International Trade and Global Value Chain: An Overview

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Abstract

This paper attempts to explore the theoretical relations between existing trade literature and converge through it to recent trade evidence i.e. fragmentation of production processes into tasks and thus trade in tasks rather than a final marketable produce. Through its fallacies, we also try to address the problem of growth and development by the channels of international linkages. This paper does not suggests reverse globalisation, but believes in 'internal development' to gain the most out of the global economy. A special emphasis has been laid on India.

Keywords: Global Value Chain; Trade in intermediate commodities; Development; Regional Mobility of Factors; Multinational Corporations (MNCs)

JEL codes: F10 , F6 , F63 , F20 , F23.

1 Global Value Chain - An Introduction

1.1 Evolution of Trade:

For most of the past 500 years, the economy stagnated with patches of meagre growth in per capita income. Still, in the early nineteenth century, the world economy was on the path of sustained economic growth, but such growth was not evenly distributed across regions. Interestingly, this growth in the world economy was accompanied by more than proportionate growth in world trade.The movement of goods, factors and technology across locations has faced several hindrances in the past when compared to the still frictionless movement today.

Production of goods and services were encircled within a small area. In such a setting, the economic equilibrium was achieved at a point where the economy's total output was equal to the total consumption in the economy, i.e. the economy was said to have achieved self-sufficiency. Cross border trade then was minimal and exclusively dealt with luxury items that could be preserved during the long voyage. International trade leapt during the 19th century with the discovery of steam engines, expanding business across borders. Feenstra and many others considered the decade leading up to 1913 as the 'Golden age of Trade and Investment', which came to a halt with World War I. This was followed by the great recession, which took many years for the nations to attain the previous level of economic integration through trade and investment. But, with improved transportation, production and consumption became delocalised, and self-sufficiency was no longer deemed necessary. This led to a difference in point of consumption and production for equilibrium. International trade led to the specialisation of countries in producing different goods and services. It led to the setup of even larger factories due to the more considerable potential of worldwide consumers, and potential for firms to gain from economies of scale, both external and internal. *This stage was tagged as the first stage of unbundling by R. Baldwin.*

Since 1990, the structure of production has been fragmented and locationally dispersed. From trading in final output to what trade entails today is additional to the global value chain. – second unbundling (R.Baldwin)

Reports of (World Bank, 2020) and (UNCTAD, 2013) show that there are very few firms holding a giant share of the total volume of export and import. Specifically these firms, most of which are MNC's and which constitute 15% of the total firms involved in trade, account for 80% of the trade happening around us. Now with the technological revolution, and with cross border communication becoming cheaper, it is possible for co−ordinating production setup, and therefore productive arrangement need not be confined within a location exploiting comparative cost advantage.

It is becoming evident by the rapidly increasing share of trade associated with Global Production Network (GPN) to total volume of trade for a country. The intensity did drop following the global financial crisis during 2007−09, which did recover, but not to the extent of the previous level. The fragmentation of production has declined since 2011 as studied by many. Economists attribute this to the nearing of the saturation point of global fragmentation. Other possible explanations could include *increasing geo-political risks* (specially with the Russia Ukraine crisis), *increasing local capacity*, *automation induced vertical integration*. Some also believe in the measurement error of trade data for GVC resulting in under-representing the rate of global fragmentation of production process. The Economist article in 2017 interpreted it as the retreat of foreign companies to vertical integration.

During the financial crisis it was observed that the share of output on the foreign affiliates reduced by 4 percentage points during 2007-10, which indicates that the domestic firms were less worsened when compared to these foreign affiliates during the financial crisis.

The recovery from the financial crisis was not evenly spread across regions, as can be seen by the difference in time in achieving pre crisis level of production in the North American sphere and the European sphere, the former being able to achieve the pre-crisis level by 2011 whereas the region defined by the EU only reached its pre-crisis level by 2014. Despite the recent trends in fragmentation, among OECD countries, 56 percent of the goods trade and 73 percent of the service trade comprises intermediate goods. (UNCTAD, 2013) records 80 percent of the world trade to be linked to global production networks. The ILO 2016 reports suggest that world trade in intermediate products are greater than all non – oil trades combined.

> *With the advent of Globalisation coupled with declining costs of trade, in the forms of reductions in trade barriers such as reduction of tariffs, transportation costs and non-tariff barriers, increased free trade agreements between countries, with an enormous contribution of technological advancement, the fragmentation of production has been facilitated, and international supply chains have been formed.*

Global Production Networks are typically characterised by having a lead firm, making investments across borders, trading in inputs across the globe, and providing their final outputs to other firms and (or) to customers worldwide. Given the prominence in the production structure, GPN is considered the backbone of the global economy. Such a production structure is supposed to create opportunities for small and medium local enterprises, being plugged into the production networks. With such a structure developing, there is a need for a paradigm shift in trade literature. Western Europe, East Asia and Pacific and North America are the three regions (which covers mostly the high income countries) most connected with the GPN and we can easily find causality between economic growth in countries and their participation in the GPN. The relatively low income countries in the Latin American region, Caribbean, South Asia and Sub-Saharan African nations, have limited participation in the GPN, this inability to be a part of the GPN can be inferred to be the reason behind low level growth. China's rise in the GPN setup has been the most drastic development in this field. Prior to 1990, Germany, The United States and Japan were the central nodes, and China was only a small part of the GPN. In 2019, China replaced Japan to become the most important nodal country in Asia. According to a WTO report of 2021, Germany still is the leading player with highest GVC participation. With the recent rise in China, it has achieved for itself the title of 'factory to the world', and (Hsieh & Ossa, 2016) study reveals that China has risen higher in the global value chain, but the rise in real income in the rest of the world as an effect of China's rise is minimal. Therefore, countries may now specialise in a particular stage of production, bringing in imports to intermediaries and exporting them with some value addition, and such a pattern is termed vertical fragmentation of the production process. Firms, through altering boundaries for their economic activity, attain gains in productivity via technological advancement. This is obtained by trading tasks which is associated with reduction in costs. It also allows these firms to specialise in the activity they

have a comparative cost advantage.(Baldwin, 2006) sees gains from offshoring similar to that of any factor augmenting technological progress. It is seen as a productivity boost for those factors whose tasks are easier and better to be shifted abroad.

1.2 Evolution of Theories:

Therefore, comparative cost advantage can explain the global fragmentation of production. In case of horizontal specialisation, firms outsource tasks to firms which are more efficient based on technological superiority or economies of scale, whereas for the developing nations, vertical specialisation is more evident. For the lead firms, the objective of offshoring tasks to developing nations is to reduce cost, employing locally available cheaper labour; reducing wage cost, along with other cost incurred due to stricter environmental and labour codes.
Trade theories from the time of David Ricardo to Heckscher-Ohlin-Samuelson were based on these basic assumptions: (1) Perfectly competitive market with constant returns to scale in production. (2) All the producers in the economy are homogenous, and trade occurs due to either differences in technology or relative factor endowment. (3) Each country only trades in final goods, using internationally immobile but with sectoral mobility of factors of production.

These traditional trade theories established that the developing nations would have a comparative cost advantage in producing low skill, low technology and labour intensive commodities (Feenstra, 2010). These models were based on the grounds of full employment, which are yet to be realised. These theories suggested that every participating nation gains from trade. Within a country, it leaves us with winners and losers, which may be corrected through our redistribution policies. This logic may be escalated to the level of countries, where one may conclude that trade may benefit the world economy as a whole but leaves winners and losers among its participants. Even if everyone is gaining from it the gains are not equally distributed; and among sovereign nations the redistribution mechanism does not work; which leaves the developing and the under-developed nations on their own to develop and grow. It was believed that as the economies opened up, there would be transfer of superior technology, investment, human capital would be allowed to flow; which would eventually help the global south in catching up with the global north. (Prebisch, 1950) and (Singer, 1950) stated that post liberalisation market would push the global south to produce and export non-reproducible natural resources or reproducible agricultural output, already restricting ones avenues of growth. This is true partly as the income elasticity of such products produced in the global south are low. As true in the context of the Global Production Network, there may exist demand oligopoly extracting their surplus. Whereas the developed North could reap the benefits of cheaper intermediate goods which could boost productivity and surplus in their respective nations. On contrary, the North specialises in development of new products and technologies, with potential of earning higher income. According to Prebish and Singer's hypothesis, it would be difficult for the Global South to industrialise, and it is expected that the terms of trade would continuously deteriorate.

Later, pioneered by (Krugman, 1980), evolved theories that considered increasing returns to scale production functions and, with empirical evidence of Intra-industry trade by (Grubel & Llyod, 1975), disrupted the conventional paradigm. They established that trade among advanced nations is more significant in volume and much more extraordinary in proportion when compared to the north-south trade volumes. Hence, they found that trade between similar countries in terms of technological advancement and endowment was more popular. This has also been established that trading was done for similar products rather than heterogeneous products, but these products are not necessarily identical. This led to the foundation of a new trade theory. (Krugman, 1981) theorised models to explain the external economies of scale, based on interrelation of specialised firms, and workforce and joint research of firms. In such clusters, the cost of production would be lower and the ability to innovate would be higher. The developing nations, being late comers, lag behind the advanced clusters in the developed countries and as a consequence, were unable to compete and bargain. As a result in today's time, and in context of Global Value Chain, the lead firms are typically located in the developed north, while the firms of the developing nations tag along, lower in the hierarchy, attracting lower gains.

With dramatic reduction of transportation costs and improvements in ICT, production processes are being sliced into several segments of varied tasks, and these fragments are relocated globally to a place where the particular task can be completed most efficiently. The initial theory of production fragmentation was studied by (Jones & Kierzkowski, 1988), followed by (Feenstra & Hanson, 1996).

Jones and Kierzkowski believed that breaking down the production process opens up additional avenues for economies to gain from specialisation. Sven Arndt, in his articles, showed that such specialisation can be welfare improving and is expected to enhance trade further. Jones and Kierzkowski showed through their model that as the world would globalise and thus demand, firms' produce would increase. Firms would find it beneficial to outsource or offshore a part of their production to firms outside their respective national boundary.

1.3 Global 'Value' Addition:

With fragmentation of production process, into different tasks, the product crosses borders several times, or is assembled in one country, while majority of the intermediary goods are produced in other nations. The distribution of task and their associated value added is represented using the smile curve, developed by (Shih, 1996). Typically, high value added pre-fabrication tasks such as research, design, finance are solved in the developed nations along with high value post fabrication task such as marketing and after sales services. Developing nations specialise in simple fabrication. The value addition of pre and post fabrication task has increased relative to the tasks taken up by the developing nations over time thus widening the gains of participation in the GPN (OECD, 2013).

The *governance* of the production process is not usually based on market. The production process is governed by lead firms which are typically Multinational Enterprises (MNEs). The firms maybe wholly owned or joined ventured. A second option would be to subcontract tasks to an independent firm. Governance in GVCs is defined as the 'authority and power relationships that determine how financial, material, and human resources are allocated and flow within a chain' (Gereffi, 1994, 1996). Market relationships are usually in place when the tasks are easily codified, products specifications are well defined, and usually when the supplier can independently produce the intermediate commodity, or complete the task without much linkages with the lead firm. In cases where the supplier takes full responsibility of the task, and delivers stable quality products modular governance form is practiced. Captive Governance structure is in order when the supplier is not capable of independently delivering the required output, thus requiring intervention of the lead firm. Hierarchical relationship exists when there is no suitable independent supplier in the developing nations due to lacking technological standards as a result of which the lead firms or the first-tier suppliers need to send in FDI to developing nations. Thus, setting up production units there, exploiting the local factors and also reproducing the required task. Depending on the industry and the lead firms' strategies, we may find several patterns of governance amid the same GPN.

On one hand the GPN seems to make industrialisation easy in the developing nations. A comprehensive study on such a production structure by (Gereffi, Humphrey, & Sturgeon, 2005), coined the term 'Global Value Chain'. Gereffi initially termed the system as, Global commodity chain, which comprises several intra industry networks whose activities aggregate to one product, connecting households, firms and states in the world economy. The metaphor used, i.e. 'Chain', stresses the interconnected nature of several economic actives in producing one sound; the concept is bounded within the dependency tradition of analysis and primarily emphasises the "new international division of labour and its socio-economic consequences". Hence, the term network would be the best suited replacement for the metaphor. The major drawback of the chain as a metaphor is its visualisation as a linear system. Still, in reality, the term networks deal with more complex intricate links that could be horizontal, diagonal, or vertical. Also, instead of commodity, production would emphasise the complex process of producing commodity, which includes reproducing knowledge, capital and labour[1].

> *An essential aspect of such a global commodity chain is the induced path dependency nature of such a structure and the constraints it provides for future changes in trajectory for expanding the possibility of growth, making it more vulnerable to global shocks. These firms would lose out badly when their lead firm reallocates or switches to other suppliers for their inputs, and therefore excessive dependency may even prove fatal.*

[1] In this and the following chapter we use the terms Global Value Chain (GVC) and Global Production Network (GPN) interchangeably.

Economists preached that even slightest difference in growth rates among regions, would culminate over long periods, impacting standard of living, and pose serious threat to economic growth and development. Typically, a country with a large market and domestic firms serving the local consumers, with lower linkages with the global economy, stands a chance to be less affected by the world economic downturn, in comparison to small economies who rely on export only for income generation. It is also believed that the nationality of firm ownership may prove to be an essential factor in economic progress.

Three conceptual categories structure the GPN:

1. *Value:* The new value created by workers over its own factor cost. Such economic rent can be generated through: (a) access to critical production processes, (b) particular organisational and managerial skills, (c) strategic alliance between firms, (d) rents generated from holding a positive reputation in the market (e) some rents may be generated through trade policies. Apart from creating additional value, enhancing and capturing the current opportunities become crucial. Firms in the network typically rely on technological progress, support and transfer of technologies from the lead and strategic firms for value enhancements. Capturing, on the other hand, has plenty to do with government policies, the nature of firms' ownership, and whether it is predominantly owned by foreign firms.

2. *Power:* The source of power and its distribution and exercise are crucial for capturing and enhancing value. Power may be in the form of corporate power, and institutions often have the power to influence investments of lead firms. Apart from corporate power, which is distributed among the firms in the network, government, inter-state agencies, for example, the European Union, ASEAN, NAFTA along with IMF, World Bank, WTO, various UN agencies, and even private international rating agencies such as the Moodys, etc. has the power to influence decision investment of lead firms. The impact of IMF and World Bank can be indirect through the policies they ask the member countries to implement.

3. *Embeddedness:* Apart from the territorial and functional integration of agents at different locations, GPNs also play a significant role in integrating these agents' values, heritage, and origin. Firms and their activities are influenced by social and cultural aspects, the level of education, and other labour systems. Domestic firms typically evolve over trajectories formed by the present structural and institutional ambience. While relocating a part of their production process, several MNCs carry virtues gained from their home country, which may help restructure the existing local structure, enhancing opportunity for economic growth and assisting in capturing and creating value. It is not just territorial embeddedness that plays the role, but the firms also grow by virtue of the network.

Global Value Chains are typically characterised by oligopolistic or monopolistically competitive final goods market; lead firms and first tier suppliers are capable of dictating price of tasks to suppliers, thus extracting theirs profits, this dampens investment of surplus in the developing nations, hampering growth, and domestic demand. In case of firms set up through FDI the profits to some extent or entirely are repatriated to the lead firms.

Post-1991, many FTAs were signed among North and South countries that were aimed at locking southern partners' economic reforms and making it a ground for FDI by firms in developed nations. Developing countries see FDI as an opportunity for economic progress, as it brings with itself advanced technologies; at the same time, investors from developed nations have several similar nations as an option for investment, and usually, these investments need to be made in large amounts making the funds mostly indivisible among all the possibilities. Under such a scenario, FTA or several regional and multilateral organisations, and being a member of these signal a positive outlook to these MNCs in terms of investment opportunity as such agreement among nations ties economic reforms and trade policies which reduces the uncertainty related to the policies undertaken by the developing countries. Here, if a country or the industries in one country are plugged into the network closer to the final output, it is said to operate at a relatively upstream position. Similarly, if the country is working closer to the primary goods end of the value chain, it is said to function at a relatively downstream position. In essence, GPNs exist when firms from different nations satisfy production that leads to the creation of final goods and services. There can be a wide range of firms involved, which includes a lead firm and their strategic partners, specialised and generic suppliers, and customers. These actors in the GPN are motivated by profit maximisation which requires having a cost-efficient production process. The lead firms and their strategic partners in the production process usually bring together the specialised inputs from various specialised suppliers to produce their respective final goods.

2 GPN, Growth and Development

There are great hopes attached to the fragmentation of production process in the process of catching up of the developing and least developed with the advanced nations. Among the countries categorised as the Global South there are very few countries (specifically Japan in 1950s and 1960s followed by South Korea and Asian Tigers) who have initiated the catching up process, and therefore the then developed countries still remain as the top industrialised nations. Several studies used the difference in per capita income between a country and that of the United States of America as the measure of catching up phenomenon. From 1960s until recent times the per capita income of India, Pakistan and Bangladesh stagnated below 10 percent, Latin American countries at 40 percent or lower than the per capita income of the USA. Instead the difference in per capita income for most developing and least developed nations have widened with respect to the advanced Global North.

Technological progress is the primary driver of vertical fragmentation. In addition, telecommunication and transportation are fundamental for vertical fragmentation to succeed. In a globally interconnected world, the characteristics of an individual agent paints only half the picture of the global economy. The GPN eventually ends up producing one product, but its nature is inheritably multisectoral, using resources and inputs produced in several sectors simultaneously. The products are typically defined and quality standardised by these lead firms. The success of GPN in bringing in growth relies on an essential aspect of the economy:

1. The already existing political and social institutions, coupled with the productive assets and capacities, characterise the local economy.
2. And the previous effect can be significantly increased, with their ability to interact positively on global scales. These networks prove to be beneficial because of the well-structured division of roles between firms which looks after different aspects of the same production structure.

Several ASEAN countries, with the help of their respective government, have been able to set up a network of local Small and Medium Enterprises (SMEs) with global firms through industrial specialisations, achieved through indigenous research on developing new products and developing new and more efficient production processes, making these firms attractive to work with for the lead firm, without which sustaining the global competition becomes difficult. Such industrial specialisations provide a firm specific advantage when they make international networks and help in expanding new markets.

To create international linkages with foreign lead firms, it is at times the role of the state, with proactive policies to encourage lead firms from different nationalities to make a country their home for investments, especially attracting those lead firms which require labour intensive production at a particular vertical stage. This would provide the masses with employment opportunities. The state could also play a role in promoting capacity building in higher value added segments.

> *For most developing nations on its quest to participate at the higher value chain level of production, there is some critical fundamental and structural resistance providing hindrance to their growth trajectory.*

As mentioned earlier, these domestic firms must develop their capacities in the form of capital, labour, research and development, and technology to be considered for being plugged into the GPN as specialised suppliers. The firms in most developing nations face an issue of limited working capital and the scope of access to credit to small SMEs is even restricted.
The scarcity of locally available skilled workers is also an issue many developing countries face. Indian SMEs face stiff challenges in attracting skilled workers from the export oriented IT and ITES[2] Indian production to be valued globally, by final customers or by lead firms, must be of superior quality. India has a large domestic market, and several producers are aware of the demand dynamics within the country. They are content with serving just the local consumers with their low-quality products, without much incentive to produce for the global customers or aim to be a part of the higher value chain. It becomes necessary for these firms to reorient their outlook in expanding existing markets, and even creating new markets for their products.

[2]Where IT refers to Information Technology and ITES refers to the IT enabled services.

For firms to be a part of this GVC as specialised suppliers, they must deliver quality products meeting the standards and requirements of the large lead firms at the lowest cost and should also have the ability to comply with the conditions of the lead firm and these conditions are much more demanding that what would have been the situation if these firms were serving end consumers locally.

Most lead firms and their strategic partners control their own products and technologies through strict patents. With several suppliers of generic inputs, it may become a race to the bottom for the domestic firm. It is believed that through offshoring of production tasks, the profits of the firms rise more than what the firm relies on offshoring business. Several economists believe that technological improvement is the most important propagator of economic growth. It plays a significant role in value creation in different locations and also transforms the structure of power in the system; additionally, it also allows an agent to be attached to or rule its detachment from a particular network.

> *It was also claimed that GPN magnifies the effect of technological change along the value chain and that a longer value chain indicates that the price reduction will be faster. It also proves its bias towards more rapid growth and hence helps in establishing that a longer production chain plays a significant role in devising prices, generating output growth and bringing in structural changes in the economy.*

Technological improvement is seen to improve the productivity of firms over time, hence altering the prices of their products and even raising the output of the product[3] ; these goods may be used as inputs in the production process by other firms and thus, promoting further lowering of the cost of production of the firm, and further increasing output, and this process would go on as far as the network extends. Therefore, it can be said that the industries which have a long supply chain experience a more substantial price decline than others. Manufacturing industries have a longer supply chain, as they are believed to spend a more significant percentage of their total expenditure on intermediate goods; on the other hand, services spend a more significant fraction as wages to the workers employed. Following a fall in the price level, it is expected that the economy will face an increase in aggregate demand, thus augmenting economic growth. Here, the length of production is the measure of the average number of stages of production between the primary inputs to final goods. (McNerney, Savoie, Caravelli, Carvalho, & Farmer, 2022) conducted a study on 35 industry categories and 40 countries and reached the following conclusions:

1. An economy tends to grow faster than others if the industries are involved in longer supply chains.
2. The effect of a fall in the price of the good produced by industry is impacted more by the fall in the price of the upstream firms, compared to a situation where its productivity increase, thus depicting a snowball effect of the benefits of price reduction.
3. Thus the benefits of production stockpile down the supply chain.

Therefore, it can be concluded from their works that in two countries, which achieve the same level of productivity gains, with different lengths of production network or chain, the growth effect of a country with a longer supply chain dominates the other. Hence, such a difference in the average length of the supply chain could be considered a cause of the difference in incomes between countries.

2.1 Factors of Production and GPN:

Complementing the trade in intermediate goods, we can arrive at a trend in factor flows. A set of the Keynesian theories showed that labour would likely move in the same direction as capital, and that would further increase the inequality between the two areas, as was seen in Great Britain during the 1920s. These models suggest that labour and capital were compliments, and hence, labour would migrate to a region with higher job prospects, which typically are placed with more increased investment, or vice versa, i.e. FDI would move to a region with cheaper labour. In a general equilibrium framework, capital and labour move in opposite directions, foreign capital would move into a scarce capital country. Labour would move out of an abundant labour country due to differences in relative wages. The classical models

[3] As per microeconomic theories, profit maximising producers equate their marginal revenue and marginal costs to make a decision regarding their marketable output and prices.

suggest that autonomous movements, in the long run, would cause salaries to equalise across countries by the marginal productivity arguments. A combination of free capital and labour mobility would equalise wage-rental ratios across nations and raise GDP by the same level. A complimentary theorem to the Factor Price Equalisation(FPE)theorem [4] was established by (Mundell, 1957) which suggested that if countries allowed factor flow but no commodity flow, factor price must be equalised, and this would lead to equalisation of commodity prices, leaving no scope for commodity trade.

> *During the last two decades, there has been a significant rise in the inflow of foreign capital and emigration at the same time for all skill types; these patterns defy some standard hypotheses that migration and foreign capital inflows are substitutes in nature. It can be verified empirically that the outflow of skilled migrants as a percentage of total migrants has increased in developing countries.*

There is a massive discontent among the natives of developed economies with migrating workers, and the government, to maximise their political support (as one of the reasons), which tends to place a restrictive quota on migration. Therefore, there is an inevitable gap between people willing to migrate and the quota set on migrants by the host country and thus, migration policies have become an important issue, especially for developing countries. Critics in the host country argue that skilled immigrants displace native-born workers and claim to drive down wages in the host countries. H-1B[5] rejection rates have tripled since 2017; many argue that the shortage of workers with specialised skills has negatively affected the competitiveness and innovation of high-tech firms and the US economy. India, in context of the India European Union Free Trade agreement which has been at discussion since 2007, has been bargaining for opening up the labour market for Indian professionals willing to emigrate to the EU countries on temporary basis to work, and this has not been agreed by the European Union FTA negotiators.

The secondary concern for the migrant host country is that when MNCs are faced with such constraints, they may have a viable option to offshore a part of their production to suitable land. Several studies have revealed that the impact of offshoring is more complicated than it may seem. According to (World Bank, 2020) the share of industrial employment in the high income countries has fallen from 31% in 1990 to 22.7% as of 2019, on the other hand, the employment share in low and middle income countries have improved from 19.5% to 23.1% during the same period. Though the situation is not even among the low and middle income nations; there has been a rise in industrial employment from 8.9% to 10.7% in the low income countries. Studies also show that in the low and middle income countries the export oriented sector have wage levels higher than the national average along with better working conditions as per reports of (World Bank, 2016). Thus, indicating certain gains from globalisation. However, studies conducted by (Anner, 2015; Broembsen & Harvey, 2019) show that at lower tiers of the value chain as tasks are further subcontracted within the domestic spheres the working conditions deteriorate significantly. (Farole, 2016) showed through his works that higher participation in the value chain is related to lower employment share. This is typically true that the higher value added task along with being relatively skilled labour intensive, is also capital intensive. Overall, one might be able to conclude that through participation in the GVC the wage dispersion between skilled and unskilled workers increases.

Literature suggests two fundamental reasons for offshore production in different countries,

- For better market access (Horizontal fragmentation)
- For lower cost of production. (Vertical Fragmentation)

In economies where trade barriers in different forms exist, producing goods locally is the only way to penetrate the restricted market. On the other hand, offshoring is motivated by a lower cost of production, which may attract Multinational Enterprises(MNEs) to fragment production and which would situate stages of the supply chain wherever they happen to be most cost-effective. High trade barriers stand in the way of the international fragmentation of production. This indicates that signing an FTA can also have a negative impact on employment and sustainable export-led growth and growth opportunities, especially for low margin, competitive industries. In reality, things may be a little complex than just this vertical-horizontal dichotomy, as MNCs' are also attracted to invest in a country to exploit the available

[4] FPE: commodity trade leaves no scope for factor movements between countries

[5] H-1B is issued to a speciality occupation that requires theoretical and practical application of a body of specialised knowledge along with a bachelor's degree or its equivalent significantly associated with STEM fields.

knowledge and technology and several legislations on tax.

One reason for the negative image of offshoring among developed nations is that it migrates some jobs abroad. Similar to the inward migration of people,there are both direct and indirect effects of offshoring on the source country's employment and overall economic gains. Several developing countries have well-developed public and private education systems producing graduates comparable to the global standards; this has led to attracting skilled labour intensive jobs to be offshored to India. The service sector is a prime example of the case of offshoring motivated by lower costs. Empirical insights provided by other economists show that at the sectoral level, the gains from offshoring induced expansion of business generated enough additional employment to compensate for the loss in employment (due to inward migration) to a level which is not of much concern. There were variations in impact on workers with different skills; the low skilled workers are more likely to be adversely affected when compared to the highly skilled workers. Offshoring which is made to penetrate a foreign market tends to worsen the employment scenario, while offshoring, made to exploit the lower cost of production, tends to make the firm more efficient and thus boost hiring in the home country. This impact of offshoring could be stretched to other sectors as well.

> *Typically, offshoring within multinational manufacturers and service providers is associated with skill upgrading for domestic jobs; what this implies is that jobs with lower skill requirements (middle-skilled) or jobs which do not require specialised skill are typically offshored to countries like India. Empirically it has also been observed that jobs involving more complex tasks stay, whereas jobs involving less difficult tasks migrate.*

Experiences from Japan, China and Korea contradict the experience with international labour movements in India. Somewhere, a correlation can be established among patterns experienced in the formerly mentioned nations with countries on the same page as India, in terms of the gains a country accumulates from being plugged into a the Global Production Network and also with the relative upstream position of a country in the GPN. It has been widely discussed and established that workers from Japan, China, Korea do go out to acquire skills, get specialised in a field and eventually return to their native land to add to their labour force, but the experience with India is contradictory. Though the skilled-unskilled wage differential has widened for both the developed and the developing countries, the difference is more tremendous for the developed countries, which acts as a natural incentive to pull skilled migrants towards them, simultaneously providing a disincentive towards unskilled migration. There is also an additional factor pushing skilled migrants; several skilled workers undertake skilled migration just because there are not enough opportunities for them to stay back. (Feenstra & Hanson, 1996, 1999) noted in their work that a large amount of capital transfer happens from developed economies to lesser developed economies, along with the movement of tasks that are more low skilled labour intensive for developed nations, but those jobs are among the high skill-intensive jobs for the developing nations. Therefore, the relative demand for low skilled workers in developed countries fall, causing a decline in relative wages of low skilled workers. Whereas, in developing nations such offshored jobs were considered to be skilled labour intensive and thus, the relative demand for skilled labour increases again, decreasing the relative wage for low skilled workers. A study by the ILO in 2015 estimated that every one of seven jobs in the world is associated with the GPN, and this figure excludes the informal and unorganised sector. Informal works would include the tasks outsourced by subcontractors, which are typically performed at home by women and children. If we believe this estimate to be true more than half a billion people are expected to be associated with a job related to the GPN, and out of a world population of 3.3 billion (2013), we can expect that the number of individuals dependent on GPN sourced income would easily cross 1 billion.

3 Exploring Causality

"The cross-border flows of goods, investment, services, know-how and people associated with international production networks – call it "supply chain trade" for short – has transformed the world."
- Richard Baldwin

3.1 FDI and GVC:

Having a large endowment of capital eases one countrie's integration into the GVC, and stimulates upgradation in the value chain for the firm. FDI then comes as the solution for low domestic endowment of capital. FDI is typically considered the most important driver of economic growth and global integration, bringing employment opportunities and increased efficiency and productivity. The concept of a GPN includes interaction among firms together with the flow of goods and services, workers, funds, knowledge and information. This evolution of GPN emergence has been accompanied by investment and trade decisions, as it includes fragmentation and relocation of the production process, which is supported by the increase in foreign investment flows across borders. Multinational Enterprises (MNEs), with their Foreign Direct Investments (FDI), have been the primary promoter of GPN. Such a structure of trade induces investments from lead firms and lead firms apart from their role in bringing in advanced technology, skill and integrating values, which eventually enhances productivity. Still, they also play a role in signaling other firms to invest in the economy. In recent years, there has been a decline in the rate of fragmentation, for reasons discussed in previous sections . A mirrored decline in FDI flows also confirmed this pattern.

During the end of the 19th century and the beginning of the 20th century the large unrestricted capital and labour flow lead to convergence in real wages and per capita income between countries. Still, this convergence was largely absent for countries which were "outside that international circuit of massive migration and capital mobility". In the 1980s and 1990s, USA became a net debtor economy by running persistent current account deficit which reflects low domestic savings over investment whereas they remained the main recipient country of immigrants in the world. (i.e. capital flow and labour flow, both was towards USA)

Previous literature on trade assumed that the factors of production are immobile, and hence recent theories only establish a relation between FDI and Trade. Through his works, (Mundell, 1957) showed that if countries allowed factor flows but did not trade in commodities, factor prices would equalise through arbitrage, making a casual assumption that capital and labour in both countries are homogenous in every respect. Therefore, he concluded that if all countries share the same technology, factor price equalisation would equalise commodity price, leaving no incentive for commodity trade. Also, under Constant Returns to Scale(CRS) technology, the movement of only one factor is sufficient for Global Price Equalisation(GPE) to hold. This proved the substitute nature of trade with factor flows and general capital flow. Theories developed and pioneered by (Schmitz & Helmberger, 1970), and (Purvis, 1972) showed that trade and factor flows are complementary rather than substitute by assuming different production functions for the same commodity in two countries. (Kojima, 1975) demonstrated that with the inflow of foreign capital arrives baggage of superior technology and managerial skills, which would help in increasing productivity, thus enhancing trade. Later through theories of GPN and FDI, (Melitz, 2003) and (Helpman, Melitz, & Yeaple, 2004) indicated that the entry cost required for FDI is more significant than for exporting. Therefore, it would be the only rationale for the most efficient firms to engage in FDI, while others can export, or even restrict themselves to serve the domestic market.

When firms decide on investing in a country, they analyse the associated costs and benefits. When a firm chooses to invest in an economy, it typically faces charges in the form of sunk costs , which includes the cost of contracting, information acquisition and various other formalities, along with a huge fixed cost incurred in setting up a new production unit, along with the variable cost. However, suppose the firm willing to invest has previously traded with firms in the economy. In that case, it provides the firm access to information about the market, and a support network, which may prove to reduce various costs of entry. (Baldwin & Venables, 2013) studied that typically a lead firm invests or opens up production units in one location, it typically induces their suppliers to set up their operations and production processes around that location, thus bringing in more foreign investment and this phenomenon was referred to as "sticky buyer-seller relationships".

> *Trade, therefore can also be thought to induce FDI by lowering the entry cost for the firm. Therefore, we can infer that FDI and GVC participation is mutually reinforcing.*

It has also been observed that the first wave of FDI has the potential to bring in subsequent waves of FDI, as the firms making the next investment have the opportunity to learn from the decisions of the other firms and reflect on their information. If the firms' assent to the decisions of the initial investing

firm, they would soon copy the move. Also, such setup of production processes by foreign firms would have spill-over effects on the domestic firms, which would help them grow. It would also encourage these domestic firms to upgrade and plug themselves into the GPN, either as specialised or generic suppliers to the lead firm.

There are empirical shreds of evidence to show a strong positive link between FDI stock and gross bilateral trade and import content in export, which could be considered a representation of the firms' integration with the GPN. In many countries, the lack of foreign investment and foreign-owned firms might be the cause of a low level of growth and low ranked participation in the GPN, and involvement in the GPN, in turn, would attract FDI.

Attempts to study the links between GPN and FDI have brought forward several inconsistencies in handling data and the predicament in the form of 'Phantom FDI'. The small economy of Luxembourg, having an approximate population of 6 lakh people, is a host to FDI at par with The United States of America and much more than China. Such a large part of the FDI cannot be justified by the small 'brick-and-mortar' industry. For all the benefits FDI brings to an economy, countries and their governments' device policies to attract FDI, but most of the FDI happening in the world economy today are 'Phantom' (i.e. investments that pass through empty corporate shells known as Special Purpose Entities(SPE)) in nature mostly done to avoid the global tax bill. These blur the results of analysis based on FDI data. If we have to believe the data on foreign capital flow unadjusted for such errors, we would be able to convince ourselves that Netherlands and Luxembourg are the first and third largest participants and nodes of the GPN, but this is disproportionate to their market size. When adjusted for Special Purpose Entities (SPE), we get the true picture of the economy with China, Germany, the United Kingdom, France and the USA emerging as important participants. India, Brazil, South Africa, and Israel have also proved to be important FDI hubs in their respective locations. Overall, adjusted FDI centrality is highly correlated with GVC centrality. A 1 percentage point increase in adjusted FDI centrality is associated with a 0.87 percentage point increase in GVC centrality.

There are a few observations to consider: Countries which have a 20 percentage or more share of manufacturing in GDP are more central to the GPN than to the FDI network, and this comprises countries which have a comparative advantage in knowledge-intensive manufacturing and innovation (e.g. Japan, South Korea), many emerging markets invested in labour-intensive manufacturing as well as knowledge-intensive manufacturing (e.g. China, Malaysia). The Countries that are heavily involved in commodities export are also more central to the GPN compared to the FDI network (e.g. Algeria, Kuwait). These countries typically export raw materials, and therefore the firms in other countries use them in producing their goods and therefore do not require much FDI. On the other hand, countries with less than a 12 percentage share of manufacturing in their GDP, such as the USA, and the UK, tend to be more central in the FDI network in comparison to GPN. Several advanced economies such as Luxembourg, Netherlands, the UK and the USA had started de-industrialisation by vertically fragmenting production processes, especially manufacturing industries, to locations deemed fit, and these economies now specialise in relatively upstream tasks such as innovation as well as financial services.
Neighbouring countries and economies within the same region are often interlinked by trade in inputs and FDI source and destination. Europe and Central Asia have the most dense regional value chain and FDI network, and this is also because there are more countries in this region.

3.2 MNC and The Global Economy:

MNCs play a very important role and is responsible for one-third of the world output and half of the exports happening around us. The lion's share of the foreign affiliates in the world are controlled by firms in only a small number of advanced countries (USA, Switzerland, Germany, France, UK and Netherlands) which control 70% of the foreign affiliates. Foreign affiliates of an MNC are typically praised for creating value in an economy which is then distributed among its factors of production, thus increasing the per capita income of the economy. Foreign affiliates account for 12% of the global produce (as of 2014, which was lower than what was expected) and one-third of the total exports in the world. These foreign affiliates account for 10 percentage of the total Global value added. If the foreign affiliates account for 12 percentage of the global output and also 33 percentage of it is accounted for by the total MNC setup, this implies that roughly 21 percentage of the deficit produced is being made by the MNCs headquarters and the domestic plants. An OECD working paper of 2018 showed that the developing nations are not

satisfactorily integrated with the MNCs. A study by the Institute of Policy Studies in Washington showed the link between multinationals and their respective country through the turnover of the former and the GDP of the latter and commented that "in 2000, 51 of the world's 100 biggest economies were enterprises."

To better understand the role and operation of multinationals and their impact on economic growth, it is fundamental to note that if we consider economic operation, it is true that these multinationals and their affiliates do work on principle as one company, with a single vision of profit maximisation. These affiliates can, in turn, have their own subsidiaries and affiliates, but in law, they exist as separate entities. Under such circumstances, the parent company enjoys limited liability, which means that the parent firm is not liable for the risk incurred or monetary or other damage incurred beyond the scope of its investment. In hindsight, we also need to realise that this structure of management creates gaps that defy simple solutions. This indicates the footloose nature of these corporates; These companies can very quickly leave if wages increase too quickly or if there are any negative developments hindering their growth.

There are several investments which take place to exploit the knowledge and innovation as well as the various legislations with respect to tax and finance. Also, apart from having their own affiliates, MNCs make use of arm length contracts with independent firms. The role of these foreign affiliates cannot be categorised as either vertically or horizontally fragmented. The (OECD, 2018) suggests that trade still is the preferred mode of penetrating a market. It has also been observed that the MNC affiliates are more engaged in exporting when we compare with their respective headquarters; hinting that the headquarters are typically used as centres for knowledge creation; which are then transferred down the value chain and used for coordinating the activities of their production network. It is also true that the OECD countries host 70 percentage of the foreign affiliates, with the European Union being the largest host for these firms. The activity of foreign affiliates has grown stronger post the 2009 financial crisis among the BRIICS nations, growing at a rate of 9 percentage per annum during the 2010-14 phase. Foreign Affiliates in BRICS nations account for 20 percentage of their manufacturing output by them. China is the major recipient of such FDI and foreign affiliates in manufacturing and accounts for 20 percent of all the global output produced by such foreign affiliates. On the other hand, OECD countries host 80 percent of the foreign affiliates, out of which 50 percent of them are situated in the European Union belt. About 60 percent of the output produced by these affiliates of MNCs comprises intermediate goods and services. There are several literary evidences which assume that the impact of having a production network in a third country on the investment decisions from one country to another is negligible.

(Chen, 2011) conducted a study to investigate a third country production network on the decision of multinationals to enter another country. It was seen that French multinationals, on average, have 0.72 affiliates abroad producing intermediate goods necessary for producing the final good and 2.92 foreign affiliates abroad producing final goods. With more and more literature and research in this domain, it is becoming clear that the decision of vertical fragmentation or the other side of the coin, the choice of producing domestic or investing abroad, cannot be studied in isolation but depends on the existing intricate network of production units. Maggie Xiaoyang Chen showed empirical evidence which showed that there is a strong interdependence between several multinational foreign production networks and, therefore, on their investment decisions. It was observed that the decision to set up a production unit in one place depends on whether it is easier or, in other words, less costly to import intermediate inputs for the production of final goods. This cost of imports of final goods (or even for intermediate goods) which is the primary driver for horizontal fragmentation is known as horizontal dependence; depends on (out of several other factors of comparative advantage) primarily the trade policies of a particular nation, transportation cost; which primarily brings production units in close proximity to each other, and this is true, especially for intermediate goods, referred to a vertical interdependence. This creates production hubs around existing production units. Second, multinationals look to produce final output in and around locations where they would have easy and strategic access to large markets or a location which has the proper facilities for export. Through this, many multinationals set up production units for final products in a location where it has a large potential market. It has been generally observed among multinationals that they tend to set up affiliates for processing of inputs in countries with lower trade costs and lower wages, whereas in countries with large potential or existing markets, they tailor their operation focusing on producing goods for the locals, maybe through the import of a few necessary inputs and other generic supplies may be extracted from the local suppliers.

It has been studied that the import of intermediate goods by foreign affiliates increases or is higher

with reduced tariff wall, lower wages for low skilled workers in both absolute terms and in relation to skilled workers, and in countries with lower corporate tax. It was also shown by (Yi, 2003) that the trade in inputs are highly elastic to trade costs and that a small change in tariff would result in a drastic change in the inflow of input. To understand the working of the global production network, it becomes important to study the structure in which firms and countries are actually participating in the GPN.

To fix our idea of a vertical production network, we can start by looking at automobile production in NAFTA countries. Canadian and Mexican automobile plants have rigorous interconnected networks with their US counterparts, which results in a large flow of inputs across borders. This evidence of vertical fragmentation disappears as we move south towards Brazil (Hanson, 2001), whose automobile sector is protected by a common external tariff under the Common Market of the Southern Cone (MERCOSUR), which practices an integrated production facility that does not engage much with their parent firm or its affiliate, through international trade. Several other countries show a high level of integration when it comes to the production of several goods like chemicals and non-metallic minerals. These cross country differences in experiences can be explained by the cross country differences in technology, factor price, relative abundance or absence of a factor, and trade costs. Micro-level study of the French car-maker Renault in 2007 shows that the company owns subsidiaries in 10 countries apart from France. It also produces inputs for the manufacturing of cars in Argentina, South Korea and Spain, and a lot of the final processes of production are done in Russia and Columbia. Such shreds of evidence are not just exclusive to Renault.

Total, the French oil company, is an example of a conventional integrated multinational; its business segments cover every aspect of the oil and gas industry, from exploration, development, production, refining, and petrochemicals to marketing, trading, and shipping. They have nearly 900 subsidiaries and affiliates, and as a part of its horizontal market access strategies, it serves 110 countries with 16000 outlets. The subject becomes interesting when we look at multinationals from the perspective of contractual agreements.

A study of buyer-driven GPN (i.e., those production networks which are typically more labour intensive such as the agriculture, footwear and clothing industries) of Starbucks shows that it sources coffee from thousands of cultivators, traders, contract farmers across the developing world, it manufactures and sells coffee in more than 30 countries in partnership with other firms , and it operates 17,000 stores in 50 countries.

As of 2014, Apple with its production of the iPhone 6; (An example of producer-led production network i.e., those production networks where the role of the producing firm is central in organising the production network; these lead firms typically command important technologies and various research and development activities) which are designed in the USA and assembled in China, that hosts 349 suppliers, half of the total suppliers. Sixty suppliers are USA based, and many of them are multinational. Many US suppliers also outsourced fabrication of components to companies in Japan, South Korea, and Taiwan, which in turn are sourced from yet other (and lower cost) locations in South East Asia.

These evidences shows that multinational enterprises are able to fine slice production networks and relocate them to the most cost-effective area. It was the electronics and automobile sector which showed the way to vertical fragmentation, but today it is practised by garment and footwear manufacturers, even food and beverages.

4 The Indian Context

Post 1991, India has grown rapidly, the service sector has taken the central role, which has grown over the years. The Clark-Fisher-hypothesis suggested the emergence of service sector after the development of the primary and secondary sectors. For India, growth of its service sector is largely independent of domestic manufacturing sector and the stage of manufacturing led growth has been bypassed which is very different from other countries' trajectories.

The Indian service sector is dominated by IT and ITES , and the role of FDI and technological revolution has been instrumental. The question of sustainability has been raised by several researchers. Due to the absence of domestic market, migration of skilled workers abroad and the lack of indigenous RD,

according to (Dossani, 2017) these factors took the industry to a particular direction, and for these reasons, the industry is restricted from doing high value-added tasks[6] . According to a NASSCOM[7] report only 27.12% of IT workers had a graduate or undergraduate degree in Computer Science or electrical engineering[8] . Also, it is worth noting that workers in the current time period should be more efficient in the task they specialised rather than working in the IT and ITES[9].

> *During era of automation and continuous technical development the possibility of having substitutes to the labour employed in offshored jobs which are relatively more of routine task is not dim.*

Several researchers have shunned away the immediate or near possibility of replacing labour with automated technologies, this in fact could be true about the Indian manufacturing sector, but certainly such comments cannot be made for developed countries. Same is true for the readily automatable service sector, in fact the evidences can be felt in our daily lives with call centre workers being substituted by automated voice solution system.

In the present era of globalisation and an emerging pattern of developing countries taking the role of supplying raw materials and other basic low or medium skill intensive intermediate goods, and the more glory work being done by the developed countries, the risk is not averted. Being too pessimistic about the situation, there will be job losses in the developed country, where do they accommodate those extra workers, what impact would that have on trade and the growth prospect of the developed world? How does a developing country prepare ?

> *It is important that India focuses on the manufacturing sector to compliment the service sector, thus accumulating larger gains from trade.*

4.1 Industrialisation for employment growth in India?

200 million jobs have been missed in India (ET) we have had about 30 years of reforms but without any structural change. We thought of leapfrog skipping the growth in the manufacturing sector to service sector and as per NASSCOM estimate digital enabled jobs are around 4 million whereas we have a 480 million strong labour force. High end sector such as business, finance and real estate services collectively employ not more than 2.5 percentage of the workforce, and this sector was not growing[10] , hence we are in a situation wherein not much hopes can be pinned with the service sector, and therefore the manufacturing sector needs to be focused on.

The most critical challenge that India faces even today is 'Job Creation', its inability to create decent jobs is the reason for facing several issues such as that of informality in jobs, poverty, and several other development problems can also be linked with this problem of job creation. On an average around 12 million individuals join the workforce in India every year and therefore the focus must be shifted to creating decent jobs through growth in tasks which augments job creation, possibly through industrialisation.

We had a major structural change, with agriculturally dominated economy being transformed into a service dominated economy, surpassing manufacturing growth, it has definitely given India robust growth but has been incapable of shifting workers from informal works. The service sector at present accommodates 26 percentage of the workforce (where would the rest go?). They are unable to find more productive jobs, jobs with higher value addition for themselves. Have we missed the boat of industrialisation? The Government of India is waking up and trying to catch up with policies such as 'Make in

[6] As seen in the previous sections, these tasks are typically not offshored and remain with the lead firms. In case of Horizontal fragmentation, these tasks are offshored to countries with firms with superior technology specialised to handle such tasks. In India, the initialisation of integration with the value chain occurred for the purpose of cost reduction

[7] The National Association of Software and Service Companies (NASSCOM) is an Indian non-governmental trade association and advocacy group, focused mainly on the technology industry of India.

[8] Indicating that offshored tasks require less of specialised workers, which in turn proxies for the state and value addition of tasks.

[9] The tasks offshored to India were guided due to complimenting time zone with the US counterparts, large pool of English speaking labour force which becomes important if serving the foreign markets; there are many such reasons apart from having the large pool of high skilled workers which attracted such tasks to India. These additional factors kept India at an advantage when competing with other countries competing for the same tasks.

[10] Also indicating jobless growth. This is true for majority of the service sector.

India', 'Atmanirbhar Bharat'. Evidences show and is captured through the existing literature, that even the manufacturing sector which was supposed to be labour intensive is becoming less labour intensive, and the capital-intensive sector is becoming more capital intensive over the years. They are supporting new technologies which shut down labour (robot arms) and a possible risk dawns even over the service sector given the fact that the jobs which are offshored are typically the ones which can be automated easily and requires less of human decision making.

(Frey & Osborne, 2017) which states that the impact of automation is going to be very high and it would impact the developing and developed countries alike, the question that needs to be asked here concerns the possible rate of automation in both service sector and manufacturing sector, in India. Service sector (mostly the services that we majorly export) are labour intensive compared to the manufacturing sector in general, and to automate the manufacturing sector there would be a requirement for large amount of investment which is more difficult to arrange for in India, in comparison with the service sector which is typically linked with other developed countries receiving huge amount of FDI, unlike manufacturing sector. Manufacturing sector shows highest backward and forward linkages, which are very extensive, and higher than any sector, but with the change in the nature and composition of trade towards intermediate goods such benefits are mostly being captured by the global firms and are no more regionally confined. For most developed countries, the larger manufacturing sector also do import high value inputs and uses them for production processes for several reasons such as technological backwardness of domestic suppliers of intermediary inputs[11] . Even if we focus on the manufacturing sector, its export potential will be very limited, as the developed countries which take the major share in world trade volume, seek quality which is difficult to be achieved by the manufacturers in India. Manufacturing share in GDP has been stagnant, government has launched targets of creating 100M jobs, and 25 percentage target of GDP by 2022, but instead 3M jobs were lost, imports of consumer goods increased. There is also a steep decline in industrial growth rate. Therefore, these targets seem unrealistic given the ground reality. The Indian industrial sector shows stark dualism with 2/3rd output being produced by 1/5th workers in a factory setup, by an even smaller fraction of establishments, whereas the unorganised sector employs 80 percentage of the workers and produces 1/3rd of the output. These setups are spread across the formal and informal sector, and in recent times the labour-intensive sector has diffused into the unorganised sector. In manufacturing sector there are several cases where manufactures are converting to be importers. Businessmen are not much threatened with imports they believe that they can match up with the Chinese imports, provided they have government backing. Manufacturing sector wishes to export goods despite having low margins as these are mostly the games for volume rather than margin.

The question which also pops up is the link between academic and industrial sector, how much of the skills or knowledge is being shifted from the academicians to the actual manufacturing sector, which in other words could be stated as a problem to attract skilled and technical workers with formal knowledge about the procedure. Skilled individuals aiming to earn higher incomes are attracted to jobs in the FDI backed service sectors. Trends have shown that for developing and least developed countries, the typical middle skilled workers do not migrate, whereas the highly skilled and informed workers look for opportunities aboard. Many of the current trends in factor outflows can be attributed to the job prospect within the country, which is also typically framed by the jobs which the service sector and intermediary goods sector offer. These are typically offshored works where specialisation is not the key ingredient as shown by the NASSCOM report mentioned above. Thus, in indirect ways, the service sector seems to hinder the possibility of boom in the manufacturing sector. Threat of automation: labour intensive works will be wiped off sooner or later specially in the developed nations. One may be optimistic that such drastic shift in the production process may bring about new, productive avenues for workers to be employed. Also, this would not just affect employment but the service sector which brought about growth and income to India. One should consider finding alternative export options, strengthen export manufacturing sector to finance the import bill. Industrial infrastructure is frozen to the pre-reform era[12] , the main cause could be linked to low investment. For the manufacturing sector to modernise and produce quality export-oriented goods there is a need for large undivided investment which seems missing in forms of FDI which support the poor local saving mobilisation into this sector.

[11] For both the domestic and export market alike

[12] Dominated with Micro Small and Medium enterprises (MSME).

5 Conclusion

"The term 'global value chains' doesn't describe what we see today in the world economy" – R. Baldwin.

The reasons behind such a remark is as follows:

1. The world economy is regionally segregated.
2. The most concerning issue is the lack of good jobs for developing nations rather than just value addition.
3. The structure of production is more complex rather than linear. Hence, chain is not the correct metaphor to be used.

The theory of fragmentation suggests that where ever further fragmentation or slicing of the production process is feasible, it must be made to gain more from specialisation, and this may be explained through the differences in relative factor endowment. These theories believed in the gains from division of labour, which would help in distributing resources in the best possible way, which would help in lowering the marginal cost of production.

There are additional costs of offshoring as well involves distant monitoring and coordination between firms in different locations. Fragmentations involve comparing several alternate methods of producing or completing a task and using the best available options according to the agents of the production network. The value chain depicts how various fragmented tasks add value, right from the stage of Research and Development to sales and final consumption. A value chain can be both global and regional, global if the fragmented task is completed outside the economy of the lead firms and regional otherwise. Further to add, empirical studies too reveal that the further the task is from the final product, the more resistant would it be to global financial shocks, and studies also indicate that the longer the production chain associated with the world economy, the more severely would it be affected by any global shock compared to a situation when larger upstream and downstream tasks are completed regionally.

It has also been studied that upstream investment by strategic and lead firms provides incentives for downstream firms to invest, and this deepens a country's specialisation in that particular task. This is so because the intermediate firm's growth depends on the prospect of the final production growth, and hence investment by the lead firms induces confidence among its suppliers. In application, what matters is not just the magnitude of linkages but even the length of the production chain. It is typically the case in GPN that the lead firms have strategical bargaining with the firms down the production network or value chain to typically extract most of the profits. Such a bargain and the final share of profits depend on the relative power of the firms involved in the bargaining process, which depends on the value they add to the production process. Typically specialised suppliers who have invested in Research and Development to invent an efficient production process are able to extract a relatively larger share of the pie in comparison to strategic bargaining between a generic supplier and the lead firm. Therefore, most countries desire to be a part of the value chain at a relatively upstream position, but what is considered to be controversial and debated is the path to attain the higher spot.

Trade and investment are generally considered two sides of the same coin, but in reality, they is a complex link between the two. Trade and investment in today's era of global production networks exhibit complementarity. Instead of promoting policies that exclusively focus on trade and investment, policies must be focused on providing the best environment for the right foreign market entry decision. These policies must also cover all the areas concerned with the functioning of GPN, which includes the movement of people, policies of Intellectual Property Rights (IPR), and contractual relationships. We can see the Indian case for evidence; even with any bilateral agreement for investment, it is successful in attracting foreign investment. Therefore, policies must be targeted to create specialised jobs and plug higher into the production network. These policies of skill, Research and Development incentives, simplification of administrative procedures, and a country with well-developed infrastructure, along with policies that promote global cooperation, are primary for attracting MNCs to operate in a particular location. Therefore in this context, policies promoting the entry of foreign firms are seen with optimistic hopes even for the domestic firms as the linkages between the two would, in fact, make the chain stronger. In fact, neglecting the impact of domestic firms on MNCs and vice-versa while suggesting a policy measure may lead to a sub optimum outcome or may even lead to being counterproductive. Policies even need

to play a crucial role in helping firms become globally competitive, exploit the gains available from the global production network and hence access the foreign market.

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