, financial, trade, interpersonal, informational, cultural and political globalization were non-stationary, however, at its first difference they found to be stationary which make them ideal for further co-integration and causal testing.

Table 4.3: Unit Root Tests

Variable	**t-stat** (at level)	**t-stat** (at first diff)
ln_GDP	1.07373	-5.63394***
TRGI	-0.994947	-7.015099***
FIGI	-0.15009	-4.48876***
INGI	1.32867	-4.26259***
IPGI	1.180547	-5.964206***
CUGI	-0.13236	-5.574151***
POGI	-1.711237	-6.712495***

Source: Authors' calculation (Here *, ** and *** illustrates level of significance as 10%, 5% and 1% respectively)

The results of Co-integration Test

Co-integration is an important econometric property of time series data and a prerequisite for long run relationship between two or more series having unit roots. It is essential to analyse the time series data for co-integration once the

hypothesis for stationarity of the series are established. Toda and Philips [188] stated that failure to test for co-integration when it exists will lead to error/ defect in model specification. Hence, the study used Johanson co-integration [189], [190] which relies on widely accepted maximum Likelihood procedure. To find out the number of co-integrating vectors, Johansen method is used for a given number of non-stationary time series of the same differenced level. It can be observed from Table 4.4 that all the series are stationary at the same level i.e. at their first difference which is the prerequisite for running Johansen co-integration test and the null hypothesis is "there is no co-integration".

The usage of VAR Granger Causality test or VEC Granger Causality test for further investigation depends upon the outcome of co-integration test. The study would consider taking VEC Granger Causality test if the findings come out in favour of co-integration of series or else, (if the series are not found to be co-integrated), the study would use Vector autoregression (VAR) Granger Causality test for further investigation. The Trace test and Max-Eigen test demonstrate that existence of 1 co-integrating equation at five percent level of significance, which implies that the six dimensions/ sub-dimensions of globalization are associated with the log of GDP. The findings thus establish long-term co-integration. Therefore, the result directs us to use VEC Granger causality test for further investigation.

Causality Test

Causality is a phenomenon commonly used for the development of predictive models. The concept of causality was initially introduced and used in economics in 1969 by Granger [191] and later on in 1972 by Sim [192]. Granger causality test is a method used to assess the usefulness of one time series in predicting another time series [191]. It says the variable X granger cause Y only if it helps in predicting the values of Y. Initially, Denis Sargan proposed the ECM method [193]. Later on, it was used and popularized by James Davidson, David F. Hendry, F. Srba, and J. S. Yeo [194] and Engle and Granger [195]. To get the automatic lag selection, the study used Akaike Information Criterion (AIC) and Schwarz Information Criteria (SIC). The VECM equation is as follows:

$$\Delta ln\_GDP_t = \sum_{j=1}^{n} \beta_{1i} \Delta TRGI_{t-i} + \sum_{j=1}^{n} \beta_{2i} \Delta FIGI_{t-i} + \sum_{j=1}^{n} \beta_{3i} \Delta INGI_{t-i} + \sum_{j=1}^{n} \beta_{4i} \Delta IPGI_{t-i} + \sum_{j=1}^{n} \beta_{5i} \Delta CUGI_{t-i} + \sum_{j=1}^{n} \beta_{6i} \Delta POGI_{t-i} + \sum_{j=1}^{n} \beta_{7i} EC_{t-i} + \epsilon_t \quad \text{..... (4.3)}$$

where EC is the error correction term.

The sign of the coefficient of co-integrating equation i.e. C(1) is negative and statistically significant which establishes the long run co-integration of different dimensions of globalization with the economic growth, hence rejects the null hypothesis of H1 and also confirm that the model is overall significant. It illustrates the existence of the convergence between the variables and convergence speed depends on the value of Coefficient of C(1).

The findings of VECM, as summarized in Table 4.4, show the positive and significant impact of de-facto trade

Table 4.4: Short-Run, One-Way Causality Testing- Vector Error Correction Model

	Coefficient
CointEq	-1.505***
Δ(LN_GDP (-1))	1.014***
Δ(LN_GDP (-2))	1.079***
Δ(TRGI (-1))	0.042***
Δ(TRGI (-2))	0.028***
Δ(FIGI (-1))	0.012
Δ(FIGI (-2))	0.036***
Δ(INGI (-1))	-0.079***
Δ(INGI (-2))	-0.048***
Δ(IPGI (-1))	-0.017**
Δ(IPGI (-2))	-0.007
Δ(CUGI (-1))	0.023***
Δ(CUGI (-2))	0.004
Δ(POGI (-1))	0.000
Δ(POGI (-2))	0.011***
Constant	0.010
F-statistic	9.218
Prob(F-statistic)	0.000
R-squared	0.879
Adjusted R-squared	0.784
Durbin-Watson stat	2.054

Source: Authors' calculation. Here first-difference operator is illustrated as "Δ" and first and second lag of the corresponding variables is illustrated as (-1) and (-2) respectively, CointEq represents Co-integrating Equation.

globalization on GDP at both lags i.e. lag 1 and lag 2, thus established the cause and effect relationship between the two. In the short-run, one could say that with an increase in trade globalization, the Indian economy will also grow. De facto financial, cultural and political sub-dimension of globalization establish positive and significant causality with GDP either at lag 1 or lag 2. Whereas, the coefficient value of de facto informational sub-dimension at both the lags and de facto interpersonal sub-dimension at first lag are negatively significant. Majority of the variables mentioned in Table 4.4 established cause-effect relationship with GDP at either lag 1 or at lag 2. However, the study used Wald Test to determine whether or not they have been significant jointly i.e. at both the lags. It can observe from Table 4.5 that all dimensions of globalization are significant at 5% level, ascertaining an overall multivariate causality with the economic growth of Indian in the short run, thus, reject the null hypothesis and accept the alternative hypothesis of H1a, H1b, H1c, H1d, H1e and H1f.

Table 4.5: One-Way Granger Causality (Wald Test), for the two lags of Independent Variables

Variable	**Coeff. (Chi-square)**	
Δ(TRGI)	64.559***	
Δ(FIGI)	51.123***	
Δ(INGI)	71.258***	
Δ(IPGI)	9.241***	
Δ(CUGI)	46.357***	
Δ(POGI)	17.962***	
J-B Test Statistic for Normality	24.578	0.550
LM Tests for Serial Correlation	38.544 (Lag 1)	0.859
	50.764 (Lag 2)	0.404
Test for Heteroscedasticity	854.405	0.357

Source: Authors' compilation (Here *, ** and *** represents significance level at 10%, 5% and 1% respectively)

Several diagnostic tests, including the the Jarque-Bera Stationarity Test, LM Tests for Serial Correlation and the Breusch-Pagan-Gorey test for Heteroscedasticity, were conducted for the validation of the Vector Error Correction Model as illustrated in Table 4.5. These tests evaluate the model for normality, serial correlation and heteroscedasticity, respectively. The outcome of Jarque-Bera normality test confirms that the residuals are normally distributed. As the significance value (p= 0.550) is more than the 5% level of significance, thus, the study accept the

null hypothesis which means residuals of model are multivariate normal. In the case of the serial correlation test, the null hypothesis is "there is no serial correlation". The p-value of the coefficients of LM test at both the lags are more than 0.05, hence the results support the null hypothesis, which means LM tests for serial correlation refuse to have serial correlation in the VEC Model. The test for heteroskedasticity is of utmost importance in the case of cross-sectional data than time-series data [196], even then the study used Breusch-Pagan-Godfrey test for checking heteroskedasticity in the model. The significance value (p-value = 0.357) is greater than the 0.5, hence the null hypothesis cannot be rejected i.e. the variance of the error term is constant. It is therefore concluded that the specified VECM model doesn't suffer from heteroskedasticity. All the residual test findings indicate the overall validity of the model.

Table 4.6: The results of Pair-wise Granger Causality Tests

Null Hypothesis	**F-Statistic**
TRGI does not Granger Cause LN_GDP	2.50859*
LN_GDP does not Granger Cause TRGI	7 9.31651***
FIGI does not Granger Cause LN_GDP	6.36522***
LN_GDP does not Granger Cause FIGI	5.08090**
INGI does not Granger Cause LN_GDP	2.98165*
LN_GDP does not Granger Cause INGI	5.54441***
IPGI does not Granger Cause LN_GDP	0.40511
LN_GDP does not Granger Cause IPGI	9.85221***
CUGI does not Granger Cause LN_GDP	2.47628
LN_GDP does not Granger Cause CUGI	1.89926
POGI does not Granger Cause LN_GDP	0.17381
LN_GDP does not Granger Cause POGI	0.39016

Source: Authors' calculation (Here *, ** and *** denotes level of significance at 10%, 5% and 1% respectively)

The findings of Table 4.6 show that de facto financial globalization and GDP are causing each other thus possess bidirectional causality. The table also confirms the presence of unidirectional causality leading from the GDP to de facto trade, interpersonal and informational sub-dimensions of globalization. The political and the cultural de facto globalization are not causing GDP individually and vice versa.

4.3 Discussion

Analysis of data revealed that in the long run Indian economic growth is converging with the globalization process. Globalization has thus proven itself to be a supporter of India's economic growth. The results are consistent with the current empirical literature and also with the statistics on GDP, as in 1991 India had GDP of 266 billion USD and in 2018 it expanded to 2.3 trillion USD almost nine times.

Even though globalization tends to encourage economic growth overall, the effect isn't quite the same as when we assess the individual effect of de facto component of KOF index (i.e. commerce, economics, community, interpersonal, information and policy). The trade, cultural and information globalization have a significant influence on economic growth, however where the first two components (trade and cultural) supported the growth, the third one (informational globalization) showed inverse association with growth. The argument is that the multiple studies carried out in the past have supported the positive effect of information flow on economic growth of a country. Possible reasons for such inconclusive findings may be as follows with respect to information globalization. The informational globalization index covers patent applications registered by any foreigner, the number of foreign students studying in the host country, and the level of sophistication in technology exports. The proxies designed to represent variables like patent registered and foreign students is primarily for cross-country assessment, as both variables are divided by the population of that country, the valuation derived for these factors is likely to be poor for highly populated countries like India. As a huge number of Indian students go overseas for higher education as per RBI report, the expenditure of Indian students studying abroad on courses and hostel fees rose from 1.9 billion USD in 2013-14 to 2.8 billion USD in 2017-18 (i.e. a 44% rise). These figures in absolute values are very high yet when measured as a proportion of the nation's population, the factor value for India is likely to be low. In relation to the third factor of informational globalization, the KOF index classifies the Industrial goods for export as high, Medium-high, medium-low and low technology and estimated using the average weighted approach. India exports a wide variety of agriculture products, textiles, leather products etc. which comes under the ambit of low-tech goods and chemicals and motorcycles as medium-high tech goods. Countries shipping medium-high and low-tech goods like India have a lower weightage than countries that export high-tech goods. It has now become almost apparent that why have the empirical investigation established negative causality between informational globalization and India's economic growth.

As the analysis establishes the causal interaction between variables, it becomes necessary to ask the next question about the direction of causality i.e. who triggers whom? In terms of directional causality, the financial globalization index causes economic growth of India and vice versa, hence established bi-directional causality between the two variables. However, other aspects of the KOF index such as trade, cultural, informational, interpersonal and political have not shown a causal impact on economic growth, evaluated pair-wise, but on the contrary, GDP tends to cause these aspects in the long run. The index of financial globalization includes direct foreign investment, investment in portfolios, international reserves etc. Foreign investment triggers economic growth as foreign investment comes with

transfer of technology, technical and administrative know-how, infrastructural advancement, etc. Furthermore, with enough foreign currency reserves, economies can meet their short- and long-term payment obligations and address the risks of currency variations. It is therefore clear that financial globalization is one of India's most critical factors for economic growth. On the other hand, it is worth noting that GDP causes financial, trade, information and interpersonal sub-dimension of globalization.

The outcome of the data analysis gives a clear and slight distinct view of the relationship between economic growth and globalization. Based on earlier researches, in which most of them infer a strong link between the two that globalization has greatly led to improving India's economic situation, the report goes one step further. Careful investigation has shown that financial globalization, of all six KOF indexes, plays the most important role in economic growth of India, relative to other indexes. The analysis offers a strong purpose to further explore this area in greater detail to obtain more insight.

Chapter 5

DIMENSIONS OF GLOBALIZATION AND FIRMS' FINANCIAL PERFORMANCE

This chapter focuses on determining whether there is any association between globalization's dimensions and the financial performance of firms. If a relationship exists, the next step is to determine if there is a causal linkage between the two, in the short as well as in the long term. The chapter illustrate and specify the methodology adopted for analysis, model(s) formulated and the subsequent hypotheses proposed for further testing. The next section comprises of data interpretation and results followed by the discussion as the last section of this chapter.

5.1 Methodology

The study formed a panel data set to investigate the relationship as well as the causal phenomenon between the dimensions of globalization and firm financial performance. The study used economic, political and social component of globalization reported by KOF globalization index to have a detailed understanding of globalization [83], [99]. The study used three different measures of firm performance i.e. ROA, ROI or ROCE separately, resulting in formation of three different model for analysis. Investigation is further extended to explore the sector-specific firms' performance.

5.1.1 Sample Used

The firms were selected as a sample based on their presence in international business, as firms having business international are the ones that are most exposed to the globalization process. It was learned that firms' involvement in foreign business varies greatly, making it difficult to decide which companies should be selected. As a result, a minimum number of years of international involvement must be determined as a benchmark standard for firm selection. Thus, the study used the weighted average method and it came to be 10.72 years i.e. 11 years. Considering the criteria 4778 firms out of 28696 got selected for the study. However, due to missing values issue with the firm's financial data for different parameters, firms got eliminated further, making 912 firms as our final sample. The study adopts the multi-sectors approach [197], [198] and the firms under investigation belong to fourteen different sectors of the Indian economy. The number of firms in accordance with the sector they belong to are mention in the table below.

Table 5.1: Classification by sector of firms chosen for this analysis

Sr. No.	Sectors	Sample selection based on WtAvg	Final Sample of Companies
1	Food &Agro Products	201	87
2	Chemicals & Chemical Products	536	163
3	Construction Material	84	52
4	Consumer Goods	125	72
5	Mining	30	14
6	Metal & Metal Products	148	69
7	Textile	1766	119
8	Transport Equipment	127	67
9	Communication Services	260	27
10	Wholesale & Retail Trading	178	82
11	Hotel & Tourism	55	26
12	Information Technology	150	81
13	Transport Services	936	19
14	Financial Services	77	34
	Total	4673	912

Source: Authors' compilation from CMIE Prowess Database

5.1.2 Variables Used

The dependent variable illustrates firm performance. The study used three separate measures of firm's performance namely, return on assets, on investment or on capital employed. The dimensions of globalization are the independent variables. The study considers the extensively used and established KOF index of globalization to measure the economic, social and political effect of it on firm performance [83], [103].

Table 5.2: Variables and their representation

Sr. No.	Variable	D.V. / I.V.	Proxy	Denoted by
1	Firms' Financial Performance	D.V.	Return on Assets	ROA
		D.V.	Return on Investment	ROI
		D.V.	Return on Capital Employed	ROCE
1	Economic Globalization	I.V.	KOF Economic Globalization Index	EGI
2	Social Globalization	I.V.	KOF Social Globalization Index	SGI
3	Political Globalization	I.V.	KOF Political Globalization Index	PGI

Source: Authors' compilation

Economic globalization entails the flows as well as the restrictions of trade, international investment (either direct or institutional) and income payments to foreign nationals. The propagation of government policy is marked by political globalization. The factors like the degree of diplomatic integration, the number of embassies, the membership in international organizations and country's participation in UN peacekeeping missions are used to calculate political globalization. Social globalization involves the exchange of thoughts, information, images and humans migration.

5.1.3 Sources of Data

Data were collected from two key sources to build the panel dataset. The firms' financial data for the period 2000 to 2017 were derived from the CMIE PROWESS database to compute firm's ROA, ROI and ROCE over the years and the index values for economic, social and political dimensions of globalization is drawn from reports published annually by the Swiss Economic Institute for KOF Indices.

5.1.4 Statistical Tools / Techniques

To find out the association the study uses panel regression, also to test the existence of long run co-integration and causality between the dependent and independent variables both in long/ short run, the study used a Johansen co-integration test and VAR / VEC Model.

5.1.5 Model Specification

In this analysis, three separate models were formed and analyzed. E-Views was used as an econometric programme to execute the unbalanced Panel Data Models, with ROA, ROCE or ROI as its dependent variable respectively.

Model 1:

$$ROA_{it} = \theta_1 + \beta_1 EGI_{it} + \beta_2 SGI_{it} + \beta_3 PGI_{it} + \beta_4 ln\_NS_{it} + \epsilon_{it1} ....(5.1)$$

Model 2:

$$ROI_{it} = \theta_2 + \beta_5 EGI_{it} + \beta_6 SGI_{it} + \beta_7 PGI_{it} + \beta_8 ln\_NS_{it} + \epsilon_{it1} ....(5.2)$$

Model 3:

$$ROCE_{it} = \theta_3 + \beta_9 EGI_{it} + \beta_{10} SGI_{it} + \beta_{11} PGI_{it} + \beta_{12} ln\_NS_{it} + \epsilon_{it1} ....(5.3)$$

Where ROA, ROCE or ROI represents dependent variable and EGI, PGI and SGI illustrate the economic, political and the social dimension of globalization as independent variables and ln_NS as natural log of net sales reflecting the size of a firm. θ_1, θ_2 and θ_3, are the intercept, β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8, β_9, β_{10}, β_{11} and β_{12} are the slopes of predictor variables, *i* denote the sector, t is the time and ϵ_{it1}, ϵ_{it2} and ϵ_{it3} are the error term, which varies over both sector and time.

The bigger size of a firm enjoys advantages like economy of scale and market power which small size firms are not capable of, thus, size is a decisive factor which contributes to the firm's ability to globalize and in a sense if not adjusted throughout the models, it may alter the outcomes. Therefore, the study uses natural log of net sales as a control variable to neutralize the bias which the firm size may create in panel models.

5.1.6 Hypothesis Formulated

Several studies have shown that globalization has an effect on the profitability of firms. The long-term and short-term impact of globalization on the financial performance of firms in India are investigated, here and therefore the following hypotheses have been proposed.

H_2: The globalization has a significant impact on the financial performance of firms, in the long run.

H_{2a}: The economic dimension of globalization has a significant impact on the financial performance of firms, in the short run.

H_{2b}: The social dimension of globalization has a significant impact on the financial performance of firms, in the short run.

H_{2c}: The political dimension of globalization has a significant impact on the financial performance of firms, in the short run.

The hypothesis were tested against their null hypothesis, with 5% level of significance.

5.2 Data Estimation Results

The random effect assessment of panel in Table 5.2 illustrates the association between economic, political and social dimensions of globalization and firms' performance. It is quite evident from the table that the economic dimension of globalization has a positive influence on the performance of the firms throughout the three models, with the coefficient value as statistically significant at one per cent level in case of Model-1 and Model-2. As anticipated, there is therefore ample evidence that economic globalization positively affects the performance of companies operating in India.

On the contrary, the relationship between political globalization and firms' performance in each of the three models was both negative and statistically significant (i.e. for ROA, ROI, and ROCE at 1, 1 and 10 percent level of significant, respectively). Evidently, Indian political globalization's negative effect on the performance of its firms states that firms are not strategically inclined to leverage India's enticing position on the global forum.

Table 5.3: The Random Effect Panel Data Estimation Results

Variable	**Model-1 (ROA)**	**Model-2 (ROI)**	**Model-3 (ROCE)**
C	54.653***	32.171***	116.807
EGI	0.328***	0.187***	0.628
PGI	-0.828***	-0.526***	-1.584*
SGI	0.129	0.143	0.150
In_NS	0.905***	0.819***	1.298***
F-statistic (Prob.)	36.191	31.839	2.294
Prob(F-statistic)	0.000	0.000	0.002

Source: Authors' calculation (Here *, ** and *** represents 10%, 5% and 1% significance level respectively)

There is no indication that social globalization promotes the firms' performance in these three models. The control variable is also positive and significant, as expected.

The differential intercept values for all fourteen sectors are shown in the Table 5.4. The positive sign of the coefficient of differential intercept throughout the three models revealed that globalization has improved the firms' performance better than the average performance values, which are 54.653, 32.171 and 116.807 for Model 1, Model 2 and Model3 respectively as shown in the Table 5.3. The negative sign of the the coefficient of differential intercept throughout the three models revealed that globalization has improved the firms' performance less than the average performance values. The firms among different sector mentioned above under the influence of globalization phenomenon have performed largely well, however the firm performance of three specific sectors namely textiles, telecommunication services and transport services are somewhat low in comparison to others as illustrated in the Table 5.4.

Table 5.4: Differential Coefficients of Intercept (Sector-wise)

Sr. No.	Sectors	Differential Intercept Coefficients		
		Model-1 (ROA)	Model-2 (ROI)	Model-3 (ROCE)
1	Food and Agro Products	0.26	0.51	2.01
2	Chemicals and Chemical Products	1.84	1.67	2.07
3	Construction Material	1.18	0.60	1.13
4	Consumer Goods	1.27	1.27	3.18
5	Mining	1.47	1.76	0.56
6	Metal and Metal Products	-0.69	-0.28	-0.91
7	Textile	-3.05	-3.02	-2.72
8	Transport Equipment	0.27	-0.15	-5.00
9	Communication Services	-7.76	-6.68	-18.74
10	Wholesale and Retail Trading	-0.02	0.35	1.35
11	Hotel and Tourism	1.43	1.95	-0.77
12	Information Technology	2.27	2.45	-1.61
13	Transport Services	-10.75	-10.25	12.30
14	Financial Services	2.64	0.59	6.58

Source: Authors' calculation

5.2.1 Stationarity / Co-integration / Causality Test

The establishment of the connection between firms' performance and various globalization's' dimensions enable us to investigate whether there exist any causal phenomenon between the dependent and independent variables. Therefore, to check whether the two establish long run co-integration and long and/ or short run causality, the study used Johansen Co-integration test and VAR / VECM test.

Prior to running the co-integration and causality test on panel data model, it is a prerequisite to verify whether series (different variables) is stationary at level, at first difference or at the second difference or a combination of it. In order to fulfill this condition, study used unit root test formed by Levin, Lin and Chu [187].

Table 5.5: Panel Unit Root Tests

Series	**t-statistics (at level)**
ROA	-51.032***
ROI	-48.323***
ROCE	-64.729***
EGI	-70.989***
PGI	-53.040***
SGI	-50.454***
ln_NS	-12.939***

Source: Authors' calculation (Here *, ** and *** illustrates level of significance at 10%, 5% and 1% respectively)

It is quite evident in the Table 5.5 that all the series are uniformly stationary at level. Hence, there has been no proof of long-term co-integration, thus, accept the null hypothesis of H2. Therefore, it is not feasible here to apply Johansen Co-integration Test and it can be concluded that no long-term convergence takes place between the dependent variable (ROA, ROI or ROCE) and the independent variables (EGI, PGI, SGI and ln_NS).

No long term causality between variables established above left us to explore causality in the short term. Thus, VAR test can be performed here to figure out the causal effect in short-run. The application of VAR required selection of lag length and in the analysis AIC and SIC criteria were used to determine the lags. The value of AIC & SIC is lowest at lag two, hence analysis includes variables up to two lags. The VAR Granger Causality Model equations used to assess short-run causality are shown below:

Model A:

$$ROA = C(1) * ROA(-1) + C(2) * ROA(-2) + C(3) * EGI(-1) + C(4) * EGI(-2) + C(5) * PGI(-1) + C(6) * PGI(-2) + C(7) * SGI(-1) + C(8) * SGI(-2) + C(9) * ln\_NS(-1) + C(10) * ln\_NS(-2) + C(11) \quad ...(5.4)$$

Model B:

$$ROI = C(1) * ROI(-1) + C(2) * ROI(-2) + C(3) * EGI(-1) + C(4) * EGI(-2) + C(5) * PGI(-1) + C(6) * PGI(-2) + C(7) * SGI(-1) + C(8) * SGI(-2) + C(9) * ln\_NS(-1) + C(10) * ln\_NS(-2) + C(11) \quad ...(5.5)$$

Model C:

$$ROCE = C(1) * ROCE(-1) + C(2) * ROCE(-2) + C(3) * EGI(-1) + C(4) * EGI(-2) + C(5) * PGI(-1) + C(6) * PGI(-2) + C(7) * SGI(-1) + C(8) * SGI(-2) + C(9) * ln\_NS(-1) + C(10) * ln\_NS(-2) + C(11) \quad ...(5.6)$$

Where, ROA, ROI or ROCE is the dependent variable for Model A, Model B or Model C respectively. EGI, PGI, SGI and ln_NS are independent variables. The lag 1 and lag 2 is represented by (-1) and (-2) respectively. C is the coefficients of the respective parameter 1, 2 .... 10, C(11) is for constant.

Table 5.6: The Result of Vector Auto Regressive Granger Causality Test

Variables	**Coefficients**		
	Model A (ROA)	Model B (ROI)	Model C (ROCE)
Constant	59.044**	51.484**	185.215
D.V. (lag 1)	0.443**	0.448*	0.128**
D.V. (lag 2)	0.069**	0.037**	-0.012
EGI (lag 1)	0.11	-0.018	-0.383
EGI (lag 2)	0.188**	0.308**	1.215*
PGI (lag 1)	-0.551***	-0.068	-0.356
PGI (lag 2)	-0.179	-0.478**	-2.221*
SGI (lag 1)	0.103	-0.195	-0.685
SGI (lag 2)	-0.274	-0.26	1.371
ln_NS (lag 1)	1.304**	0.911*	2.325*
ln_NS (lag 2)	-1.082**	-0.758**	-1.689
R2	0.237	0.17	0.017
Adjusted R2	0.237	0.169	0.016
F-Statistics	508.85	333.856	28.411
Prob. (F-Statistics)	0.000**	0.000**	0.000**

Source: Authors' calculation (Here *, ** and *** denotes 10%, 5% and 1% significance level, respectively)

Table 5.7: Statistics of One-Way Granger Causality (Wald Test), for the two lags of Independent Variables

Wald Test	**Chi-sq**		
EGI (lag 1 and lag 2)	10.789***	10.503***	3.792
PGI (lag 1 and lag 2)	17.75***	8.43**	5.188*
SGI (lag 1 and lag 2)	1.311	1.262	0.74
ln_NS (lag 1 and lag 2)	79.407***	28.311***	6.167**

Source: Authors' calculation (Here *, ** and *** represents 10%, 5% and 1% significance level, respectively)

Table 5.6 demonstrates the results of vector autoregressive granger causality test, in which apart from social dimension of globalization, the economic and political dimension of globalization, and log of net sales established short-run causality with firm performance at different lagged values i.e. either lag 1 or lag 2. But to know whether they are jointly significant (i.e. at both lag 1 and lag 2) or not, Wald Test was used and similar findings were reported to indicate an overall short-run causality of the economic, political dimension of globalization and log of net sales on the performance of firms operating in India. Therefore, reject the null hypothesis of H2a and H2b and accept the null of H2c. These outcomes are consistent with the findings of the panel regression presented in Table 5.3.

5.3 Discussion

The economic dimension of globalization goes along well with the positive sign that is anticipated, meaning that the success of companies increases with India's rising economic globalization. India has had a encouraging growth rate (in terms of GDP) for the last two decades. India 's trade, thus, as a percentage of GDP is around 40.35%, which is far higher than that of the US and China in 2016, at 26.58% and 37.03% respectively, which means India is comparatively an open and fairly integrated economy [12]. Furthermore, India's export products have advanced the value chain by selling technologically sophisticated capital goods, such as refined petroleum products, machinery, biochemical products, pharmaceutical and healthcare products, automobiles, etc. In the case of social globalization, it illustrates positive sign although failed to produce any influence on the performance of firms operating in India.

As India is ranked very high on its political globalization index, a positive influence on firm performance was expected. On the contrary, the outcomes of the analysis demonstrating the relationship between political globalization and the firms' performance were quite surprising and opposite of our expectations. The possible reasons for such deviated outcomes can only be explained by understanding the components used to compute the political globalization

index. And these are number of embassies a nation have globally, International institutions' membership, number of international treaties signed and involvement in united nation security council missions. In relation to these, India usually gets high score for all these four parameters. Since 1948, India has taken part in 43 peacekeeping missions out of a total of 71. In comparison, India makes a major contribution to nine missions out of 14 existing peacekeeping missions. India actually has the world's 12th largest diplomatic contingent, with 1002 embassies / high committees.

These components may fulfill the political and strategic objectives of India however had low economic relevance. The international agreements India form with other nations is the critical aspect among political globalization components, which have the ability to influence the performance of firms. However, as reported by Saraswat et. al. [199], the growth rate of the Indian exports with countries that have signed and have not signed trade agreements is the same i.e. 13 per cent during on yearly basis, Hence, it revealed that the trade agreements has not provided firms operating in India, the expected leverage. In addition to this, official data reported on the website of the department of commerce, the government of India, revealed that the Indian trade is highly concentrated even in 2016-2017 in a limited number of nations, which means that 70% of overall trade is confined to just 22 of the 200 countries.

The sector-specific firms' analysis with globalization's dimensions has concluded an overall increase in firms' performance over time. In Table 5.4, the findings demonstrate that businesses from all fourteen industries have taken advantage in their performance improvement, particularly, in the sectors like information technology and mining. First of all, the continuously increasing demand for iron and steel is responsible for the impressive performance of companies working in the mining industry. In addition, power and cement industries have also added to the mining sector's growth. It should be noted that India has become the third biggest coal production market and the fourth highest producer in the World in 2018 when it comes to iron ore production. Secondly, by automatic route into the mining sector the government of India has approved foreign investment of up to 100%. Thirdly, India profits from its strategic position, which makes exports easier for developing and newly developing Asian countries [200].

The main factors responsible for raising IT firms' performance and profitability are the firms' global presence, competitive advantages and policy support from government. Over 200 IT companies in India function in over 80 countries and have delivery centres worldwide. Compared to the American firm, Indian IT companies are 5-6 percent cheaper. In addition, the government of India supported this IT sector by creating specific action plan and review it whenever required and put special attention to the policy implementation, including setting up a $745.82 million fund to optimize the IT sector's capacity, and providing Indian companies with three year tax exemption under the 'Start-up India' [201].

The analysis of firms among sectors reported that firms in the textile, telecommunication and transport service sector experienced low growth compared with other sectors. Since the abolition of "the Multi-Fiber Deal" in 2005, the Indian textiles sector is supposed to benefit from it, but complex industrial and legal factors have not enabled India to take advantage of changing circumstances [202]. The architecture of the Indian textile industry with its long and

complex supply chain mechanism was one of the key factors responsible. There are more than ten intermediaries, from the farmer to the end customer, and intermediates add to cost and greatly reduce the competition in the industry. Furthermore, inflexible labour regulations prohibit manufacturer's proposed expansion of business. Neighboring countries such as Bangladesh offer cheap labour and tariff waiver on export, hence Indian textile producers are now compelled to transfer their companies to Bangladesh.

With respect to the telecommunications sector, the volume of subscribers has grown immensely, but this growth did not enable businesses to raise their profits. The Indian telecom industry was examined by Venkatram and Zhu [203] and they found no causal correlation between subscriber volumes and revenues. They argued that intensified competition among telecommunications firms has led to a price war. Therefore, declining tariff rates and telecommunications market structure probably accounted for poorer firm performance.

The Indian firms' lower performance is apparent from the fact that trading shares of India's transport services sector in the world is continuously declining. The contribution of India in global trade of transport services was about 30.75% in 2000, 30% in 2001, 29.34% in 2002 and so on and in 2015, it decreased to 12.45% as per the statistics published by WITS Database Report, [204].

Chapter 6

DIMENSIONS OF GLOBALIZATION AND FIRMS' PRODUCTIVITY

The intent of this chapter is to find out whether there is any association between various aspects of globalization and the firms' productivity, if found, then the next step is to test them for co-integration and causality both in the short and the long run. In light of this, this chapter focuses on the methodological part of the study, illustrate and specify the model develop for analysis and the hypothesis that follows. The data interpretation and results section is followed by the discussion section, which is the next important part of this chapter.

6.1 Methodology

In this chapter, we concentrate on analyzing an important function of firm's performance that is the productivity of the firm. Hence to select the appropriate proxy for measuring firm's productivity is essentials. The technique used for investigation is inherited from Hall [205] and used by a wide number of researchers/ economists on different countries and time period to evaluate the impact on the total factor productivity of firms due to the shifts in respective countries' macroeconomic variables [132], [150], [134], [151]. In line with these studies, we also choose total factor productivity (TFP) as a measure of firms' productivity.

Table 6.1: Classification by sector of firms chosen for this analysis

Sr. No.	Sectors	Sample selection based on WtAvg	Final Sample of Companies
1	Food &Agro Products	201	87
2	Chemicals & Chemical Products	536	163
3	Construction Material	84	52
4	Consumer Goods	125	72
5	Mining	30	14
6	Metal & Metal Products	148	69
7	Textile	1766	119
8	Transport Equipment	127	67
9	Communication Services	260	27
10	Wholesale & Retail Trading	178	82
11	Hotel & Tourism	55	26
12	Information Technology	150	81
13	Transport Services	936	19
14	Financial Services	77	34
	Total	4673	912

Source: Authors' compilation from CMIE Prowess Database

6.1.1 Sample Used

The study initially listed 28,696 companies based on their presence in international markets and their selection was centered on their exposure to international business, since these firms are subjected to the phenomenon of globalization. To pick firms for the purpose of the analysis on the ground of firms' exposure to globalization i.e. to evaluate their international involvement, the study used weighted average method. Here the weighted average estimation is calculated based on the number of firms with the number of years participating in international business, as already explained in the sub-section 5.1.1. As a result, between 2000 and 2018, businesses with 11 years or more of international engagement were selected. Though, the selected sample of 4,673 firms was further reduced to 912 firms as the data faced the missing values issue. Therefore, 912 firms as our final sample were used for further testing. To carry out sector-specific investigation sample is divided into 14 different sectors of Indian economy, adopting multi-sectoral approach [197], [198] as displayed in Table 6.1.

6.1.2 Variables Used

Table 6.2: Variables and their representation

Sr. No.	Variable	D.V. / I.V.	Proxy	Denoted by
1	Firms' Productivity	D.V.	Total factor Productivity	TFP
1	Trade Globalization	I.V.	KOF Economic Globalization Index	TRGI
2	Financial Globalization	I.V.	KOF Social Globalization Index	FIGI
3	Informational Globalization	I.V.	KOF Political Globalization Index	INGI
4	Interpersonal Globalization	I.V.	KOF Political Globalization Index	IPGI
5	Cultural Globalization	I.V.	KOF Political Globalization Index	CUGI
6	Political Globalization	I.V.	KOF Political Globalization Index	POGI

Source: Authors' compilation

The dependent variable illustrates firm's productivity. The study used total factor productivity as a measure to represent firm's productivity. The globalization as the independent variable are illustrated by the dimensions of KOF globalization index. To represent different dimensions of globalisation such as trade, financial, informational, interpersonal, cultural and political, the study uses the widely used and well-established KOF index of globalisation [166].

6.1.3 Sources of Data

The data was obtained from two major sources. The KOF Globalization Index reports issued by the Swiss Economic Institute (KOF) provided data on the dimensions of the globalization indexes for India. The data for various financial and non-financial parameters of firm used to drive total factor productivity of the firms for all the years from 2000 to 2018 was extracted from the CMIE PROWESS database.

6.1.4 Statistical Tools / Techniques

The study used an unbalanced panel regression to examine the association. Also Johansen co-integration test and VAR/ VEC Model were used to find out the existence of the long run co-integration and causality (in the short run and/ or in the long run).

6.1.5 Model Specification

To carry out the Panel Regression the model is specified as follows:

$$ln\_TFP_{it} = \gamma_0 + \gamma_1 TRGI_{it} + \gamma_2 FIGI_{it} + \gamma_3 INGI_{it} + \gamma_4 IPGI_{it} + \gamma_5 CUGI_{it} + \gamma_6 POGI_{it} + \epsilon_{it} \quad \text{..... (6.1)}$$

Where, ln_TFP is the natural log of total factor productivity as the dependent variable. TRGI, FIGI, INGI, IPGI and POGI are independent variables. γ_0 is the intercept for the model, γ_1, γ_2, ...,γ_6 are the slopes of independent variables, i denote the sector, t is the time and ϵ_{it} are the error term, which varies over both sector and time.

6.1.6 Hypothesis Formulated

Following hypotheses have been formed to see if the dimensions of globalization have an impact on firms' productivity in the long run and/or the short run.

H_3: The globalization has a significant impact on the firms' productivity, in the long run.

H_{3a}: The trade dimension of globalization has a significant impact on the firms' productivity, in the short run.

H_{3b}: The financial dimension of globalization has a significant impact on the firms' productivity, in the short run.

H_{3c}: The informational dimension of globalization has a significant impact on the firms' productivity, in the short run.

H_{3d}: The interpersonal dimension of globalization has a significant impact on the firms' productivity, in the short run.

H_{3e}: The cultural dimension of globalization has a significant impact on the firms' productivity, in the short run.

H_{3f}: The political dimension of globalization has a significant impact on the firms' productivity, in the short run.

The hypotheses were tested against their null hypothesis, with a significance level of 5%.

6.2 Data Estimation Results

The outcomes of random effects panel estimates illustrates the association between different dimensions of globalization and the firms' productivity are shown in Table 6.3. The trade, financial and informational sub-dimension of globalization have established a positive and statistically significant relationship with the productivity of firms at a 1%, 5% and 5% significance level respectively. On the contrary, the linkage between political dimensions of globalization and the firms' productivity is come out as negatively significant, also the association of firms' productivity and cultural globalization is negative, yet failed to establish statistical significant association. The model failed to established the linkage of interpersonal and cultural globalization with the firm's productivity.

Table 6.3: The Random Effect Panel Data Estimation Results

Variable	**TFP**
C	6.731***
TRGI	0.008***
FIGI	0.004**
INGI	0.008**
IPGI	0.006
CUGI	-0.00004
POGI	-0.078***
F-statistic	5.657
Prob(F-statistic)	0.000
Durbin-Watson stat	1.649

Source: Authors' calculation (Here *, ** and *** represents 10%, 5% and 1% significance level, respectively)

Table 6.4 displays the differential intercept coefficient values for all 14 sectors of Indian economy in context to sector-specific firms' productivity. The positive sign of the differential intercept value for the sector signifies better than average improvement in the productivity of the firms of that sector, and negative sign signifies productivity improvement less than the average productivity value (i.e. Average productivity coefficient= 6.731). However, efficiency growth is strongest in the transport services sector, followed by consumer goods sector and the least in the financial services sector, followed by hotel and tourism sector.

6.2.1 Stationarity / Co-integration / Causality Test

While in the previous section, the interaction between firms' productivity and the dimensions of globalization was described using an unbalanced panel regression model. The influence may cause by different dimensions of globalization on the firms' productivity can only be determined by carrying out the causality tests. The Johansen Cointegration test can be used for identifying long-term causal relations, while the VAR / VECM test can be used for evaluating short-term cause-effect relationships between the dependent and independent variables.

Table 6.4: Differential Coefficients of Intercept (Sector-wise)

Sr. No.	**Sectors**	**Differential Intercept Coefficients**
1	Food and Agro Products	0.07
2	Chemicals and Chemical Products	-0.02
3	Construction Material	-0.02
4	Consumer Goods	0.1
5	Mining	-0.05
6	Metal and Metal Products	-0.03
7	Textile	-0.08
8	Transport Equipment	0.04
9	Communication Services	-0.04
10	Wholesale and Retail Trading	-0.02
11	Hotel and Tourism	-0.22
12	Information Technology	-0.16
13	Transport Services	0.85
14	Financial Services	-0.42

Source: Authors' calculation.

It is important, however, to verify whether each series is stationary at level, first difference or second difference before conducting co-integration test or test for causality on the panel dataset. The unit root test developed by Im-Pesaran-Shin [206] has been used to test the stationarity of the series, as this test is recommended by Im-Pesaran-Shin especially in case of an unbalanced panel layout.

Table 6.5: Unit Root Tests

Series	**t-statistics (at level)**
TFP	-27.99***
TRGI	-12.786***
FIGI	-81.899***
CUGI	-49.581***
IPGI	-47.632***
INGI	-34.986***
POGI	-46.780***

Source: Authors' calculation (Here *, ** and *** illustrates level of significance at 10%, 5% and 1% respectively)

The unit root test results in Table 6.5 reveal that all the series used are stationary at level. As a consequence, no evidence has been found of long-term co-integration, thus accept the null hypothesis of H3, which prohibiting further testing through Johansen Cointegration test. Therefore, it can also be concluded that there is no long-term causal association between globalization dimensions and firms' productivity.

The VAR test will now be used here to figure out the short-term causal effect. The study used AIC and SIC criteria for selecting the lag length for VAR analysis. The study choose lag length up to 3 lags as the values of AIC and SIC criteria were found lowest at third lag.

Therefore, the equations formulated to evaluate short-term causality in the VAR Granger Causality Model are shown below:

$$TFP = C(1)*TFP(-1)+C(2)*TFP(-2)+C(3)*TFP(-3)+C(4)*TRGI(-1)+C(5)*TRGI(-2)+C(6)*TRGI(-3)+C(7)*FIGI(-1)+C(8)*FIGI(-2)+C(9)*FIGI(-3)+C(10)*INGI(-1)+C(11)*INGI(-2)+C(12)*INGI(-3)+C(13)*IPGI(-1)+C(14)*IPGI(-2)+C(15)*IPGI(-3)+C(16)*CUGI(-1)+C(17)*CUGI(-2)+C(18)*CUGI(-3)+C(19)*POGI(-1)+C(20)*POGI(-2)+C(21)*POGI(-3)+C(22)$$

Table 6.6: The Result of Vector Auto Regressive Granger Causality Test

Variables	**Coefficient**
TFP (lag 1)	0.138***
TFP (lag 2)	0.197***
TFP (lag 3)	0.127***
TRGI (lag 1)	0.003
TRGI (lag 2)	0.014
TRGI (lag 3)	0.014**
FIGI (lag 1)	-0.016
FIGI (lag 2)	-0.017**
FIGI (lag 3)	-0.012
INGI (lag 1)	-0.053***
INGI (lag 2)	-0.014
INGI (lag 3)	0.008
IPGI (lag 1)	0.091**
IPGI (lag 2)	0.004
IPGI (lag 3)	-0.004
CUGI (lag 1)	0.023
CUGI (lag 2)	0.073
CUGI (lag 3)	-0.002
POGI (lag 1)	-0.058
POGI (lag 2)	-0.188
POGI (lag 3)	-0.080
Constant	26.951**
F-statistic	97.789
Prob(F-statistic)	0.000
Durbin-Watson stat	2.029

Source: Authors' calculation (Here *, ** and *** denotes 10%, 5% and 1% level of significance, respectively)

Where, TFP is the total factor productivity as the dependent variable. TRGI, FIGI, INGI, IPGI, CUGI and POGI are independent variables. The lag 1, lag 2 and lag3 is represented by (-1) (-2) and (-3) respectively. C is the coefficients of the concerned parameter 1, 2, ... 21 and C(22) is the constant.

Table 6.7: Statistics of One-Way Granger Causality (Wald Test), for the three lags of Independent Variables

Variable	**Coeff. (Chi-square)**
TRGI (lag 1, lag 2 and lag 3)	16.115***
FIGI (lag 1, lag 2 and lag 3)	21.268***
INGI (lag 1, lag 2 and lag 3)	18.724***
IPGI (lag 1, lag 2 and lag 3)	5.676
CUGI (lag 1, lag 2 and lag 3)	3.897
POGI (lag 1, lag 2 and lag 3)	5.218

Source: Authors' calculation (Here *, ** and *** illustrates level of significance at 10%, 5% and 1% respectively)

The result of VAR Granger Causality Test is illustrated in Table 6.6 which shows the outcome for causality in the short run. Trade, financial and informational globalization formed causality with firms' productivity either at first, second or third lagged values, whereas cultural and political globalization failed to cause firms' productivity at all of their lag values. Now, to test whether these globalization's dimension particularly, the trade, financial and informational globalization jointly (at all the lagged values) causes firms' productivity in the short run, the study employs Wald Test. The Wald test result in Table 6.6 shows that at the joint lags, only the coefficients of trade, financial, and informational globalization are significant, thus, reject the null hypothesis of H3a, H3b, and H3c and accept the null hypothesis of H3d, H3e and H3f. Therefore, the result establishes that trade, financial and informational globalization are causing firms' productivity in the short run.

6.3 Discussion

It is evident from the assessment that trade, financial, informational and political dimensions of globalization are correlated with the firms' productivity, however when it come to causation the former three dimensions causes the firms' productivity but the last one i.e. the political globalization failed to establish any causal effect on the productivity of firms operating in India.

The results illustrating trade globalization causing firms' productivity is in line with the previous literature as international spillover effect caused by international trade leads to productivity enhancement [207], [208], [209]. Trade globalization index here is illustrated by the trade in goods and services and the trade partner diversity. In context of international trade, globalization has given firms access to foreign markets, allowing them to specialize and achieve economies of scale. Internationally competitive firms are most likely to adopt best-practice technologies which leads to improve the firm's productivity. Subsequently, it has also provided access to imported intermediates and capital goods. India's imports of intermediates and capital goods has also been validated by the India's import statistics reported by world integrated trade solution [210], the proportion of intermediate goods in India's overall imports has ranged between 30 and 35 percent over time, while the proportion of capital goods has ranged between 18 and 22 percent. As a whole, both intermediates and capital goods constitute a significant portion of India's total imports and as concluded by the previous studies, the imports of intermediates and capital goods have a positive effect on the productivity of the firms [211].

The Hirschman Herfindahl index is a measure to represent the trade partner diversity and it was used by the KOF globalization index to discredit the ragionalization and highlight globalization in a concrete way. The HH index value ranges from 0 to 1 [212]. An index value near to "1" indicates that a country's trade is concentrated in a small number of foreign markets and a nation with a perfectly diversified global trade, on the other hand, would have an index value near to "0". Over the years India's Hirschman Herfindahl index value is in between 0.04 to 0.06 which is close to zero, thus India's diverse trade portfolio seems to benefit the firms in context to their productivity improvement.

The productivity of the firms is found to be caused by financial globalization. The fundamental concept underlying the nature of foreign direct investment (FDI) spillovers is that foreign-invested companies are technologically advanced, and that expertise is transmitted by their contacts with domestic firms, resulting in productivity gains. There are a number of well-studied processes by which such spillovers can occur. Horizontal spillovers, also known as intra-sector spillovers, occur when FDI firms' technology and expertise is passed to their competitor within the same industry. Spillovers that travel up the value chain from international intermediary vendors to domestic manufacturers, or more often, from foreign-invested companies to domestic input vendors, are known as vertical or inter-sector spillovers [213].

The index for informational globalization involves parameters like patent filed by non-residents, export of high-technological items etc. Non-residents registered 2328 patents in 1991, followed by 6332 patents in the year 2000. Since then, the amount of patents filed by nonresidents has risen exponentially, with the number of patents filed by nonresidents per year ranging between 30000 and 35000 from 2010 to 2019 [214]. Since 2009, the export of technically superior goods has been around 7 to 10% of total merchandise exports of India; whereas, in absolute terms, India exported US$ 11.35 billion of high-technology products in 2009 and nearly doubled the volume of export to US$ 23.64 billion in 2019. Therefore, in context to informational globalization, patents filed by foreigner and the export of technologically superior goods seems to have the positive impact on the productivity improvement of the

firms in India. Whereas, considering the parameters used to represent the interpersonal, cultural and political dimension of globalization and as concluded by the study, it is evident that these dimension may have no direct or indirect impact on the productivity of the firms.

Chapter 7

FINDINGS OF THE STUDY

The present study was on assessing the impact of different globalization's aspects on Indian economy as a whole and on the performance of the firms operating in India. As explain in the previous chapter, performance is measured both in terms of financial performance and productivity. The study also tries to investigate the existence of causality between globalization (dimension-wise) and economic growth as a whole and also on the performance of the firms operating here. The following are the study's major findings:

- The study shows that there is association of globalization's dimension with economic growth of India in the long run. Nevertheless, the study reveals that globalization as a whole causes the Indian economic growth in the short run too.

- The studies reveals that international capital inflow through various channels such as foreign investment (both direct and institutional), International primary income and foreign debt has contributed immensely in Indian economic growth and growing Indian economy have further encouraged the international capital inflow.

- The study shows that the economic globalization is positively associated with the firms' profitability; on the contrary, the political globalization establishes inverse association with firms' profitability whereas social globalization forms no such association with the profitability of firms in India.

- The study finds that, over the period of the investigation, globalization has increased business profitability irrespective of the sectors, though the scale of profitability varies among sector.

- According to the study, globalization has had the greatest impact on the financial performance of firms in the information technology industry, followed by the mining sector's firms. Compared to other industries, textiles, telecommunication and transport services sector's firms have experienced low financial performance.

- The study finds no convergence between globalization's dimensions and firms' profitability in the long run. However in the short run, the economic and political dimensions of globalization was found to cause the profitability of the firms operating in India.

- The study shows that trade and interpersonal globalization index form positive connection with the productivity of firms in India. Whereas, informational and political globalization forms negative association with firms' productivity.

- The study finds that the globalization as a whole leads to productivity improvement of firms in India.

- The study reveals that the firms from consumer goods sector and transport services sector followed by the wholesale and retail trading sector of India have maximum productivity improvement due to the process of globalization. The productivity growth was least among the firms from financial services sector followed by the communication services sector.

- The study shows that there is no long run co-integration between globalization's dimensions and firms' productivity. In the short run, trade, financial and informational dimensions of globalization established the causal linkage with the productivity of the firms.

Chapter 8

CONCLUSION AND IMPLICATIONS OF THE STUDY

The conclusion of the study is in three parts, first portion concludes the impact of globalization on economic growth a macro-economic variable, second and third portion conclude a sector-specific investigation conducted (at micro level) to examine the impact of globalization on the firms' financial performance and firms' productivity, respectively.

Several studies have been undertaken to assess the effect of different dimensions of globalization on economic growth of India. Unfortunately, the theoretically as well as empirically derived findings were in contradiction with each other. Many factors leads to such results, so to speak the effect of globalization is different across globe and largely depends upon the time period, method and the country/ unit considered for analysis etc. However, the measurement technique used to measure globalization and its dimensions may be one of the prominent factors responsible for such contradictory conclusions. The way researchers quantify globalization and its other components/ dimensions have evolved over time. The studies used a single variable to represent globalization, at initial stages of investigation to the current practices of developing the composite index to evaluate globalization and its other dimensions/ sub-dimensions. This study not only tries to establish any association but also investigate the causal connection of various aspects of globalization to Indian economic development by utilizing the widely acknowledged KOF globalization index. This paper sheds light on the causal linkage between the dimensions of globalization and Indian economic development, by utilizing the detailed KOF globalization index. Therefore, the key focus of this analysis lies in the comprehensiveness of the index.

The research uses country-specific methodology since the effect of the globalization process is complicated and differs between nations. This work therefore focuses on India, particularly the Indian economic growth and the performance of businesses involved here. Initially, the work tries to explore the cause-effect relationship between the globalization's dimensions and India's economic growth. The results demonstrated total convergence between the globalization and Indian economic growth in the long-term. This established long run association of globalization's

dimensions with economic growth of India. Similarly, when tested for short run causality, all six globalization sub-dimensions namely Trade globalization, financial globalization, interpersonal globalization, informational globalization, cultural globalization and political globalization developed multivariate causality, with Indian economic growth in the short term. In pair-wise causality assessment to find out the direction of causality the study found that the financial globalization and growth are affecting each other and establishing bidirectional causality. However, in case of Trade, interpersonal and informational globalization, GDP has caused them, thus established unidirectional causality towards them.

The policy implies that Indian governments should recognize the value of globalization, and should quickly follow the ever-changing phenomenon of globalization and focus on developing clear strategies accordingly. The government of India must encourage foreign investment, as rising investments will result in a higher growth and vice versa. Only financial globalization and GDP complements each other out of all sub-dimensions paired individually with GDP. Government of India must pursue reforms in order to provide an investment-friendly environment, because in general, foreign investment leads to economic growth and carry best management practices and technologies adopted globally. It is also important that other facets of globalization, especially in the long run, are reviewed so that strategy can be coordinated in order to make the maximum use of these. The study reports that globalization is integrating with Indian economic growth on a long-term basis and government must continue with their structural reforms in creating a vibrant free market economy and enable market forces to play their part in transforming India's fate.

As the intent of the work was not to restrict itself with analyzing macroeconomic variable as economic growth of India, we aimed to conduct firm-level investigation on the effects of various aspects of globalization on firms' performance. Therefore as defined in the earlier chapters, the study have interpreted firm performance both in term of firms' financial performance (profitability) and also in terms of firms' productivity and have analyzed the effects of various globalization's dimensions on them separately. The study used data of firms operating in fourteen different sectors of Indian economy namely Food and Agro Products, Chemicals and Chemical Products, Construction Material, Consumer Goods, Mining, Metal and Metal Products, Textile, Transport Equipment, Communication services, Wholesale and Retail Trading, Hotel and Tourism, Information Technology, Transport Services and Financial Services for the period from 2000 to 2018 and formed two different unbalanced panel data model for further investigation.

The study addresses the effect of the economic, political and social dimension of globalization on firms' profitability in India. For the last twenty-five years, Indian economy has been globalized, making it necessary for such empirical examination into the essence of the relationship between globalization's dimensions and firm profitability in India. The economic and political dimension of globalization found to have association with firms profitability, social dimension of globalization failed to found any such association. Where the profitability of the firms was supported by economic globalization, political globalization formed adverse relationships. The result of sector-specific assessment of firms' profitability as illustrated by the overall intercept coefficients ascertain that globalization's dimensions have

improved the firms' profitability all across the sectors. Information Technology, Hotel and Tourism, Mining, Chemicals and Chemical Products etc, are the sectors whose firms have benefited most in context to their profitability from the spread of globalization and firms from textiles, telecommunication services and transport services registered lower profitability relatively over the period of time, in comparison to others sectors. The work failed to established long run integration between different dimensions of globalization and firms' profitability. When tested for short run causality, the results demonstrate that the social dimension of globalization doesn't have any value-adding consequences in firms' profitability, however, the results find out the multivariate causality between economic and political dimension of globalization and the profitability of the firms in India. As economic globalization have caused profitability of firms in India, the Indian Government should continue its efforts with the enactment of policies encouraging trade and financial openness, which involves systematic reduction of tariff and non-tariff restrictions and swift flow of trade and capital.

Furthermore, political globalization cause the firms' profitability negatively at least in the short run. Therefore, the policymakers must ensure that the trade agreements of India with other nations must be a win-win scenario. The continuous flow of information about trade agreements is perhaps even more relevant, because as per the report published by Saraswat et. al. [199] in economic times, the rate of utilization of regional trade agreements by Indian exporters is very low i.e. less than 25%. The reasons responsible for under-utilizing trade deals are the improper information flow from top to bottom, lesser margins of preference and differential treatment towards products based on their country of origin, and trade compliance cost. Before finalizing new trade contracts, the study suggests that India should evaluate its prevailing trade agreements in the light of their gains for India and all the stakeholders. Government must optimize the margin of preference and trade complementarities that can favour India, when enduring such agreements. Steps must be taken to reduce the cost of compliance and regulatory delays must be avoided for the efficient utilization of the trade deals. Well-negotiated and fair trade agreements that take care of the best interest of all stakeholders are the need of the hour.

Another most important aspect of our study is to evaluate the impact on firms' productivity as an influence of globalization and its components, namely trade, financial, informational, interpersonal, cultural and political globalization. The study used growth accounting model to derive total factor productivity. The results established that globalization have improved the productivity of firms irrespective of the sectors they belong to. The differential coefficients revealed that the growth of sector-wise productivity of firms varies across sectors. The investigation indicated a more pronounced growth in terms of productivity of the firms in case of consumer goods sectors followed by wholesale, retail and trading sector and, comparatively least in the financial sector and communications sectors. The study failed to establish the long run co-integration between the globalization's dimensions and the firms' productivity, which means no convergence is happening between globalization and the productivity of firms operating in India, in the long run. However, when tested for short run causality, trade, financial and informational globalization found to have caused the productivity of firms.

The policies must be framed to encourage trade as it is the cause of productivity improvement however, it must be framed to reduce the trade imbalance, which includes systematic reduction of imports and boost the export, by encouraging the firms to produce and export high-technology product. As export of high-technology product is one of the major component of informational globalization which is also causing the firms' productivity. Export of high-tech goods allow the firms to assess the markets of advanced economies, ensuring the strong productivity growth premium, which is in line with the theory of "learning by exporting" and results in further improvement of firm's productivity. As, the sophistication of an economy, degree of international competitiveness, and future capacities are all reflected by the involvement of their firms in high technology exports. Financial globalization has led to productivity improvement of firms, at least in the short run. The overall development of the domestic economy through large capital inflow is evident as a result of encouraging FDI, moreover, it also leads to improvement in the firms' productivity by allowing technology to transfer and getting assess to business know-how. Therefore, the government as well as the firms must play an important role in encouraging the foreign investment by promoting and sustaining a business environment that is friendly and profitable.

The component of interpersonal globalization such as international voice traffic, foreigners as a proportion to country's population, transfer and international tourism seems not to be directly related with the productivity of the firms in India. The components of cultural globalization such as per capita McDonald's restaurant and IKEA stores, exports and imports in cultural goods, and personal services, neither they are directly affecting nor they seems to affect the firms' productivity. The possible explanation of interpersonal globalization not causing firms' productivity may be because the parameters used to determine interpersonal globalization index is dominated by westernization phenomenon than the globalization. As witnessed in the past, KOF index use to update/ upgrade their variables/ factors and measurement techniques time to time. The reduction or elimination of westernization phenomenon in the index may produce different results in context to firm's productivity in future. In context to India, the political globalization failed to depict clear-cut connection with the productivity of the firms. The factors which constitute KOF political globalization index such as the number of embassies around the world, membership of international NGOs and participation in UN peacekeeping mission may seems to reflect the political and strategic dominance of a country globally but may not seems to have any direct or indirect association with the firms' productivity.

Finally, considering some important dimensions of globalization causing both the firms' financial performance and firms' productivity irrespective of the sector the firms belong to, the study suggests that firms should increase the nature and scope of their international involvement. Subsequently, firms must undergo new ventures internationally to take advantages of contemporary management and technological practices which will improve the productivity of the firms and boost the economic growth of that economy as a whole.

Chapter 9

LIMITATION AND FUTURE SCOPE OF THE STUDY

Since the study was performed on India, the study took a country-specific approach to analyzing the effect of globalization. Thus, the generalization of findings to other economies is a matter of further research, as the impact of the globalization process is complex and differs among nations.

Data is readily available for macroeconomic variables, but when it comes to microeconomic variables, such as firm-level variables, data management in developing countries like India is still lacking. Missing values in financial and market data of firms also resulted in the exclusion of a considerable number of firms from the investigation; if this had not been the case, even bigger sample size of firms would have yielded much more refined outcomes/ findings.

Furthermore, databases reporting financial and market data for firms in India are very few and costly to assess/ subscribe to.

Also, the studies issued by the Swiss Economic Institute for globalization indices are released with a few years gap, usually two and a half to three years, limiting real-time research on the subject matter.

Similar research on other countries or groups of countries may be conducted in the future to develop a broader understanding of the topic.

The de facto measures of globalization indices are used in this analysis because they depict actual flow and activities; however, incorporating the de facto and de jure globalization indices both, with various macroeconomic variables, would certainly add value to the current literature.

In fact, comparing the indices of globalization to the composite index of economic growth may provide new insights; however, this is subjected to further investigations in the future.

The present study created a panel of companies/ firms from fourteen different sectors of the Indian economy; however, in the future, a sector-specific panel may be developed to examine the effect of globalization on a specific sector or industry.

LIST OF PAPER PUBLICATIONS

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SYNOPSIS

Report

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Department of Humanities and Social Sciences

Jaypee University of Information Technology, Waknaghat

EXPLORING AND ESTABLISHING LINKAGES OF GLOBALIZATION WITH FINANCIAL PERFORMANCE AND PRODUCTIVITY OF FIRMS

NAME OF THE CANDIDATE: BALRAJ

ENROLLMENT No.: 166802

SEMESTER: 10th

SUPERVISOR: DR. AMIT SRIVASTAVA

DATE OF SUBMISSION: 14/03/2021

BALRAJ
Name and Signature of the Candidate

Dr. Amit Srivastava
Name and Signature of Supervisor

TABLE OF CONTENTS

I. INTRODUCTION

Globalization process influences almost every aspect of life, for instance, it affects the environment, culture, political systems, economic growth and prosperity, human development etc. (Kefela, 2011). The globalization phenomenon is so comprehensive and multifaceted that understanding globalization as a whole is complicated. Therefore, it has no single/ specific definition as it depends on the authors' background and also on the intent and scope of the matter chosen for discussion. In general, globalization refers to the economic, political and socio-cultural interconnectedness across international boundaries. The scale and scope of developments as an outcome of the process of globalization, in the changing world's economic order, has encouraged emerging economies to adopt globalization practices. The comprehensive policy reforms brought out by the government of India in the early nineties and thereafter was aimed to ensure consistent and speedy growth of the economy by making it more efficient and globally competitive. Therefore, experiencing more than two decades of the era of globalization, it is pertinent to examine the impact of the various dimensions of globalization (namely trade, financial, cultural, interpersonal, informational and political) on the economic growth of India.

Globalization has a profound impact globally especially the way government and firms perform business. Firms are an important component of any economy in the sense that the growth and development of the economy depend largely on the success of their firms. Firms have adopted sophisticated business practices being generated out of the dynamics of globalization which has enabled firms to look beyond their national boundaries and develop new potential markets around the world. Companies operating internationally are less vulnerable to slowing demand across one or a few countries and get benefited by realizing the economy of scale and scope. However, on the other side, the firm encounters the increasing numbers and intensity of competitors. Globalization has become a universal phenomenon and as a consequence, the Indian economy as a whole and the firms operating here are inevitably affected by the process of globalization. Hence, examination of globalization's dimension-specific impact on the financial performance and productivity of the firms is of utmost importance.

Although globalization is not a new phenomenon it emerged more forcibly after World War II. With the end of world war-II in 1945, the integration of economies started and this process got tremendous impetus with the integration of communist bloc countries in the global market economy after the cold war ended in 1991, as earlier they had intentionally kept themselves isolated from the west capitalistic economies. India has also adopted the path of global integration by liberalizing its economy since 1991. As in early 1991, there erupted an unforeseen balance of payments crisis. Thus, a detailed plan for structural adjustment and

reform was drawn up in June 1990. Since then, India's share in world merchandise plus services exports has improved significantly from 0.5 per cent in the nineties to 2.1 per cent in 2017. India's trade as a percentage to the gross domestic product in the financial year 2016-17 was around 40 per cent which signifies India as the fairly integrated and open economy (The World Bank, 2018).

The continuous advancement in information technology and advanced means of transportation are acting as a catalyst to further accelerates the globalization process as they are capable of connecting the people across the world, thereby allowing the swift sharing of knowledge, ideas and cultural practices (Tisdell, 2004). In the economic sense, this includes reducing restrictions and thereby increasing flow on trade and investment. A significant number of emerging and developing countries have also benefited from the process of liberalization and increased trade openness which thereby further encouraged others to adopt globalization policies and practices. However, globalization is far more than just development, the proliferation of foreign trade and cross border exchange of factors of production. Now the government not only takes into account the domestic factors but also the global factors that can affect its decisions while framing policies concerning the nation’s prosperity, stability and social equity. At the moment, the cost of keeping oneself away from the rest of the world is too high. Thus in order to help their country adjust into the globalization process, the role of government is crucial and cannot be denied irrespective of the fact that it had led to a considerable decline in government autonomy.

Firm Performance is a relevant concept globally and despite its importance, there is hardly any agreement on its definition, dimension and calculation that restricts research advancement in this field. To represent the firm’s performance the most common choice has been the accounting measure of financial performance i.e. (profitability). Many researchers have also recommended productivity or production efficiency as described by Venkatraman and Ramanujan (1986) as another measure of firm performance. The study uses both accounting-based measures such as return on assets (ROA), return on capital employed (ROCE) or returns on investment (ROI) and efficiency based measure as total factor productivity (TFP) to measure firm performance, separately. However, the study admits the fact that profitability and productivity are not the only two ways of measuring the firm’s performance, as performance is a multi-facet concept. There is an inseparable connection between globalization and productivity growth. Because more globalization, by fostering more competition, will increase competitiveness and thus increase productivity. Increasing productivity could also facilitate more globalization, providing companies with the necessary leverage for access to foreign markets. Over recent decades there has been a substantial reduction in trade barriers and it has further encouraged the global

economic activities. Globalization promoted the transfer of technology, creating efficiencies among businesses, as well as dramatically increasing FDI flows and trade.

Globalization has once again been the epicentre of discourse and has brought more focus to researchers/economists/policymakers as economically advanced countries such as the United States and the United Kingdom, who have represented themselves as advocates of globalization and who have thus illustrated and spread the concept of globalization in the second half of the 20th century are now suppressing/ limiting it. The determination of the President of the United States to revise trade arrangements with their trading partners and the desire of Britain to renegotiate their economic ties with the European Union as a result of their declaration in favour of the Brexit is definitely not in accordance with their former ideology of globalization. Now, the US-China trade war is reaching another point and hammering financial markets around the globe, thus in the long run, posing a great threat to globalization phenomenon that has grown in the past half-century or so.

In view of the changing circumstances, India is supposed to make an analytical assessment of its position on globalization. The study seeks to figure out empirically whether there is a relationship between the globalization and economic growth of India. Not only this it will also explore the causal connection between the different aspects of globalization (i.e. trade, financial, cultural, interpersonal, informational and political) and the economic growth of India. The aforementioned details would address the need for a macro-level assessment of the impacts of various aspects of globalization on the overall economic growth, but by acknowledging the fact that it's not the nation that trade or invest instead firms do it is also important to analyze how this affects the country at micro-level (i.e. at firm-level).

2. REVIEW OF LITERATURE (few selected papers)

Globalization and Economic Growth Linkage:				
Papers	**Nation**	**Period**	**Globalization's Proxy/ Parameter**	**Result**
Rodriguez and Rodrik (2000)- Meta-analysis	OECD Countries	Post-1945 period	Trade restrictions	No reliable evidence that proves trade restrictions are related to higher economic growth
Jang (2000);	East Asian economies	1955–95	import/GDP ratio for openness	The impact of globalization is not consistent among all nations. Highlighted government's role and the country's capabilities. if well handled, globalization could be a potent force for growth.
Stiglitz (2003)				
Lee et al. (2004)	100 countries	1961-65 to 1996-2000	The proxies for openness were the size of trade (Trade to GDP ratio), the tariff index, import duties and the black market premium (the difference between the official exchange rate and black market rate)	Openness has a positive impact on growth
Aka (2006)	Côte d'Ivoire	1969-2001	Trade to GDP	
Zhuang and Koo (2007)	19 developed and 37 developing countries	1991 to 2004	Economic globalization (foreign direct investment, portfolio capital flow and trade)	Globalization has a positive impact on growth (across all countries).
Afjal (2007)	Pakistan	1960 to 2006	Total trade to GDP and Net capital flows to GDP	A significant association of trade openness and financial integration with economic growth.
Polasek and Sellner (2011)	27 European Union countries	2001 to 2006	Technology transfer:- Inward FDI stock to GDP. Trade openness:- Total trade to GDP.	The positive effect of globalization on economic growth. Primarily due to trade disparities and foreign investment
Moghaddam et al. (2012)	India, China, Japan, Brazil, Singapore, Malaysia, Turkey and Iran.	1980-2010	FDI, exports and imports.	The report affirms the statistical association of foreign direct investment and gross domestic product with economic growth in developing countries.
Ray (2012)	India	1991-2011	Two openness measures:	Globalization has a long-term relationship with economic growth
			1. Total Trade to GDP.	
			2. Net capital flow to the GDP	
Umaru et al. (2013)	Nigerian economy	1962-1985 and 1986-	Trade and Financial Liberalization	The cumulative effect of globalization has yielded

		2009. Pre & Post globalization period		promising effects on the Nigerian economy's economic growth.
Meraj (2013)	Bangladesh	1971 to 2005	Exports and imports of goods and services	Exports facilitated economic growth and advocated for import restriction.
Dreher (2006)	123 countries	1970 to 2000	KOF Globalization Index	Globalization accelerates growth.
Rao et al. (2008)	Thailand, Malaysia, India, Singapore and the Philippines	1971-2004 [1971-1975: 2000- 2004]	KOF globalization index	The impact of globalization is not consistent among all nations.
Chang and Lee (2010)	23 OECD countries	1970 to 2006	KOF globalization index	Uni-directional causality of globalization towards growth in the long run. Weak causality in short-run
Mutascu et al. (2011)	Romania	1970 to 2007	KOF globalization index	Globalization is a must to achieve maximum growth
Leitao (2012)	United States	1995 to 2008	KOF globalization index	Foreign direct investment, economic globalization, cultural globalization and political globalization foster growth
Samimi et. al (2014)	33 OIC countries	1980–2008	KOF globalization index	The positive impact of economic globalization on growth
Ying et al. (2014)	ASEAN countries	1970 to 2008	KOF globalization index	Economic globalization has Positive impact on growth. Social globalization has a negative impact on growth.
Savrul et. al (2017)	10 ASEAN	1970-2015	KOF globalization index	Globalization has a significant impact on economic growth
Kilic (2015)	74 developing countries	1981 to 2011	KOF globalization index	Economic and political globalization has increased economic growth. Social globalization showed negative correlation with growth.
Olimpia et al. (2017)	Romania	1990 to 2013	KOF globalization index	
Titalessy (2018)	20 Asian Pacific countries	2000 to 2014	KOF globalization index	

Empirical Analysis of Globalization and Firms' Profitability:				
Thoumrungroje (2004)	208 companies, i.e. 58 from US and 150 from Thailand		Managers' satisfaction in terms of return on investment, sales goals, profit goals, and growth	Global business prospects favour firm profitability and global competitive pressure influence the performance negatively.
Kraemer (2005)	2139 firms from 10 countries	A telephone survey: Feb - April in 2002	Firm globalization: (1) headquarters abroad (2) other establishments abroad (3) international sales (% of total sales); (4) international procurement (% of total procurement) and (5) Competitors from abroad	The net effects of globalization were positive for firm performance.
Sledge (2006)	50 MNCs from developed and 50 MNCs from developing nations	1997 to 2001	Foreign sales as a percentage of total sales, foreign assets as a percentage of total assets and foreign employees as a percentage of total employees.	Greater internationalization leads to higher sales and revenue for these firms.
Asiedu & Freeman (2007)	4055 SMEs of USA	2003	Used total exports and exports by SMEs	Globalization has a negative effect on the performance of SMEs
Georgiou (2011)	OECD countries	1999-2009	Total trade to GDP	Globalization has a positive effect on the profitability of corporations in Europe.
Akinola (2012)	25 Nigerian banks	1999 to 2007	Foreign ownership in the shareholders' funds	Globalization has greatly increased the performance of banks in Nigeria.
Karadagli (2012)	China, India, Brazil, Indonesia, Turkey, Russia and Mexico.	1998-2009	KOF Index of Globalization	Globalization produces performance-enhancing consequences for firms and also creates increased opportunities for emerging countries.
Haghi et al. (2015)	12 selected countries in Asia	1997 to 2013	KOF Index of Globalization	Globalization has led to an increase in the firm's stock
Akdogan (2018)	142 Turkish listed companies	2001-2010	KOF Index of Globalization	A decrease in operating profit as a result of the globalization of Turkish companies. The decline in sales and the cost of goods sold.

Empirical Studies of Globalization and Firms' Productivity				
Weiss (1992)	Mexican manufacturing sector	1975-1988	Trade Liberalisation Variables: - estimates of nominal and effective protection - estimates of the share of imports in total internal demand - estimates of the coverage of import licences, and official reference prices	A positive, but the weak effect on productivity
Krishna and Mitra (1998)	Companies from Indian industries	1986 to 1993	Trade liberalization	The study concluded with less evidence of increased productivity.
Mello (1999)	OECD and non-OECD countries	1970-1990	Financial openness: foreign investment	Foreign investment supporting growth and productivity
Balakrishnan (2000)	2300 Indian manufacturing firms	1988 to 1998	Trade liberalization as significant reductions in the tariff rate	No signs of productivity growth of firms.
Sharma et. al. (2000)	Nepalese manufacturing sector	1972-1973 to 1993-1994	TFP growth in the pre-and post-reform periods	Neither trade liberalization nor export prospects had an impact on productivity.
Chand and Sen (2002)	Indian manufacturing sector	Five-year periods: 1974–78, 1979–83, and 1984–88	Changes in Protection	A positive impact on total factor productivity
Kiran & Kaur (2008)	Indian manufacturing sector	prior to 1991 and post-1991 (1981 to 2003)	Comparison of the Growth rate of Productivity	TFPG growth was higher in pre-liberalisation than in post-liberalisation
Abizadeh and Pandey (2009)	20 OECD countries	1980-2000	Traditional openness: Trade to GDP. Real openness: Trade to GDP in PPP term	Out of three Agriculture, Manufacturing and Services sector, only in the case of Services sector trade openness have a favourable and significant effect on the TFP growth
Kose et. al. (2009)	Cross-country dataset	1966 to 2005	Financial openness: De jure capital account openness. De facto financial integration is the ratio of gross stocks of external liabilities to GDP	TFP growth is powered by foreign direct investment and private equity liabilities, while external debt is in fact negatively correlated with TFP growth.

Bandara (2013)	27 manufacturing industries from Sri Lanka	1978 to 1998	Changes in Protection	Globalization, driven by open economic policies, is inadequate for productivity growth
Rath and Parida (2014)	India, Pakistan, Sri Lanka, Bangladesh and Nepal	1980 to 2011	Trade openness	Trade openness boosts productivity in the short run.
Sandra Lancheros et al. (2015)	8015 Indian manufacturing firms	1998 to 2009	Exports and Outward FDI	Exports and Outward FDI increased productivity
Haider et al. (2019)	Indian Economy	1970 to 2011	Trade openness: Trade as a percentage to GDP.	Existence of long-run co-integration among openness and TFP. Trade openness causes TFP.

Source: Authors' compilation

3. RESEARCH GAP

- The studies testing the dimension-specific impact of globalization on the economic growth are limited and particularly, on firms' performance and productivity are very few and in the case of India are even rare.

- As per the authors' knowledge, there is no study which examine the dimension-specific impact of globalization on the overall economic growth of a nation and the financial performance and productivity of firms operating in that nation.

- Majority of the studies considered firms form manufacturing sector [Weiss (1992); Balakrishnan (2000); Sharma et. al. (2000); Chand and Sen (2002); Kiran & Kaur (2008); Bandara (2013); Sandra Lancheros et al. (2015)] only and one considered software industry [Sahoo (2013)] of India and ignored the firms from other sectors of the economy.

- The sample size is relatively bigger i.e. 912 firms.
    - Balakrishnan (2000) : 2300 Indian manufacturing firms
    - Thoumrungroje (2004) : 208 companies,
    - Sledge (2006) : 100 MNCs
    - Akinola (2012) : 25 Nigerian banks
    - Akdogan (2018) : 142 Turkish listed companies

- Initially, studies same proxies like trade integration, foreign ownership, foreign sales to total sales etc. to represent trade liberalization or globalization. Later on, the economic component of globalization got prominence and globalization was illustrated by indicators like trade openness and/ or financial openness. They failed to illustrate the comprehensiveness of the globalization phenomenon as they totally ignored the social and political component of globalization.

- Whereas the Firm's financial performance is concerned stock price was taken as an indicator of financial performance earlier and later the used of profitability ratio was limited to any single profitability ratio like ROA, ROCE or ROI.

- The studies on this subject matter had restricted themselves with establishing the association between the globalization and economic growth; the globalization and firms' financial performance; and the globalization and firms' productivity. They have not extended their investigation to find out any causal association between them separately.

Research Questions

- Is there any association of globalization's dimensions with economic growth of India?
- Whether globalization's dimension causes economic growth of India in the long as well as in the short run?
- Which particular component/ components of globalization pushes/ push the economic growth?
- Is there any association of globalization's dimensions with the firms' financial performance?
- What is the impact of globalization on the financial performance of firms from different sectors?
- Whether globalization's dimension causes the financial performance of firms in the long as well as in the short run?
- Is there any association of globalization's dimensions with the firms' productivity in India?
- What is the impact of globalization on the productivity of firms from different sectors?
- Whether globalization's dimension causes the productivity of firms in the long as well as in the short run?

4. OBJECTIVES OF THE STUDY

The effect of globalization is not uniform among the nations and cannot be seen as a certain solution to a country's success. Pursuing a strategy of globalization, as it fully modifies the functions of a nation, is one of the few bold decisions taken by any government. It became even more difficult when the policies of globalization were embraced not by preference but by compulsion by a nation like India. Hence the need for an empirical analysis of available data in order to assess the effect of globalization on Indian economic growth is necessary after undergoing globalization policy since 1991. The research is not limited to exploring the impact of globalization on macroeconomic factors such as economic growth, as it will present an aggregate picture of the Indian economy. Also, the study accredits the fact that it's not the country which performs economic activities such as trade or investment etc. rather firms do. Therefore, the sector-specific findings can, however, differ, the study, therefore, sought to pursue the firm-level analysis of the impact of various aspects of globalization policies on the performance of firms operating in India in 14 different sectors. Specific studies define firm's performance differently and the study chose two sets of relevant performance indicators based on accounting measures such as return on assets (ROA), return on capital employed (ROCE), and return on investment (ROI), as well as productivity measurement as total factor productivity, rather than only choosing one of many proxies to measure the performance of the firm. This allows us to examine the effect of different dimension of globalization on firms' profitability and firms' productivity separately. Therefore, the following objectives have been set:-

- To examine the impact of various aspects of globalization on economic growth. Also to investigate short- and/or long-term causal phenomena between them.

- To investigate the effect of globalization on the performance of firms operating in India. Also to investigate short- and/or long-term causal phenomena between them.

- To investigate the effect of globalization on the productivity of firms operating in India. Also to investigate short- and/or long-term causal phenomena between them.

5. DIMENSIONS OF GLOBALIZATION AND ECONOMIC GROWTH OF INDIA

5.1 Methodology

The analytical research sought to examine the long-term or short-term causal impact on Indian economic growth of various aspects of globalization. The time-series data collection spans the period from 1991 to 2017. Two key sources were used for data extraction. Data of gross domestic product of India was collected from a World Bank database (The World Bank Data, 2018). Data for independent variables were taken from the annual reports published by the Swiss Economic Institute on KOF Globalization Index.

5.1.1 Model Specification:

The following regression equation was computed to analyze the first objective of the study:

$$ln\_GDP= \alpha_0+ \alpha_1 FIGI+ \alpha_2 TRGI+ \alpha_3 CUGI+ \alpha_4 IPGI + \alpha_5 INGI+ \alpha_6 POGI+\varepsilon \quad \text{..... (5.1)}$$

Where ln_GDP is the natural log of gross domestic product, FIGI, TRGI, IPGI, INGI, CUGI and POGI are financial, trade, interpersonal, informational, cultural and political globalization respectively. α_0 is the intercept and α_1, α_2, α_3,α_4, α_5 and α_6 are the slopes of the independent variables and ε represents the disturbance term.

5.2 Data Estimation Results:

As numerous other time-series statistics, before the causality test was carried out, the variables/series were reviewed for stationarity. Testing the series' stationarity is an essential condition for co-integration as well as causality tests.

Table 5.1: Unit Root Tests

Variable	t-stat (at level)	t-stat (at first diff)
Ln_GDP	1.07373	-5.63394***
TRGI	-0.994947	-7.015099***
FIGI	-0.15009	-4.48876***
INGI	1.32867	-4.26259***
IPGI	1.180547	-5.964206***
CUGI	-0.13236	-5.574151***
POGI	-1.711237	-6.712495***

(Source: Authors' calculation) (Here *, ** and *** represents significance level at 10%, 5% and 1% respectively)

5.2.1 Co-integration Test:

Co-integration is an important econometric property of time series data and a prerequisite for a long-run relationship between two or more series having unit-roots. It is essential to analyse the time series data for co-integration once the hypothesis for stationarity of the series is established. The null hypothesis is "there is no co-integration". The Trace test and Max-Eigen test demonstrate that the existence of 1 co-integrating equation at five percent level of significance, which implies that the six dimensions of globalization are associated with the log of GDP. The findings thus establish long-term co-integration. Therefore, the result directs us to use the VEC Granger causality test for further investigation.

5.2.2 Causality Test:

Granger causality test is a method used to assess the usefulness of one time series in predicting another time series (Granger. 1969). To get the automatic lag selection, the study used the Akaike Information Criterion (AIC) and Schwarz Information Criteria (SIC). The VECM equation is as follows:

$$\Delta(LN\_GDP) = C(1)*(CointEq) + C(2)*\Delta(LN\_GDP(-1)) + C(3)*\Delta(LN\_GDP(-2)) + C(4)*\Delta(TRGI(-1)) + C(5)*\Delta(TRGI(-2)) + C(6)*\Delta(FIGI(-1)) + C(7)*\Delta(FIGI(-2)) + C(8)*\Delta(INGI(-1)) + C(9)*\Delta(INGI(-2)) + C(10)*\Delta(IPGI(-1)) + C(11)*\Delta(IPGI(-2)) + C(12)*\Delta(CUGI(-1)) + C(13)*\Delta(CUGI(-2)) + C(14)*\Delta(POGI(-1)) + C(15)*\Delta(POGI(-2)) + C(16) \quad \text{……..... (5.2)}$$

Where "Δ" is the First-difference operator, (-1) and (-2) is the first and second lag of the corresponding variables respectively and C(1) is the coefficient of the co-integrating equation.

The sign of the coefficient of co-integrating equation i.e. C(1) is negative and statistically significant which confirm that the model is overall significant/ relevant. It also illustrates the existence of the convergence between the variables and convergence speed depends on the value of Coefficient of C(1). The findings of VECM, as summarised in Table 5.2, show the positive and significant impact of trade globalization on GDP at both lags i.e. lag 1 and lag 2, thus established the cause and effect relationship between the two. Financial, cultural and political dimension of globalization establish positive and significant causality with GDP either at lag 1 or lag 2. Whereas, the coefficient value of informational dimension at both the lags and interpersonal dimension at first lag are negatively significant. Majority of the variables mentioned in table 5.2 established a cause-effect relationship with GDP at either lag 1 or at lag 2. However, the study used Wald Test to determine whether or not they have been significant jointly i.e. at both the lags. It can observe from Table 5.3 that all dimensions of globalization are significant at 5

% level, ascertaining an overall multivariate causality with GDP i.e. the economic growth of Indian in the short run.

Table 5.2: Short-Run, One-Way Causality Testing- Vector Error Correction Model

	Coefficient
CointEq	-1.505***
Δ(LN_GDP (-1))	1.014***
Δ(LN_GDP (-2))	1.079***
Δ(TRGI (-1))	0.042***
Δ(TRGI (-2))	0.028***
Δ(FIGI (-1))	0.012
Δ(FIGI (-2))	0.036***
Δ(INGI (-1))	-0.079***
Δ(INGI (-2))	-0.048***
Δ(IPGI (-1))	-0.017**
Δ(IPGI (-2))	-0.007
Δ(CUGI (-1))	0.023***
Δ(CUGI (-2))	0.004
Δ(POGI (-1))	0
Δ(POGI (-2))	0.011***
Constant	0.01
R-squared : 0.879	**F-statistic : 9.218**
Adjusted R-squared : 0.784	**Prob(F-statistic) : 0.000**
	Durbin-Watson stat : 2.054

(Source: Authors' calculation. Here "Δ" represents first-difference operator and (-1) and (-2) represents first and second lag of the corresponding variables respectively, CointEq represents Co-integrating Equation. Rest all the notations are the same as discussed above.) (Here ** and *** represents significance level at 5% and 1% respectively)

Several diagnostic tests, including the Jarque-Bera Standardity Test, LM Tests for Serial Correlation and the Breusch-Pagan-Gorey test for Heteroscedasticity, were conducted for the validation of the Vector Error Correction Model. These tests evaluate the model for normality, serial correlation and heteroscedasticity, respectively. The outcome of the Jarque-Bera normality test illustrated in Table 5.3 confirms that the residuals are normally distributed. In the case of the serial correlation test, the null hypothesis is "there is no serial correlation". The p-value of the coefficients of LM test at both the lags are more than 0.05, hence the results support the null hypothesis, which means TM tests for serial correlation refuse to have a serial correlation in the VEC Model. The test for heteroskedasticity is of utmost importance in the case of cross-sectional data than time-series data (Vogelvang, 2005), even then the study used Breusch-Pagan-Gorey test for checking heteroskedasticity in the model. The significance value (p-

value = 0.357) is greater than the 0.5, hence the null hypothesis cannot be rejected i.e. the variance of the error term is constant. It is therefore concluded that the specified VECM model doesn't suffer from heteroskedasticity. All the residual test findings indicate the overall validity of the model.

Table 5.3: One-Way Granger Causality (Wald Test), for the two lags of Independent Variables

	Chi-sq	
Δ(TRGI)	64.559***	
Δ(FIGI)	51.123***	
Δ(INGI)	71.258***	
Δ(IPGI)	9.241***	
Δ(CUGI)	46.357***	
Δ(POGI)	17.962***	
J-B Test Statistic for Normality	24.578	0.55
LM Tests for Serial Correlation	38.544 (Lag 1)	0.859
	50.764 (Lag 2)	0.404
Test for Heteroscedasticity	854.405	0.357

(Source: Authors' calculation) (Here *** represents significance level at 1% respectively)

Table 5.4: The results of Pair-wise Granger Causality Tests

Null Hypothesis:			**F-Statistic**
TRGI	≠ >	LN_GDP	2.50859*
LN_GDP	≠ >	TRGI	9.31651***
FIGI	≠ >	LN_GDP	6.36522***
LN_GDP	≠ >	FIGI	5.08090**
INGI	≠ >	LN_GDP	2.98165*
LN_GDP	≠ >	INGI	5.54441***
IPGI	≠ >	LN_GDP	0.40511
LN_GDP	≠ >	IPGI	9.85221***
CUGI	≠ >	LN_GDP	2.47628
LN_GDP	≠ >	CUGI	1.89926
POGI	≠ >	LN_GDP	0.17381
LN_GDP	≠ >	POGI	0.39016

(Source: Authors' calculation) (Here *, ** and *** represents significance level at 10%, 5% and 1% respectively)

The findings of table 5.4 show that financial globalization and GDP are causing each other thus possess bidirectional causality. The table also confirms the presence of unidirectional causality leading from the GDP to trade, interpersonal and informational dimensions of globalization. The political and cultural globalization are not causing GDP individually and vice versa.

6. DIMENSIONS OF GLOBALIZATION AND FIRMS' PROFITABILITY IN INDIA

Performance measurement refers to the way for measurement of efficiency and effectiveness of previous actions (Neely, Gregory & Platts, 1995). Profitability and productivity, we believe, are two extremely important ones that are worth a further characterization. Indeed, while growth and market shares dynamics capture important pieces of revealed performance, firms' ability to earn profits act as a necessary condition to sustained growth, since sound profitability records represent an obvious source of internal financing and, at the same time, a crucial factor to attract external capital from financial markets. But, then, the question should be raised about what allows a firm to represent a profitable economic activity. Simplifying to the extreme, basic economic reasoning would answer that, ceteris paribus, a firm must be able to set sufficiently high prices and, at the same time, to operate at sufficiently low costs. Therefore, a discussion of how and how efficiently firms' organize production comes as a natural step forward in the direction of achieving a reasonably complete description of firms' dynamics.

6.1 Methodology

To test the impact of economic, political and social aspects of globalization on the performance of firms in India, the study formed a panel data set. The dependent variable illustrates firm performance. Various researchers have used different measures to assess the performance of the firm. In the study, three alternate variables were considered for computing firm performance: return on assets (Vernon, 1971; Geringer et al., 1989; Gomes & Ramaswamy, 1999; Hitt et al., 1997; or Lu & Beamish, 2004; Pangarkar, 2011; Alipour, 2011; Achim et al., 2017; Arora & Sharma, 2016), return on capital employed (Dmitry, 2012; Al-Matari et al., 2014; Nguyen, 2017) and return on Investment (Ramaswamy, 2001; Adjaoud, et al., 2007; Akhter et al., 2011; Al-Matari et al., 2014). The dimensions of globalization are the independent variables. The paper considers the extensively used and established KOF index of globalization to measure the economic, social and political effect of globalization on firm performance (Dreher, 2006; Dreher, Gaston & Martens, 2008).

Data were collected from two key sources to build the panel. The firms' 2000-2017 financial data are derived from the CMIE PROWESS database and the index values for economic, social and political dimensions of globalization is drawn from KOF globalization Index reports published annually by the Swiss Economic Institute. From 2000 to 2017, the database had 28,696 companies, initially. Selection of firms was focused on their participation in foreign markets since firms have foreign involvements are the ones impacted most by the globalization process. After data compilation and tabulation, it has been known

that few companies have been involved in international business for only one year, few for two, few for three, and so on, so it was difficult to choose a set of companies as our reliable sample.

The present study uses the idea of a weighted average method (WtAvg) to pick a relevant group of businesses for further analysis. Here the weighted average estimate was calculated based on the number of firms with the number of years of exposure in the international business environment. The 18-year panel data set revealed the total weighted average as 10.72 years. Firms with 11 and more years of foreign trade (out of 18 years) from 2000 to 2017, which included 4673 firms, have therefore been chosen for the assessment. Few more firms were eventually eliminated because of the unavailability of data (missing value issue). Finally, the study is left with 912 firms as our final sample. The study follows the multi-sector method (Kobrin, 1991; Birkinshaw et al., 1995) since firms are further listed according to the sector/ industry of which they belong, hence, we have 14 different sectors for conducting sector-specific research.

Table 6.1 Classification by sector of firms chosen for this analysis.

Sr. No.	Sectors	Sample selection based on Wt. Avg	Final Sample of Companies
1	Food &Agro Products	201	87
2	Chemicals & Chemical Products	536	163
3	Construction Material	84	52
4	Consumer Goods	125	72
5	Mining	30	14
6	Metal & Metal Products	148	69
7	Textile	1766	119
8	Transport Equipment	127	67
9	Communication Services	260	27
10	Wholesale & Retail Trading	178	82
11	Hotel & Tourism	55	26
12	Information Technology	150	81
13	Transport Services	936	19
14	Financial Services	77	34
Total		4673	912

Source: Authors' compilation from CMIE Prowess Database

Model Specification:

In this analysis, three models were analyzed and E-Views was used as an econometric programme to execute the unbalanced Panel Data Models, with ROA, ROCE or ROI as its dependent variable respectively.

Model 1: $ROA_{it} = \theta_1 + \beta_1 EGI_{it} + \beta_2 PGI_{it} + \beta_3 SGI_{it} + \beta_4 NS_{it} + \varepsilon_{it1}$ …….. (6.1)

Model 2: $ROCE_{it} = \theta_2 + \beta_5 EGI_{it} + \beta_6 PGI_{it} + \beta_7 SGI_{it} + \beta_8 NS_{it} + \varepsilon_{it2}$ …….. (6.2)

Model 3: $ROI_{it} = \theta_3 + \beta_9 EGI_{it} + \beta_{10} PGI_{it} + \beta_{11} SGI_{it} + \beta_{12} NS_{it} + \varepsilon_{it3}$ …….. (6.3)

Where ROA, ROCE or ROI represent the return on asset, return on capital employed or return on investment respectively. EGI, PGI and SGI illustrate the economic, political and the social dimension of globalization and NS as natural log of net sales reflecting the size of a firm. θ_1, θ_2 and θ_3 are the constant term or the intercept for Model-1, Model-2 and Model-3 respectively, β_1, β_2, …. β_{12} are the slopes of independent variables, *i* denotes the sector, *t* is the time and ε_{it1}, ε_{it2} and ε_{it3} are the prediction error or the disturbance term, which varies over both sector and time.

To erase out the anomaly may generate in the panel model due to the firm's size, the study took a natural log of net sales as a control variable.

6.2 Panel Data Estimation Results:

Table 6.2 The Random Effect Panel Data Estimation Results

Variable	**Model-1 (ROA)**	**Model-2 (ROI)**	**Model-3 (ROCE)**
C	54.653***	32.171***	116.807
EGI	0.328***	0.187***	0.628
PGI	-0.828***	-0.526***	-1.584*
SGI	0.129	0.143	0.150
In_NS	0.905***	0.819***	1.298***
F-statistic (Prob.)	*36.191*	*31.839*	*2.294*
Prob(F-statistic)	*0.000*	*0.000*	*0.002*

Source: Authors' calculation. Here *, **, *** represents significance level at 10 per cent, 5 per cent and 1 per cent respectively.

The random effect assessment of panel in table 6.2 illustrates the association between economic, political and social dimensions of globalization and firms' performance. It is quite evident from the table that the economic dimension of globalization has a positive influence on the performance of the firms throughout the three models, with the coefficient value as statistically significant at one per cent level in case of

Model-1 and Model-2. As anticipated, there is therefore ample evidence that economic globalization positively affects the performance of companies operating in India.

On the contrary, the relationship between political globalization and firms' performance in each of the three models was both negative and statistically significant (i.e. for ROA, ROI, and ROCE at 1, 1 and 10 percent level of significance, respectively). Evidently, Indian political globalization's negative effect on the performance of its firms states that firms are not strategically inclined to leverage India's enticing position on the global forum. There is no indication that social globalization promotes the firms' performance in these three models. The control variable is also positive and significant, as expected.

Table 6.3 Overall Coefficients of Intercept (Sector-wise)

Sr. No.	Sectors	Overall Intercept Coefficients		
		Model-1 (ROA)	Model-2 (ROI)	Model-3 (ROCE)
1	Food and Agro Products	54.91	32.68	118.82
2	Chemicals and Chemical Products	56.49	33.84	118.88
3	Construction Material	55.83	32.77	117.94
4	Consumer Goods	55.92	33.44	119.99
5	Mining	56.12	33.93	117.37
6	Metal and Metal Products	53.96	31.89	115.90
7	Textile	51.60	29.15	114.09
8	Transport Equipment	54.92	32.02	111.81
9	Communication Services	46.89	25.49	98.07
10	Wholesale and Retail Trading	54.63	32.52	118.16
11	Hotel and Tourism	56.08	34.12	116.04
12	Information Technology	56.92	34.62	115.20
13	Transport Services	43.90	21.92	129.11
14	Financial Services	57.29	32.76	123.39

Source: Authors' calculation.

The positive sign of each and every coefficient of overall intercept for all the sectors throughout the three model shown in Table 6.3 revealed that globalization has boosted the firms' performance in almost any sector of India. Whereas the performance is concerned, firms among different sector mentioned above under the influence of globalization phenomenon have performed largely well, however, the firm performance of three specific sectors namely textiles, telecommunication services and transport services are somewhat low in comparison to others as illustrated in table 6.3.

Test of Stationarity and Causality:

Table 6.4: Panel Unit Root Tests

Series	t-statistics (at level)
ROA	-51.032***
ROI	-48.323***
ROCE	-64.729***
EGI	-70.989***
PGI	-53.040***
SGI	-50.454***
Log of NS	-12.939***

Source: Authors' calculation. Here *, **, *** represents significance level at 10 per cent, 5 per cent and 1 per cent respectively.

The establishment of the connection between firms' performance and various globalization' dimensions enable us to investigate whether there exists any causal phenomenon between the dependent and independent variables. Therefore, to check whether the two establish long-run co-integration and long and/ or short-run causality, the study used Johansen Co-integration test and vector autoregressive model (VAR)/ vector error correction model (VECM) test. It is quite evident in table 6.4 that all the series are uniformly stationary at level. Hence there has been no proof of long-term co-integration, that is to say, it is not feasible here to apply Johansen Co-integration Test. Thus it can also be concluded that no long-term convergence takes place between the dependent variable (ROA, ROI or ROCE) and the independent variables (EGI, PGI, SGI and Ln_NS). No long term causality between variables established above left us to explore causality in the short term. Thus, VAR test can be performed here to figure out the causal effect in short-run. The value of AIC & SIC is lowest at lag two, hence analysis includes variables up to two lags. The VAR Granger Causality Model equations used to assess short-run causality are shown below:

Model A: ROA = C(1)*ROA(-1) + C(2)*ROA(-2) + C(3)*EGI(-1) + C(4)*EGI(-2) + C(5)*PGI(-1) + C(6)*PGI(-2) + C(7)*SGI(-1) + C(8)*SGI(-2) + C(9)*LN_NS(-1) + C(10)*LN_NS(-2) + C(11) ..... (6.4)

Model B: ROI = C(1)*ROI(-1) + C(2)*ROI(-2) + C(3)*EGI(-1) + C(4)*EGI(-2) + C(5)*PGI(-1) + C(6)*PGI(-2) + C(7)*SGI(-1) + C(8)*SGI(-2) + C(9)*LN_NS(-1) + C(10)*LN_NS(-2) + C(11) ..... (6.5)

Model C: ROCE = C(1)*ROCE(-1) + C(2)*ROCE(-2) + C(3)*EGI(-1) + C(4)*EGI(-2) + C(5)*PGI(-1) + C(6)*PGI(-2) + C(7)*SGI(-1) + C(8)*SGI(-2) + C(9)*LN_NS(-1) + C(10)*LN_NS(-2) + C(11) ..... (6.6)

Where, ROA, ROI or ROCE is the dependent variable for Model A, Model B or Model C respectively. EGI, PGI, SGI and Log of net sales are independent variables. The lag 1 and lag 2 is represented by (-1) and (-2) respectively. C is the coefficients of the respective parameter 1, 2 …. 10, C(11) is for constant.

Table 6.5 demonstrates the results of vector autoregressive granger causality test, in which apart from the social dimension of globalization, the economic and political dimension of globalization and log of net sales established short-run causality with the firm performance at different lagged values i.e. either lag 1 or lag 2. But to know whether they are jointly significant (i.e. at both lag 1 and lag 2) or not, Wald Test was used and similar findings were reported to indicate an overall short-run causality of the economic, political dimension of globalization and log of net sales on the performance of firms operating in India. The findings are consistent with the findings of the panel regression presented in Table 6.2.

Table 6.5: The Result of Vector Auto-Regressive Granger Causality Test

Coefficients of Independent Variables (with two lags)	**Test Statistics**	**Dependent Variables**		
		Model A (ROA)	**Model B (ROI)**	**Model C (ROCE)**
Constant	Coefficient	59.044***	51.484***	185.215
Dependent Variable (lag 1)	Coefficient	0.443***	0.448***	0.128***
Dependent Variable (lag 2)	Coefficient	0.069***	0.037***	-0.012
EGI (lag 1)	Coefficient	0.11	-0.018	-0.383
EGI (lag 2)	Coefficient	0.188**	0.308***	1.215**
PGI (lag 1)	Coefficient	-0.551***	-0.068	-0.356
PGI (lag 2)	Coefficient	-0.179	-0.478**	-2.221*
SGI (lag 1)	Coefficient	0.103	-0.195	-0.685
SGI (lag 2)	Coefficient	-0.274	-0.26	1.371
Log of NS (lag 1)	Coefficient	1.304***	0.911***	2.325**
Log of NS (lag 2)	Coefficient	-1.082***	-0.758***	-1.689
R^2		*0.237*	*0.17*	*0.017*
Adjusted R^2		*0.237*	*0.169*	*0.016*
F-Statistics		*508.85*	*333.856*	*28.411*
Prob. (F-Statistics)		*0.000***	*0.000***	*0.000****
Statistics of One-Way Granger Causality (Wald Test), for the two lags of Independent Variables				
EGI (lag 1 and lag 2)	Chi-sq	10.789***	10.503***	3.792
PGI (lag 1 and lag 2)	Chi-sq	17.75***	8.43**	5.188*
SGI (lag 1 and lag 2)	Chi-sq	1.311	1.262	0.74
Log of NS (lag 1 and lag 2)	Chi-sq	79.407***	28.311***	6.167**

Source: Authors' calculation. Here *, **, *** represents significance level at 10 per cent, 5 per cent and 1 per cent respectively.

7. DIMENSIONS OF GLOBALIZATION AND FIRMS' PRODUCTIVITY IN INDIA

In this chapter, we concentrate on analysing an important function of the firm's performance that is the efficiency or productivity of the firm. Hence to select the appropriate proxy for measuring the firm's productivity is essentials. The technique used for investigation is inherited from Hall (1988) and used by a wide number of researchers/ economists on different countries and time period to evaluate the impact on the total factor productivity of firms due to the shifts in respective countries' macroeconomic variables (Harrison, 1994; Srivastava, 1996; Krishna and Mitra, 1998; Balakrishnan, 2000). In line with these studies, we also choose total factor productivity (TFP) as a measure of firms' productivity.

7.1 Methodology

The following variables were used to determine the production function: total output value, gross fixed assets, salaries and wages, expenditure on raw materials, power & fuel charges, and depreciation. These variables are part of the firm's balance sheets and income statements. The study used CMIE prowess database to extract the data for the variables considered. The firms' financial data are generally reported in nominal values and to use these values for the estimation of production function required data conversion by using appropriate price deflator. Sector-specific wholesale price index was used to convert the values of total output and power & fuel charges in real terms and an overall wholesale price index was used for salaries and wages and raw materials expenditures. For all businesses over all years, the total factor productivity is calculated. Hence in this way a panel data model is constructed to explore the impact of trade, financial, interpersonal, informational, cultural and political globalization on the productivity of firms in India. The data for dimensions of globalization indexes for India was taken from the KOF globalization index reports published by KOF Swiss Economic Institute.

The study initially listed 28,696 companies based on their presence in international markets and their selection was centered on their exposure to international business since these firms are subjected to the phenomenon of globalization. To pick firms for the purpose of the analysis on the ground of firms' exposure to globalization i.e. to evaluate their international involvement, the study used weighted average method. Here the weighted average estimation is calculated based on the number of firms with the number of years participating in international business. As a result, between 2000 and 2018, businesses with 11 years or more of international engagement were selected. Though, the selected sample of 4,673 firms was further reduced to 912 firms as the data faced the missing values issue. Therefore, 912 firms as our final sample were used for further testing. To carry out sector-specific investigation sample is divided into 14

different sectors of Indian economy, adopting the multi-sectoral approach (Kobrin, 1991; Birkinshaw et al., 1995) as displayed in table 7.1.

Table 7.1: Classification by sector of companies chosen for the analysis

Sr. No.	Sectors	Companies identified based on Weighted Average	Final Sample of Companies
1	Food &Agro Products	201	87
2	Chemicals & Chemical Products	536	163
3	Construction Material	84	52
4	Consumer Goods	125	72
5	Mining	30	14
6	Metal & Metal Products	148	69
7	Textile	1766	119
8	Transport Equipment	127	67
9	Communication Services	260	27
10	Wholesale & Retail Trading	178	82
11	Hotel & Tourism	55	26
12	Information Technology	150	81
13	Transport Services	936	19
14	Financial Services	77	34
Total		4673	912

Source: Authors' compilation from CMIE Prowess Database

Model Specification:

Model: $\ln\_TFP_{it} = \gamma_0 + \gamma_1 TRGI_{it} + \gamma_2 FIGI_{it} + \gamma_3 INGI_{it} + \gamma_4 IPGI_{it} + \gamma_5 CUGI_{it} + \gamma_6 POGI_{it} + \varepsilon_{it}$ … (7.1)

Where, ln TFP is the natural log of total factor productivity as the dependent variable. TRGI, FIGI, INGI, IPGI and POGI are independent variables. 0 is the intercept for the model 1, 2, ...,6 are the slopes of independent variables, *i* denote the sector, *t* is the time and ε_{it} are the error term, which varies over both sector and time.

7.2 Panel Data Estimation Results:

Table 7.2. illustrates that the trade financial and informational dimension of globalization have established a positive and statistically significant relationship with the productivity of firms. On the contrary, the linkage between political dimensions of globalization and the firms' productivity is come out as negatively

significant. Irrespective of the coefficient sign interpersonal and cultural globalization failed to establish any relationship with the productivity of businesses.

Table 7.2: The Random Effect Panel Data Estimation Results

Variable	Coefficient
C	6.731***
TRGI	0.008***
FIGI	0.004**
INGI	0.008**
IPGI	0.006
CUGI	-4.00E-05
POGI	-0.078***
F-statistic	5.656945
Prob(F-statistic)	0.000007
Durbin-Watson stat	1.648781

Source: Authors' calculation. Here *, **, *** represents significance level at 10 per cent, 5 per cent and 1 per cent respectively.

Table 7.3: Differential Intercept Coefficients (Sector-wise)

Sr. No	Sectors	Differential Intercept Coefficients
1	Food andAgro Products	0.07
2	Chemicals and Chemical Products	-0.02
3	Construction Material	-0.02
4	Consumer Goods	0.10
5	Mining	-0.05
6	Metal and Metal Products	-0.03
7	Textile	-0.08
8	Transport Equipment	0.04
9	Communication Services	-0.04
10	Wholesale and Retail Trading	-0.02
11	Hotel and Tourism	-0.22
12	Information Technology	-0.16
13	Transport Services	0.85
14	Financial Services	-0.42

Source: Authors' calculation.

Table 7.3 reveals that the differential intercept coefficient values for all 14 sectors, positive sign indicate that globalization has enhanced firm productivity among that sector better than the average productivity

level and negative sign indicates productivity gain less than the average productivity level. Therefore, the productivity growth is strongest in the consumer goods industry, followed by the wholesale and retail trading sectors and the least in the financial services sector, followed by communications services.

Test of Stationarity and Causality:

It is necessary to check whether each series is stationary at level, first difference or second difference before conducting the co-integration test or test for causality on the panel dataset.

Table 7.4: Unit root Test Results

Series	t-statistics (at level)
TFP	-27.99***
TRGI	-12.786***
FIGI	-81.899***
CUGI	-49.581***
IPGI	-47.632***
INGI	-34.986***
POGI	-46.780***

Source: Authors' calculation. Here *, **, *** represents significance level at 10 per cent, 5 per cent and 1 per cent respectively.

The unit root test results in table 7.4 reveal that there is no long-term causal association between globalization dimensions and firms' productivity. The VAR test will now be used here to figure out the short-term causal effect. The study used AIC and SIC criteria for selecting the lag length for VAR analysis. The study chose lag length up to 3 lags as the values of AIC and SIC criteria were found lowest at third lag. Therefore, the equations formulated to evaluate short-term causality in the VAR Granger Causality Model are shown below:

Model: TFP = C(1)*TFP(-1) + C(2)*TFP(-2) + C(3)*TFP(-3) + C(4)*TRGI(-1) + C(5)*TRGI(-2) + C(6)*TRGI(-3) + C(7)*FIGI(-1) + C(8)*FIGI(-2) + C(9)*FIGI(-3) + C(10)*INGI(-1) + C(11)*INGI(-2) + C(12)*INGI(-3) + C(13)*IPGI(-1) + C(14)*IPGI(-2) + C(15)*IPGI(-3) + C(16)*CUGI(-1) + C(17)*CUGI(-2) + C(18)*CUGI(-3) + C(19)*POGI(-1) + C(20)*POGI(-2) + C(21)*POGI(-3) + C(22)

…… (7.2)

Where, TFP is the total factor productivity as the dependent variable. TRGI, FIGI, INGI, IPGI, CUGI and POGI are independent variables. The lag 1, lag 2 and lag3 is represented by (-1) (-2) and (-3) respectively. C is the coefficients of the concerned parameter 1, 2, ... 21 and C(22) is the constant.

Table 7.5: The result of VAR Granger Causality Test

Coefficients of Independent Variables (with three lags)	Coefficient
TFP (lag 1)	0.138***
TFP (lag 2)	0.197***
TFP (lag 3)	0.127***
TRGI (lag 1)	0.003
TRGI (lag 2)	0.014
TRGI (lag 3)	0.014**
FIGI (lag 1)	-0.016
FIGI (lag 2)	-0.017**
FIGI (lag 3)	-0.012
INGI (lag 1)	-0.053***
INGI (lag 2)	-0.014
INGI (lag 3)	0.008
IPGI (lag 1)	0.091**
IPGI (lag 2)	0.004
IPGI (lag 3)	-0.004
CUGI (lag 1)	0.023
CUGI (lag 2)	0.073
CUGI (lag 3)	-0.002
POGI (lag 1)	-0.058
POGI (lag 2)	-0.188
POGI (lag 3)	-0.080
C(22)	26.951**
F-statistic	97.789
Prob(F-statistic)	0.000
Durbin-Watson stat	2.029

Source: Authors' calculation. Here *, **, *** represents significance level at 10 per cent, 5 per cent and 1 per cent respectively.

The outcome of VAR Granger Causality Test is illustrated in table 7.5, Trade, financial and informational globalization formed causality with firms' productivity either at first, second or third lagged values, whereas cultural and political globalization failed to cause firms' productivity at all of their lag values. Now, to test whether these dimensions of globalization jointly (at all the lagged values) causes firms'

productivity in the short run, the study employs Wald Test. The Wald test results illustrated in table 7.6 revealed that the trade, financial and informational dimension of globalization is causing the firms' productivity, however rest dimensions of globalization failed to establish such causal linkage in the short run. The findings are almost consistent with the results of the regression in Table 7.2.

Table 7.6: Statistics of One-Way Granger Causality (Wald Test), for the two lags of Independent Variables

Variable	Coeff. (Chi-sq)
TRGI (lag 1, lag 2 and lag 3)	16.115***
FIGI (lag 1, lag 2 and lag 3)	21.268***
INGI (lag 1, lag 2 and lag 3)	18.724***
IPGI (lag 1, lag 2 and lag 3)	5.676
CUGI (lag 1, lag 2 and lag 3)	3.897
POGI (lag 1, lag 2 and lag 3)	5.218

Source: Authors' calculation. Here **, *** represents significance level at 5 per cent and 1 per cent respectively.

8. FINDINGS

The present study was on assessing the impact of different globalization's aspects on the Indian economy as a whole and on the performance of the firms operating in India. The study also tries to investigate the existence of causality between globalization (dimension-wise) and the economic growth of India or the firms' performance operating here. The study revealed that though the impact varies among globalization's dimensions but globalization has become an inevitable phenomenon and contributed to Indian economic growth and also boosted the firms' performance as a whole. Major findings of the study are as below:

- The study shows that there is no association of globalization's dimension with economic growth of India in the long run, however, reveals that the globalization as a whole causes India to gain economic progress in the short run.
- The study reveals that international cash inflow through various channels like the foreign investment (both direct and institutional), International primary income and foreign debt computed as financial globalization has contributed immensely in Indian economic growth and growing Indian economy have further encouraged the international cash inflow.

- The study reveals that the causality between Indian economic growth and political globalization has resulted in having no cause and effect relationship between them. India has always scored well in KOF index for political globalization on the parameters such as embassies, foreign NGOs and participation in the peacekeeping mission, these factors may have established the political posturing/ involvement of India in the international affairs but have failed to accelerate Indian economic growth, at least directly.

- The study shows that the economic globalization supports the firms' profitability; on the contrary, the political globalization establishes inverse linkage with firms' profitability whereas social globalization forms no such association with the profitability of firms in India.
- Considering the period of investigation, the study reveals that the globalization has improved the profitability of the firms operating in India, though the scale of profitability of firms varies among sectors relatively.
- The study revealed that the firms as part of information technology and mining sector have improved their profitability. The firms from the textile, telecommunication and transport service sector experienced low financial growth compared with other sectors.
- The study shows that there is no association between globalization's dimensions and firms' profitability in the long run. However, economic and political dimensions of globalization influence the profitability of the firms operating in India in the short run.
- The study shows that trade and interpersonal globalization index form positive connection with the productivity of firms in India. Whereas, informational and political globalization forms negative association with firms' productivity.
- The study finds that the globalization as a whole leads to productivity improvement of firms in India.
- The study reveals that the firms from consumer goods sector and transport services sector followed by the wholesale and retail trading sector of India have maximum productivity improvement due to the process of globalization. The productivity growth was least among the firms from financial services sector followed by the communication services sector.
- The study shows that there is no long run co-integration between globalization's dimensions and firms' productivity. In the short run, trade, financial and informational dimensions of globalization established the causal linkage with the productivity of the firms.

9. CONCLUSION OF THE STUDY

The findings reported overall integration between globalization's dimensions and Indian economic growth, in the long-run. Nevertheless, all the six dimensions of globalization established multivariate causality with economic growth of India, in short-run also. As far as the direction of causality is concerned financial globalization and growth are causing each other, establishing bidirectional causality. However, in the long run, trade, interpersonal and informational globalization individually failed to established causality towards the Indian economic growth, on the contrary, economic growth of India established unidirectional causality towards them.

The economic globalization generates performance-enhancing effects of Indian firms, however, political globalization established negative association with the firm performance. The study failed to establish any association of social globalization with the performance of firms in India. Irrespective of the sector, firms under the influence of globalization phenomenon have performed largely well, however the performance of firms under textiles, telecommunication services and transport services are low in comparison to others. The study found no co-integration between globalization and firms' performance in the long run. However, economic and political globalization causes the firms' performance in the short run.

The study examining the association between globalization's dimension and firms' productivity, analysis came out with the conclusion that the globalization have improved the productivity of firms irrespective of the sectors they belong to. The differential coefficients revealed that the growth of sector-wise productivity of firms varies across sectors. The investigation indicated a more pronounced growth in terms of productivity of the firms in case of consumer goods sectors followed by wholesale, retail and trading sector and, comparatively least in the financial sector and communications sectors. The study failed to establish the long run co-integration between the globalization's dimensions and the firms' productivity, which means no converges is happening between globalization and the productivity of firms operating in India, in the long run. However, when tested for short run causality, trade, financial and informational globalization found to have caused the productivity of firms.

10. POLICY IMPLICATIONS OF THE STUDY

This implies that the policymakers should facilitate globalization, as clearly it has accelerated the economic growth. The Indian governments should recognize the value of globalization as a strong impact factor and should rapidly follow the ever-changing phenomenon of globalization and seeks to develop clear strategies accordingly. Direction of causality highlighted the fact that the financial component of globalization is the one, accelerating the economic growth of India. Foreign investment imparted positive externalities to host country's firms. FDI brings along the knowledge and managerial for implementing the new technology. Nations with better human capital can imitate and implement the transferred technologies (Samimi and Jenatabadi, 2014). Therefore it is the responsibility of the policymaker to improve the level and skill of manpower. Government must continue with the reforms to provide an investor-friendly environment as the foreign investment brings the best business/ management practices and technologies available internationally, thereby, leads to the economic growth of the economy.

The study failed to establish directional causality from Trade globalization to economic growth despite large capital inflows through foreign investment. Government must utilize the capital inflows in productive capacity generation which includes boosting infrastructure development, human capital development and investing in research and development activities to reduce the technological gap (Demekas et al. 2005). Government must concentrate in the better distribution network, reforms in labour laws, offering friendly laws and tax holidays for foreign investor in particular to Greenfield investor. Government must set up industrial zones called special Economic Zones where firms can enjoy world class facilities of electricity, water, roads, transport, storage and recreational facilities. Reforms in the above mentioned areas/aspects will lead India towards export-oriented economy. However, in reality instead of investing in productive capacity generation, capital account surplus is largely utilized to manage the current account deficit of India. The current account deficit is due to the trade imbalance of India where imports are far more than the export. Nevertheless, the rate of growth of import is more than the growth of export. In the case of developing country, imports are considered to be beneficial in the long run considering high value import of capital goods as a major part of total import; however, in India it is just 18-23 % of total imports. This may be the possible reason of trade globalization not causing the firms' productivity. Therefore, policymakers should frame policies to curb import dependences. On the other side, India's export share of high-technology product have been in between 7 to 9 percent of its total manufactured export since last decade (i.e. 2009-2018), Hence, to boost the export government must support and encourage firms to produce high-technology product.

It is imperative for Indian firms to improve their competitiveness. The Indian government should continue with its efforts by enacting policies that support trade and financial openness, and removal of bureaucratic interference and corruption. More importantly, trade agreements signed between country (countries) and India must be a win-win situation. Even more important is the systematic flow of information about trade agreements to generate awareness among businessman/ traders, as Indian exporter has a very low rate of utilising regional trade agreements which is less than 25 percent as per the report published in Economic Times (Saraswat, Priya & Ghosh, 2018). Improper flow of information on free trade agreements, lesser preference margins, rules of origin compliance costs, are the factors responsible for the under-utilisation of trade agreements, thereby didn't reflect on firms' performance.

Before entering into new trade deals the study suggests that India should examine its existing trade agreements in context to their benefits to India and it's all stakeholders. India's emphasis while undergoing such agreements must be on raising the margin of preference and trade complementarities which may benefit India. Attempts for cost reduction (compliance cost and administrative delays) are essential for the optimum utilization of trade agreements. Well-Negotiated and balanced trade agreements keeping in mind the best interest of all the stakeholders is the need of the hour.

The overall productivity improvement irrespective of the sector the firms belong to suggest that managers should try to develop competitive advantage of the firms and more importantly, should increase the nature and scope of their international involvement. Managers should undergo new ventures internationally to take advantages of experienced manpower and of innovation and knowledge spillover effect.

As per the WTO data released in April 2019, for the year 2018, India's share in global exports for merchandise was 1.7 % and in global imports was 2.6 %. For the year 2018 for service sector, India's share in global exports was 3.5 % and imports was 3.2 %. Government of India need to take proactive steps to boost exports. Therefore, to strengthen its domestic manufacturing a strong partnership between the Government of India and Industry is needed.

11. LIMITATIONS OF THE STUDY AND SCOPE FOR FUTURE

The limitation of this work is that the study concentrates on India and the firms operating in India, thus, the generalization of the findings for other countries remains an open empirical question. The study can be extended further in future with a detailed in-depth analysis of finding the reason for non-causal relationships of other indices like cultural and political globalization with India's economic growth. For future research, similar studies can be replicated on other country or number of countries. A comparative study examining the impact of the different measures of globalization i.e. de facto and De jure on economic growth, firms' financial performance or firms' productivity can be undertaken in future. The influence of these measures of globalization on other macroeconomic indicators will certainly add worth in the current literature. Nonetheless, globalization index versus economic growth composite index may offer new insights and is a matter of further research.

The study is based on the secondary data so the reliability of the result depends upon the correctness of the data. Moreover, since the study is based on financial data which are prone to get manipulated, therefore, the correctness of the result depends on the quality of data. Although, authors have taken best care for getting the data, therefore, the data have been collected from very reliable sources which may further lead to a reliable result. Moreover, a large number of companies have been dropped from the study, because of missing data.

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