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Research Proposal:

The International Distribution of Benefits from Global Value Chains between the Centre and the Periphery using Lenin's Theory of Imperialism as a Tool of Analysis

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1. Introduction

1.1 Background

Immanuel Wallerstein developed a model that allowed the world to be perceived as a **core periphery dichotomy.** Countries in the core are characterized by high levels of development, a capacity for innovation and a convergence of trade flows (Rodrigues, 2016). Countries in the periphery are characterized by disinvestment, net migration loss, low levels of literacy and a large primary sector economy (World Economic Forum, 2016). Most of the high-level economic activities and innovations within a Global Value Chain (product design, Research &Development, marketing etc.) are located in centres in the core, with countries in the periphery subjugated to low skill base processes that add very little value to the end product created in the food chain (World Economic Forum, 2016). This pattern was particularly prevalent during the colonial era where the development of transport systems in the developing world, mainly favoured the accessibility of core countries to the resources and markets of the periphery.

Lenin's theory of imperialism is a strong basis of contemporary analysis for the interaction between countries in the core and those in the periphery. This paper examines the theoretical coherence of his theory in light of the advent of global value chains. In Imperialism, Lenin interwove two theories-a theory of monopoly and a theory of imperialism (Lindsey,1990). He attempted to prove that the rise of monopoly resulting from the system of capitalism changed the relationship between the advanced capitalist nations and the rest of the world. Lenin notes five basic features that expose the imperialistic nature of capitalism namely the concentration of production, the role of banks, financial capital and financial oligarchs, the export of capital and the division of the world.

The distribution of benefits between countries in the core and the periphery is a topic that is aimed at describing the distribution patterns that prevail as a result of the globalisation of trade and the decentralization of production activities by multinational firms (Bair, 2005). The consequences of the distribution of income across and within countries has been hotly debated for a long time in the wider context of the effects of “globalisation”. In essence, the

international fragmentation of production expands the opportunities of countries to specialize according to their comparative advantage and hence gain from trade. As such, it is on average welfare improving for all countries involved, but not necessarily for all suppliers of production participating (Feenstra, 1998).

The distribution of gains across countries within Global Value Chains is an important issue, which highlights the significance of Global Value Chains for developing countries. Many studies have pointed out that gains are unevenly distributed across value chains (Gereffi, 1994). The balance of power often favours nodes with high technology, well-developed infrastructure and ownership of the IP of the goods produced (Kaplinsky, 1998). This would imply that firms, which control technology through patents or licenses, are in extremely powerful positions and are likely to extract maximum rents in Global Value Chains. However, technology might not be sufficient to maximize rents in value chains, as higher rents may also accrue to nodes with better organizational skills and marketing capabilities with the use of brand names. To extract maximum rents, ownership becomes an important element in the value chain.

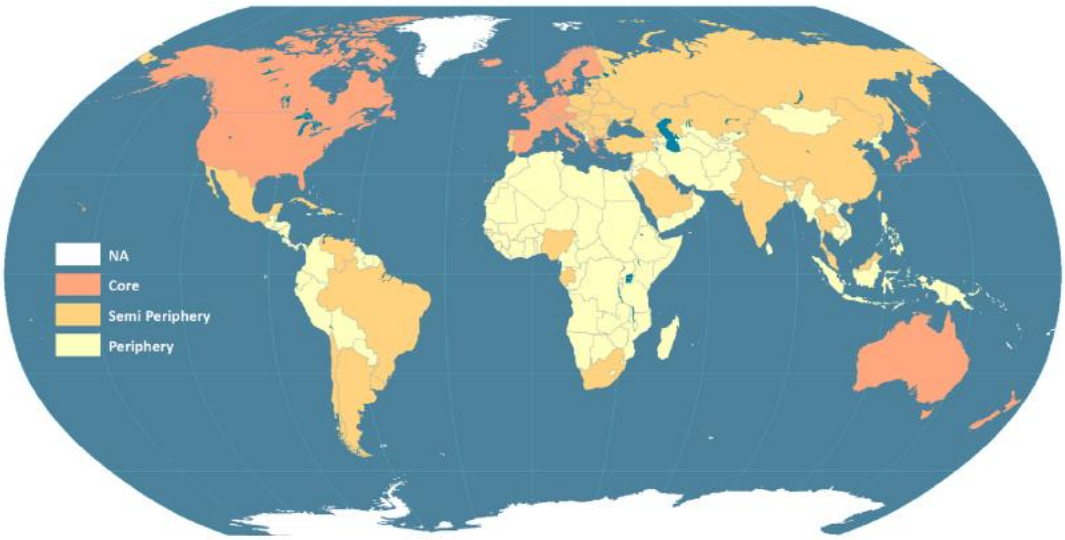


Figure 1: Core/Periphery Division of the World (World Economic Forum, 2010)

The Evolution of Global Value Chains

The term 'value chain' is used to analyse the pattern of trade that arises when a full range of activities that is required to bring a product from its conception right through to distribution

to the final consumer is coordinated. Global Value Chains describe a process where the design, sourced raw materials, intermediate inputs, marketing, distribution and support to the final consumer is distributed across geographies (Gereffi, 2011). The decentralization of activities across several countries explains why the value chain is considered to be 'global'.

Over the years, a number of overlapping terms have been used to describe the complex network relationships that make up the global economy. The 'value chain' concept was adopted over several widely used alternatives because it was perceived as being the most inclusive of the full range of possible chain activities and end products (Humphrey, 2001). The contending concepts were developed and used to recognize an important analytical component of the value chain in light of the global economy.

Supply Chains marked the beginning of the chain analysis. This was a generic term that was used to describe the input-output structure of value adding activities, beginning with raw materials and ending with the finished product. *International Production Networks* focused on the role that multinational firms played in acting as 'global network flagships' (Borrus et al. ,2000). *Global Commodity Chains* emphasized on the internal governance structure of supply chains (producer driven vs. buyer driven distinction) and on the role of diverse leading firms in setting up global production and sourcing networks (Gereffi and Korzeniewicz, 1994). Later the term French filière approach was used to describe a loosely knit set of studies that used the filière (or chain) of activities as a method to study primarily agricultural export commodities such as rubber, cotton, coffee, and cocoa (Gibbon and Ponte, 2005). Finally, *Global Value Chains*, a term developed by Gary Gereffi was used to depict a form of exchange that was perceived to be more encompassing.

The term Global Value Chain highlights the relative value of those activities that are required to bring a product or service from conception, through the different phases of production, involving a combination of physical transformation and the input of various producer services right through to the delivery to final consumers.

1.2 Context

Global Value Chains are organized around a large leading firm that enjoys extensive power, both in determining what elements of the production process it will retain, which will be outsourced to suppliers, and in setting the terms of that trade (Elms and Low, 2013). Leading firms generally seek to occupy those niches (or to create them) in which there are barriers to entry that enable them to enjoy extra-normal profits or rents (Banga, 2013). A focus area Lenin expounds on in detail when analysing his theory of Imperialism.

Small suppliers further down the chain and their workers generally find themselves in a highly competitive environment, with little or no ability to capture such rents (Elms and Low, 2013). A consequence of this power relationship, therefore, is that gains resulting from lower trade costs may flow up to leading firms (often located in developed countries), rather than down to the supplier firms in developing countries or to their workers and communities. The result is that the benefits of participating in Global Value Chains may not be accruing evenly to the intended parties and instead may be going to large, oligopolistic firms that govern production chains (Lenin, 1916)

These dynamics touch on a number of principles like the core periphery domination of monopoly firms and the reasons for export capital outlined in Lenin's theory of Imperialism. Imperialism in the context of Lenin's theory is defined as a policy or practice by which a country increases its power by gaining control over other areas of the world (Merriam-Webster Dictionary). Lenin's theory of Imperialism aids in expressing the point that countries in the periphery, from the very beginning of international trade were unfairly positioned (Fernandez, 2013). They were inherently integrated into Global Value Chains with the aim of being exploited and used to carry out low skill base production activities that ultimately reduce production costs and enrich the coffers of their former colonial rulers. Lenin's theory of Imperialism unpacks the process followed by the imperialists in order to capture and dominate markets and control the sources of raw materials.

In Lenin's theory of Imperialism, he makes particular mention of a very specific pattern of expansion followed by firms operating within the realms of a capitalist society. It is the basis of this theory that the research document will prove the unfair international distribution of

benefits from Global Value Chains between the centre and the periphery. Lenin noted five basic features as the imperialist stage of capitalism (Lenin, 1916):

i. The advent of free competition in a capitalist society creates an environment that is conducive to the creation of monopolies. This transpires through the concentration of production where capital has developed to such a high stage that it has created monopolies that have two primary motives a) controlling the sources of origin of indispensable materials and b) control of the markets in which to dispose of finished products.
ii. The merging of bank capital with industrial capital and the creation of 'financial capital' on the basis of a financial oligarch.
iii. The export of capital as distinguished from the export of commodities.
iv. The formation of international trusts, cartels and associations that share the world among themselves.
v. The territorial division of the whole world, among the biggest capitalist powers is completed, until it is re-divided again through war or technological advancements that change the competitive landscape.

1.3 Research problem

The international institutionalization of Global Value Chains has contributed to the subordination of countries in the periphery (Ponte, 2006). The colonial dispossession of countries in the periphery by the colonial domination of countries in the core has led to the exclusive pattern of integration to networks governed by multinational firms and their export of capital. The aim, it would seem, for the multinational firms driving the Global Value Chains is to exploit countries in the periphery for their natural resources and cheap labour rather than play a facilitating role in enabling growth and aid in driving the development agenda for developing countries and their actors (Fernandez, 2013).

Lenin's theory of imperialism is a critical focal point of the paper as it serves to prove the hypothesis of the research to be true. Lenin's theory of imperialism unearths the journey of multinational -firms, their domestic influence, their collusion with banks first, then

governments and ultimately how the very essence of capitalism has created the skewed balance and distribution of power between countries in the core and periphery.

The uneven distribution of benefits between actors in the Global Value Chain calls for an intensive investigation that aims to demonstrate the validity of Lenin's theory of Imperialism which proves to be as valid today as it was in the 19th century. Second to that, identify what firms in the periphery need to do in order to strategically integrate into Global Value Chains in a way that will ensure they too are able to capture the benefits accrued from participation.

1.4 Research question

What drives the international distribution of benefits from Global Value Chains between the core and the periphery?

1.5 Significance

The research topic is significant because the distribution of benefits that are accumulated between actors in the Global Value Chains are largely uneven and skewed to favour the multinational firms that exert control and ownership of the value chain at the expense of the countries in the periphery (Rodrigues, 2013). Countries in the periphery are finding it hard to assess their relative gains from participating in Global Value Chains.

Policy makers in developing countries are increasingly considering linking into Global Value Chains per se as the new development challenge (World Economic Forum, 2010). Industrial policies are being reshaped in order to adjust to this new dimension of trade with foreign direct investments being encouraged with the hope of raising the possibility of linking into the value chains (Kaplinsky, 2011). However, in so doing, it becomes increasingly important for developing countries to be aware of what needs to be done by their government and policy makers in order to ensure that the equitable distribution of benefits takes place.

1.6 Structure

The *first* section of the document gives theoretical context to Lenin's theory of Imperialism by extrapolating the foundations of the theory. The *second* section of the document is a critique of the modern literature of Global Value Chains. In this section, I delve into the details of modern literature on Global Value Chains and use Lenin's theory of Imperialism to illustrate that the real reason behind Global Value Chains is not so much about efficient production as it is about sourcing cheap labour, deliberately separating labour and technology activities in order to perpetuate the core domination over the periphery.

The *third* section of the paper is a test of Lenin's theory of Imperialism by analysing the steel value chain. The aim is to assess whether the role players in the steel value chain exhibit the patterns and behaviours Lenin outlined in his theory. Section *four* of the document is an account of how exporting countries can best derive maximum benefits from Global Value Chain participation. In this section, a systematic approach to growing exporting firm capability with the view to own an area in the Global Value Chain is described. Section *five* is the conclusion followed by section *six* which is the policy recommendations that outline the development policy implications for policy makers and government concerning Global Value Chain participation.

2. Towards a Leninist Theory of Global Value Chains

The theory of imperialism has been explained by a number of economists over time". like Marx, Luxemburg, Bukharin and Lenin across the ages of time. While Marx did not coin the concept of imperialism, he certainly set the topic in motion through his analysis of capitalism in his book, Capital volumes 1-3. Marx's analysis of capitalism led him to review the characteristics of expanding capitalism to find that once established, capitalism requires capitalists to source new methods of production in order to raise levels of productivity and sustain profit rates (Brewer, 1990). Marx insisted that the development of the forces of production was the historical function of capitalism (Gasper, 2008).

The bourgeoisie cannot exist without the continued revolutionizing of the instruments of production, and with them the whole relations of society (Lenin, 1916). The need for new markets drives the outward expansion of capitalism within which surplus value can be realised and the need for fresh supplies of labour power and raw materials at a lower cost price (Brewer, 1990). He advanced the idea that up until the industrial revolution, capitalism's external relations were mediated through merchant capital and did not necessarily transform the societies that were drawn into the world market (Germain, 1955). The rapid development of capitalism between the core and the periphery was driven by the differences in the preceding modes of production in these areas (Noonan, 2010).

From the very beginning, while it was itself still in the process of being formed in the fifteenth and sixteenth centuries, capitalism involved outward expansion gradually encompassing ever-larger areas of the globe in a network of material exchanges (Germain, 1955). This network of material exchanges over time developed into a world market for goods and services, an international division of labour (Hoogvelt, 2011). By the end of the nineteenth century, the project of a single capitalist world economy had been completed in the sense that the grid of exchange relationships now covered practically all geographical areas of the world.

Lenin's theory of Imperialism is based on Marx's theory of internationalisation of capital. Within this theory, Marx begins by articulating the process of capital accumulation as the dynamic that motivates the pursuit of profit. This involves the investment of money or any financial asset with the goal of increasing the initial monetary value of the said asset as a financial return, whether in the form of profit, rent, interest, royalties or capital gains. The process of capital accumulation forms the basis of capitalism, and is one of the defining characteristics of a capitalist economic system. Marx then went on to describe the phenomena of surplus value. Here he contended that the production of surplus value is "the absolute law" (Lenin, pp22) of the capitalist mode of production, that most of this surplus value is continually reconverted into capital called capital accumulation.

The system reproduces the capitalist relation: "on the one side the capitalist, on the other the wage-labourer" (Marx, pp16). Marx is cited stating, "Capitalism is inherently an expanding system. Capitalists must constantly accumulate and extend their capital in order to preserve

it; they must continually expand in order to remain capitalists, for if they did not, their competitors would destroy them, they would be consumers and not capitalists. This expansion eventually occurs on a worldwide basis, for capitalists must push their mode of production into every nook and cranny of the globe" (Marx, pp33)

Marx asserted that the general law of capitalist accumulation is that it created both wealth and poverty. That is to say, capitalist accumulation had an antagonistic character in that it produced and contained a unity of opposites. Marx in 1857 wrote "The same causes which develop the expansive power of capital develop also the labour power at its disposal,"(Marx, pp7) including the reserve army of labour (a relative surplus population), whose misery and pauperism grow in step with wealth of the capitalists.

Hilferding (1910) attempted to elucidate the concept of imperialism a little bit more by focusing on the role of finance capital and banks. In his prominent book, Finance Capital, he references competition as the source of monopolies. The monopolies in the capitalist states tend to collude with each other. This collusion creates a tendency towards the formation of huge capital blocks organized in a way that structures finance in a hierarchical fashion. It creates a space where finance, industrial and commercial capital are linked together. Hilferding built on Marx's work for joint stock companies and cartels (Germain, 1955). He argued that as capitalist industries developed not only did they form cartels and associations to avoid competition, but they also sought to seek protection of tariffs to protect their own markets.

The other implication of the rise of finance capital was that shareholders no longer relied only on profits as a source of return on investment, but rather on the interest yield that was generated from capital loans (Hassell, 1989). As a result of this development, banks began to commit huge sums of money to industry for even longer periods of time. This meant that banks now had an integral interest in the formation of cartels and monopolies to hedge the risk of the huge credit they have issued. The policy of finance capital was clear, secure external markets for sale, provide capital investment and ensure direct access to raw materials. A policy reminiscent to that of imperialism (Brewer, 1990)

Hilferding examined the latest developments in the capitalist mode of production. He explained how the process of concentration and centralisation of capital, which Marx

outlined, had grown apace in the last quarter of the nineteenth century (Germain, 1955). This had given rise to the domination of the economy by huge cartels and trusts rather than small-scale enterprises so typical of the era of "free competition capitalism". This he called monopoly capitalism, a new stage in the development of capitalism (Brewer, 1990).

The reason that the banks had come to dominate in this way was due in the first instance to changes within capitalist production itself. The rise in the organic composition of capital had lengthened turnover time (i.e. the length of time it takes for machinery and plant to wear out and transfer its value completely through several cycles of production) and so reduced the adaptability of firms to short-run cyclical ups and downs (Hassell, 1989). To get over the effects of short-term fluctuations in demand the firms turned more and more to the banks and the provision of credit; they also needed credit to finance the ever-larger sums necessary for new investment in machinery.

The most characteristic features of 'modern' capitalism are those processes of concentration which, on the one hand, eliminate free competition through the formation of cartels and trusts, and on the other, bring bank and industrial capital into an ever more intimate relationship (Hassell, 1989). Through this relationship, capital assumes the form of finance capital, its supreme and most abstract expression. Thus, a central feature of this new stage was the growth of banking monopolies, which in the course of their development had come to dominate, and even fuse with, the key sectors of industrial capitalism to form "finance capitalism" (Germain, 1955).

Bukharin building from Hilferding's work begins by describing the world economy as a complex interlocking of exports, imports, prices, tariffs and the export of capital that serves the interests of a more central capitalist class (Bukharin, 1917). He outlines that the stage of capitalism growth came after a period of high growth that began in the 1850's. The period comprised of massive rail and maritime route expansions, the growth of heavy industry and the concentration of capital into finance capital. In the decades leading to the war, the great powers (UK, France, Germany and Russia) competed to colonise the world in order to capture markets, raw materials and new spheres for exports to overcome the under consumption problem (Bukharin, 1929).

He described the surge of colonization as a new stage in a continuing process of centralisation and sharpening of imperial competition. Rather than ultra-imperialist peace that Kautsky advocated for, Bukharin foresaw the absorption of small capital units by larger ones, weak unit trusts by larger ones, and large units relegated to the rear by even larger ones (Brewer 1990). He is quoted saying, "*When competition has finally reached its highest stage, when it has become competition between state capitalist trusts, then the use of state power, and the possibilities connected with it, begin to play a very large part." (Bhukarin, pp20)*

Most notable of his contributions in relation to Global Value Chains is his theory of vertical and horizontal integration, which he uses to describe using the concept of concentration and centralization. He used the term concentration to describe the increase of capital that is due to the capitalisation of the surplus value produced by that capital. Under the term centralisation he described the joining together of various individual capital units which thus form a new larger unit (Germain, 1955). Concentration and centralisation of capital pass through various phases of development. In passing, both processes concentration and centralisation influence one another. A great concentration of capital accelerates the absorption of small-scale enterprises by large-scale ones; conversely, centralisation aids the increase of individual capital units and so accelerates the process of concentration.

The primary form in the process of concentration is the concentration of capital in an individual enterprise. This form predominated up to the last quarter of the nineteenth century (Lenin, 1916). The development of joint stock companies, which made it possible to use the capital of a considerable number of individual entrepreneurs, and which radically undermined the principle of individual ownership of enterprises, created the prerequisites for large monopolistic associations of entrepreneurs. The concentration of capital assumed a new form here, namely, the form of concentration in trusts. Capital accumulation no more increased the capital of individual producers; it turned into a means of increasing the capital of entrepreneurs' organisations. The tempo of accumulation increased to an extraordinary degree. Huge masses of surplus value, far exceeding the needs of an insignificant group of capitalists, are converted into capital to begin a new cycle.

2.1 Lenin's theory explained

Lenin wrote his influential pamphlet Imperialism, the Highest Stage of Capitalism in 1916, during the carnage of the First World War. Imperialism is defined very broadly to mean the domination of weaker states by stronger ones. Lenin's definition of imperialism was historically specific. For Lenin, imperialism was distinct because it represented and was the product of a new stage in the development of capitalism.

The internal composition of capitalism had changed dramatically in the years around the turn of the last century. Responding to competition and economic crisis, capitalism in the U.S., Germany, Britain, Japan and France tended to become more concentrated and dominated by massive monopolies (Lenin,1916). Lenin documented how smaller companies - the kind of privately owned firms that Karl Marx wrote about in his analysis of capitalism, were replaced by corporations dominating whole markets. Wealth, capital and power rested in fewer and fewer hands.

> Lenin is quoted saying, *"Capitalism has grown into a world system of colonial oppression and of the financial strangulation of the overwhelming majority of the people of the world by a handful of 'advanced' countries. And this 'booty' is shared between two or three powerful world marauders, armed to the teeth--America, Great Britain and Japan, who involve the whole world in their war over the sharing of their booty." (Lenin, pp 47)*

Lenin made reference to Hilferding's work regarding finance capital and the role of banks in driving the imperialist agenda. He acknowledged Bukharin and his points on competition, cartels and monopolies attempting to serve their own interests and securing their own markets. He generated his own powerful synopsis of the role that capitalism plays in driving the imperialism agenda. The basis of Lenin's theory of Imperialism being the highest stage of capitalism is based on the following grounding premise (Lenin, 1916):

- Capitalism creates fertile ground for the creation of monopolies that play a decisive role in economic life.
- The merging of bank and industrial capital based on finance capital has created financial oligarchs that wield great power in the economy.

- ❖ The export of capital as distinguished from the export of commodities acquires exceptional importance in relation to understanding the relationship between the colonies versus the imperialist countries, and between imperialist countries themselves.
- ❖ The formation of international monopolist associations that share the world among themselves.
- ❖ The division of the whole world among the biggest capitalist powers is completed and the division among the global monopolies has begun.

3. Modern Literature on Global Value Chains and the Critique thereof

3.1 Modern Literature on the drivers of the distribution of benefits within Global Value Chains

Gereffi et al. (2005) point out that part of the distribution that takes place between firms within a given Global Value Chain (be it in the form of profits, skill development or technology) depends on the relative bargaining power. The relative bargaining power is based on three factors: (i) how rare and sought-after the ***capabilities*** of the supplier are and whether the transaction can easily be shifted to a different supplier, (ii) how easily the supplier capabilities can be ***codified*** (iii) how ***complex*** the capabilities of the supplier are.

Modern literature on Global Value Chains notes that of the five types of Global Value Chains structures put against the backdrop of the bargaining power matrix that influence the gains and distribution that take place in a Global Value Chain. The first factor taken into consideration is the ***supplier's capability*** (Gereffi, 2005). If the supplier has simple capabilities that can be easily performed by competitors, the bargaining power will be heavily skewed in favour of the lead firm.

This results in a captive Global Value Chain structure, where firms from developing country's find themselves integrated at the initial stages of the value chain, where the tasks are simple, easily codified and the opportunity to upskill workers and capture a larger portion of the profit share is especially low (Industrial Development Corporation, 2013). Developing country suppliers often get particularly squeezed if they face high switching costs when considering supplying another buyer, so they are effectively locked into dealing with one lead firm in the

short-run (Organisation Economic and Cooperative Development, 2009). However, as yet there is little empirical evidence regarding the scale of switching costs and the extent to which they may inhibit suppliers from switching from one buyer to another.

The second factor that determines the remuneration for a task in a Global Value Chain is whether the ***knowledge and specifications needed to complete the task*** (even though they may be complex) ***can be codified and readily transmitted*** (Gereffi, 2005). In other words, if the act of performing the task is one that can be easily replicated by any other firm, then the bargaining power of the supplier firms is usually low. It is not only the bargaining power that will be low but so will the remuneration for these activities because finding another supplier to complete those tasks is not difficult (Industrial Development Corporation, 2013). This is typical in many standard manufacturing and assembly activities, particularly in the apparel industry.

Within the steel value chain, processing activities generally are capital intensive and require heavy capital investment in savvy machinery to facilitate steel casting and processing. Manufacturers in this value chain are not impeded so much by their capabilities, as they are by the price of commodities and the demand for their products. However, if a steel manufacturer does not have the machinery to facilitate the manufacturing of steel, they simply cannot compete in this space. A pre-requisite requirement for participation is the raw inputs first and foremost, followed by the machinery (Zhuwakinyu, 2012)

Tasks in the manufacturing process that are easily codifiable make it easier for the leading firms to switch between suppliers because this would imply that the task is easy to conduct, thus heightening competition among suppliers and driving down their prices. On the other hand, if tasks are complex and not easily codified, the switching costs for the lead firm will be high since the likelihood of sourcing another supplier with the same capabilities will not be easy resulting from the complexity and the investment required by the suppliers to complete the task.

Linkages in these chains are therefore, tight and often involve a high proportion of face-to-face interaction and mutual learning, which constitute sunk costs, including for the leading firms (Gereffi, 2011). Mutual reliance is regulated through reputation and long-term commitments (Organisation for Economic and Cooperative Development, 2012). In this

setting, the distribution of gains is more favourable for the suppliers because of the heavy reliance the lead firm has on the supplier. In order to participate in such a "relational" Global Value Chain structure, developing a country firm suppliers need to possess strong production and communication capabilities, which are usually not present at the early stages of Global Value Chain integration (Africa Outlook, 2014).

Finally, the leading firms' bargaining power is larger if they have ***few competitors to which suppliers could switch the supply of products.*** Lee and Gereffi (2013) illustrate this point using the mobile phone Global Value Chain. In recent years, the number of leading firms in the sector has shrunk considerably, with Apple and Samsung largely dominating global markets. The authors provide evidence that this consolidation has resulted in increased bargaining power and profits for leading firms, while manufacturing host countries have observed limited wage increases and have become more dependent on the demand from the few leading firms in the industry.

3.2 Modern Literature on Governance Structure of Global Value Chain

The modern literature explains the governance of Global Value Chains being based on two broad frameworks. The first being the ***producer driven*** value chain and the second being the buyer ***driven*** value chain (Humphrey, 2001). The *producer driven value chains* are found in the high tech sectors such as the semi-conductors and pharmaceutical industry. These industries typically have a heavy reliance on technological development and conduct extensive Research and Development to drive product innovation and market differentiation for their products (Schmitz, 2009).

Many of the organisations operating within this realm of Global Value Chain are based in countries in the core and are placed upstream in the Global Value Chain. These organisations tend to control the R&D, the design and marketing of the products. Herein the center and periphery divide is distinguished. Countries in the center tend to operate upstream or downstream in the value chain where the value adding, technology intensive activities take place (Gereffi, 2001). In the middle of the value chain, often are the periphery countries that engage only in extractive, assembling, low value adds production activities (Gereffi, 2006).

The power base for a given Global Value Chain and the extent and level of the distribution dynamics are inherently influenced by where in the Global Value Chain the firm in question is positioned. The *buyer driven* Global Value Chain is one where retailers and branders control the production that takes place within the Global Value Chain (Ponte, 2008). The production is normally, completely outsourced because the sole purpose of firms operating in this value chain is to market and sell products. They then wield the power by dictating the standards of production to the producers to ensure that they meet the requirements of the market base that is being targeted (Schmitz, 2005)

Modern literature suggests that the main drivers for the advent of Global Value Chains are three fold. The first is the *technological progress* that has allowed for the fragmentation of production that never existed before to take place (Humphrey, 2002). Only technological progress makes it possible for parts and components produced in factories in different parts of the world to perfectly combine in sophisticated final products, opening the door to the international fragmentation of production (Organisation of Economic and Cooperative Development, 2014).

Technological progress specifically refers to the improved information, telecommunication and transportation technologies that are critical in the co-ordination of dispersed activities in sometimes highly complex Global Value Chains (Gibbon, 2005). These costs are of particular importance in internationally fragmented activities because they have a direct impact on the ease of operating a business and channelling goods from point A to point B. Therefore, the inherent potential to decrease these costs acts as a drive for the dispersed production of goods.

The operation of Global Value Chains involves more service related inputs than trade in final goods, thus these activities are highly dependent on the availability of the adequate services at low costs (Organisation of Economic Cooperation and Development, 2005). Significant technological improvements and the liberalisation of trade in services have contributed to lower costs (Bair, 2005). In recent decades, there was a sharp progress in Information and Communication Technology (ICT) and a dramatic fall in telecommunication costs. These major transformations have enhanced the development of Global Value Chains in the services sector itself (Gereffi, 2001).

The second driver for Global Value Chains is attributed to the *reduction in trade* costs (Messner, 2000). Trade costs include the cumulative range of costs the organisation will face from the manufacturing of the products in the factory to the delivery in the warehouse until it is distributed to the retailers in order to reach the hands of the final consumer. In the case of the production of goods, trade costs include among others land transport and port costs, freight and insurance costs, tariffs and duties, costs associated with non-tariff measures, and can be extended to also include mark-ups from importers, wholesalers and retailers (Humphrey, 2002).

In the case of services, transport costs are replaced with communication costs (although services can also be provided by those that have to travel to the country where the consumer is located) and trade barriers are replaced with non-tariff measures. Some important costs related to Global Value Chains are also co-ordination costs, as geographically dispersed activities have to be managed in a consistent way (Giuliani et al, 2005)

The final driver of the establishment of Global Value Chains is the *fall in political and economic barriers.* Political barriers constitute non-tariff barriers like import licensing requirements, embargoes, minimum import price limits, standard disparities and import subsidies. With economic barriers constituting primarily the tariff measures. This has been an important driver of trade as a whole and of Global Value Chains in particular. Supply-chain trade has become very regionalised, supported by a combination of deep Regional Trade Agreements, bilateral investment treaties and unilateral reforms by developing countries, mostly accomplished outside the World Trade Organisation (Organisation of Economic Cooperation and Development, 2005).

WTO members recently reached a comprehensive trade agreement (the “Bali Package”) aimed at lowering global trade barriers (Bellmann, 2014). It involves an effort to simplify the procedures for doing business across borders, including an agreement on trade facilitation, and to improve market access for least developed countries.

3.3 Modern Literature on the Types of Global Value Chains

Having understood the drivers of the establishment of Global Value Chains, another element of the Global Value Chain narrative is in understanding the Global Value Chain structure and

how it governs the power relations between buyer and producer. The structure of Global Value Chains can be described using an elaborate typology of five foundational governance structures that are informed and measured by three distinct variables: 1) The complexity of information between actors in the chain 2) how the information for production is codified and 3) the competencies of the suppliers (Bair, 2005). The governance structures are as follows:

-***Market Global Value Chains*** where the transactions are simple, information on production information are easily transmitted and suppliers make products with minimal input from buyers.

-***Modular Global Value Chains*** where complex transactions are relatively easy to codify. Suppliers produce products according to the customer's specifications using generic machinery that spreads across a wide base. This ensures that switching costs are low and furthermore limits transaction specific investments. Relationships in this Global Value Chain are more significant than what would prevail in a market Global Value Chain due to the information that flows between firms. Information technology that facilitates the exchange of information within this Global Value Chain is key.

-***Relations Global Value Chains*** encompass buyers and sellers who rely on complex information traversing between them that are not easily transmitted or learned. There are frequent interaction and sharing of information and knowledge between the buyer and the seller resulting in a relationship of mutual reliance and trust. The nature of such a Global Value Chain is regulated through reputation, social and special proximity as well as family and ethnic ties. The switching costs for this Global Value Chain are high because production is based on differentiated products and relationships that have been built over a long period of time.

-***Captive Global Value Chains*** comprise of a number of small suppliers who are dependent on servicing a few big buyers that wield great power over this type of Global Value Chain. There is a high degree of monitoring and control by leading firms that dictate the standards of production to the suppliers. The conditions of production set by the buyers create a thick link between the two parties creating high switching costs for both parties.

-***Hierarchy Global Value Chains*** are characterized by the vertical integration of an entire value chain within one organisation. This tightly coupled organisational structure is attributed to the fact that products produced are complex, product specifications cannot be codified and because highly competent suppliers are hard to find.

The relationship between buyer and producer is largely influenced by the structure of the Global Value Chain they find themselves operating in. In many instances, the power relations are skewed to favour leading firms that often dictate the terms of participation for smaller supplier firms based in countries in the periphery. Increasingly the topic of 'upgrading' becomes important as firms strive to elevate their positions in a chain in order to access a larger share of the profits as they add more value to each stage in the production process. In order to increase the extent of benefits derived that a hosting firm can extrapolate from Global Value Chain participation, the key, is ascertaining the activities the firm is ready to take in order to "upgrade" from their current position to a more upward position within the value chain.

There are two types of "upgrades". The first is an economic upgrade. This is defined in terms of increasing the efficiency of the production process, or enhancing the characteristics of the product being produced or activities performed. The second is a social upgrade. This refers to outcomes related to employment, pay, gender, and the environment. For the purpose of this research document, the social upgrade will be suspended within this section. Focusing on economic upgrading, Humphrey and Schmitz (2002) distinguish between the following types of upgrades:

- Process upgrading: where firms are seen to gain in terms of efficiency in producing a given type of output.
- Product upgrading: where firms engage in the production of more sophisticated products.
- Functional upgrading: where firms acquire new functions within a given value chain.
- Chain upgrading: where firms move into different value chains.

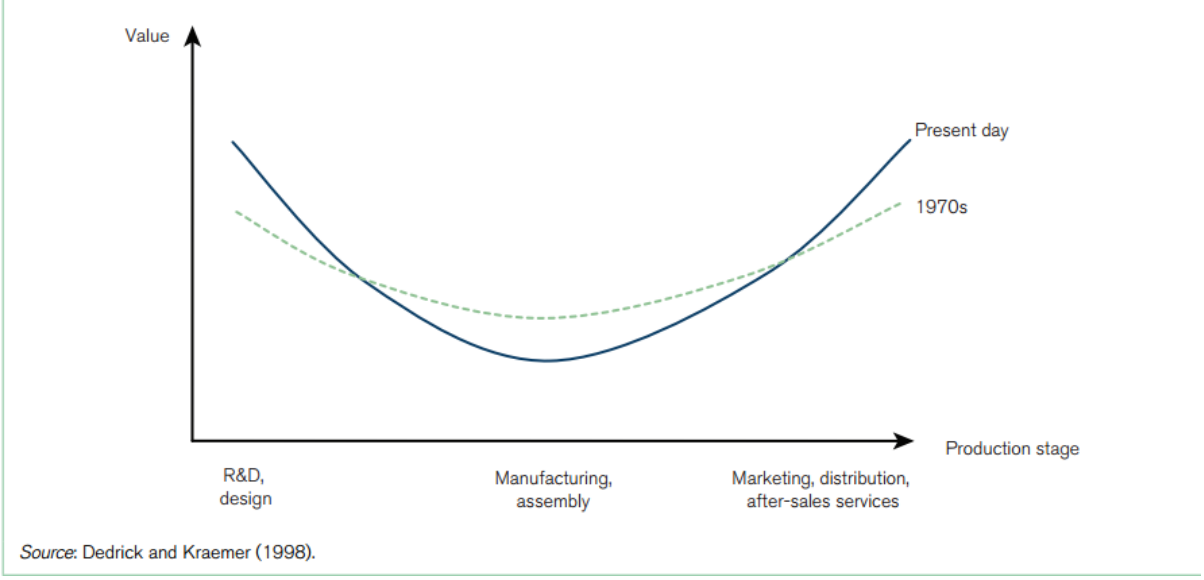
An issue for firms in developing countries is that gains in Global Value Chains are often distributed unequally, particularly for the activities where integration first takes place (Newman, 2014).

3.4 Modern Literature on the Upgrading Challenge

The “smile curve” (below) is a diagrammatic analogy used to depict where the value adding activities within the Global Value Chain are situated. It describes a general empirical regularity suggesting that upstream activities (Research Development, design) and specific downstream activities (marketing, distribution) are characterized by higher value-added capture (World Bank, 2013). In the initial stages of development, countries mostly enter at the low value-added manufacturing and assembly stages, in which knowledge is often easily codifiable and the capabilities required are low (Africa Outlook, 2014).

On the other hand, knowledge of the upstream value activities, such as design, marketing and retail are not easily codifiable. This implies that firms operating within this space of the Global Value Chain tend to add more value to end products and conduct tasks that are considered more valuable within the chain activity to firms in the core (Linden, 2009). Labour wage in the periphery is cheaper, economies in these regions are normally receptive of foreign businesses setting up camp in their shores as this presents opportunities for employment, resuscitation of the economy and some

Figure 2: Smile Diagram (World Bank, 2013).



Source: Dedrick and Kraemer (1998).

The second reason that makes it difficult for firms in the periphery to integrate at a high value adding level is because the very tasks that have been outsourced are those that require low supplier capabilities (often simple with no level of complexity). Invariably this opens the competitive landscape to a much broader spectrum of participants who are forced to be price

takers and not price setters by virtue of their position within the chain. The low bargaining power and therefore, the cheaper cost of production for firms in the periphery make the decision by firms in the core to move production activities to the periphery easier and more sensible.

The requirements for acquiring new skills and knowledge (bureaucratic procedures, national standards and requirements) by firms in the periphery to cater for marketing channels and consumers in a different geography is arduous. The extent of the challenge is articulated by Hobday (2000). In his analysis of the problems facing the "latecomer firm" in the global economy, he identifies competitive disadvantages arising from its distance from the technological frontline and from global markets and consumers:

A "latecomer" firm is defined as a manufacturing company (existing or potential) which faces two sets of competitive disadvantages in attempting to compete in export markets. The first is *technological* in character. Located in a developing country, a latecomer firm is dislocated from the main international sources of technology and R&D. It operates in isolation from the world centres of science and innovation and is behind technologically, lacking in research, development and engineering capability. The second disadvantage concerns *international markets and demanding users*. To add to its technological difficulties, the latecomer firm is dislocated from the mainstream international markets it wishes to supply. These are mostly located in the developed countries, rather than developing countries. Typically, a firm will confront underdeveloped, small local markets and cater for unsophisticated user preferences (Hobday, 1995)

Similarly, developing countries are expected to meet buyer requirements that are frequently not (yet) applicable in their own domestic markets (Keesing and Lall, 1992). This creates a gap between the capabilities required for the domestic market and those required for the export market (Humphrey, 2004). Some firms in developing countries like Taiwan, Singapore and South Korea have been able to bridge this gap while others struggle depending on the level of development of the information and communication technology, the infrastructure, the trade policies etc. of the country in question.

3.5 A Critique of Modern Literature

Lenin's argument was that when finance capital has reached a certain level and has accumulated in the most advanced countries, as a result of the transformation of competition into a monopoly, these countries turn to colonial policies of appropriating the rest of the world (Dussel& Yanez, 1990). The result is direct colonies followed by many other dependent countries, which were economically organized in accordance with the interests of the concentrated capitals based in countries in the core. This was the global imperialist chain, which leads to uneven development. In fact, according to Lenin, the even development of different undertakings, trusts, branches of industry, or countries were impossible under capitalism.

The unequal exchange of values on the international market between highly productive labour working in "First World" countries and far less productive "Third World" labour working in countries in the periphery was the key mechanism of wealth transfer from the poor to the rich countries today (Sam King, 2010). Lenin did not specifically articulate the concept of unequal exchange in his book on Imperialism, but he did elaborate at length how the monopoly capitalist firms, along with their collusion with the banks in exporting capital did so to the disadvantage of countries in the periphery.

Modern literature cites the drivers of Global Value Chains being based on: (i) how rare and sought-after the ***capabilities*** of the supplier are and whether the transaction can easily be shifted to a different supplier, (ii) how easily the supplier capabilities can be ***codified*** and (iii) how ***complex*** the capabilities of the supplier are. Lenin argues differently, the intention for the export of capital by the monopoly firms is not based on the pursuit of suppliers with sophisticated capabilities. This would thwart the very motive of generating profits as sophisticated supplier capabilities certainly come at a cost.

In actual fact, the driver for the export of capital (which is what happens during the decentralization of a production process, the multinational firms put capital up to operate in a different geography) is threefold, one to generate greater profits, two to own the supply of raw materials and three to do so at a minimum cost base. This is done in two ways depending on the commodity pursued, in the apparels and high tech industry; it comes in the form of outsourcing the labour intensive, low skill base assembling tasks. In the commodities space,

it is done in the form of extracting the raw materials and shipping them to centers in the core for processing and sales. This is demonstrated in the apparel Global Value Chain described in the ensuing paragraph.

Indonesian textile workers receive wages that are one-thirtieth of the Australian minimum wage. They are tasked to a full workday to earn what an Australian worker gets in the first minutes of a shift. The worst Australian textile worker could produce in 20 minutes what the best Indonesian turns out daily. This is why Pacific Brands closed its Australian production and opted to operate within Indonesian shores. Clothing production doesn't require highly specialised knowledge or sophisticated techniques, so it's difficult to monopolise. No matter how many trousers the Indonesian worker produces in a day, she would be considered less "productive" than a shop worker in Pacific Brands' new Australian stores that merely sold the same number of trousers, so long as the Pacific Brands shop had a bigger price mark-up than the factory (Smith, 2010).

This phenomenon also weakens the industrial power of the factory worker, who now has no direct claim on the surplus she creates. Her claim to have created profits realised in Australia is also denied. There are large differences in labour productivity in certain advanced and highly skilled production spheres, but these are not usually moved offshore. Rather, it is low-end, low skilled production that is moved to cheap labour economies (Smith, 2010). This is why the idea of upgrading in the chain for many developing countries remains utopian one because the multinational firms that owns the value chain already possess those capabilities in their core centre. The issue at hand becomes not so much the sophistication of the capabilities as it is the ownership and control of the value chain.

Today multinational firms increase profits by deliberately separating highly complex and skilled processes like research, design, engineering, marketing – from simpler, lower skilled, low-profit processes. Separating individual production processes means trading semi-finished products and parts internationally. This division allows for the capitalization of labour price exploitation. Outsource the low skilled simpler processes to the periphery to ensure the mark-up and selling of goods at exponentially higher rates in the core. The United Nations Conference on Trade and Development) estimates that around 60 percent of global trade in

2012 was in intermediate goods and services. One hundred years ago, the physical location of industrial plant and equipment was synonymous with advanced development.

It is less so today. Direct production processes often embody standardised, low value "bulk production." Specialisation has reached such a high stage that multinational firms are able to "fine-slice" their international production networks, locating each value adding activity in its lowest-cost location on a regional or global basis. This is done on a hierarchical spectrum across poor to rich states.

It is true to say that technological progress is a critical driver for Global Value Chain. However, not so much in the sense outlined by the modern literature. Modern monopoly is better reflected through scientific knowledge, and its advanced application to production. The scientific/technological knowledge is concentrated, ultimately, not in physical objects such as machinery and equipment but rather in human beings and human interaction in relation to those objects. It is a monopoly of the labour power of the most highly educated workers, by both imperialist states and multinational firms, that forms the ultimate and most stable base of imperialist reproduction. Therefore, the shift of certain types of industrial production activities to poorer economies does very little to undermine the reproduction of monopoly in the imperialist economies as long as the reproduction of the highest tech aspects is still controlled in the imperialist core (Smith, 2010).

While there may be some truth in stating that the reduction of trade costs is another driver of Global Value Chains, it would be more accurate to say that the drive is based on the reduction in labour costs than it is in the trade costs itself. The modern, highly specialised, international division of labour associated with "globalisation" of production more perfectly expresses the character of imperialist monopoly than previous less advanced forms (Harman, 2006). In Lenin's time, monopoly was based principally on the physical location of most machinery in the imperialist core. Today this is still the case only for the most advanced machinery, the remainder often moving to low-wage economies.

There is a greater sophistication in the modern division of labour. The implication is that the sophisticated labour that comes with advanced machinery, which allows for the development

of sophisticated production capabilities, is located in firms that are located in the core while the manual intensive tasks that are far less complex are often located in firms in the periphery. Production is "fine sliced" into distinct aspects and organised according to the degree of sophistication (difficulty) (Harman, 2006). The "globalisation" of recent decades more fully separates scientific and technological capacity from the general grunt work or low-skilled labour. There is a deliberate demarcation of the nature of work to be carried out, the estimated cost of labour and the location.

Modern literature states that the governance structure of Global Value Chains is based on whether the Global Value Chain is producer driven or buyer driven. The Global Value Chain governance structure is effectively articulating who holds the power in the Global Value Chain and in what context. For a developing country wanting to integrate itself to a Global Value Chain, the matter of the governance structure of the Global Value Chain is neither here nor there, because ultimately the implication for the developing country based firm is that their integration in the chain is to serve the interests of the multinational firms that own and control the value chain. It is in understanding this arrangement that we can begin to comprehend why the distribution of benefits derived from Global Value Chains tends to consistently flow from the periphery to the center. Power is in the hands of him that has ownership and control of the activities inherent in the chain.

Lenin said it best when he said the alienation of producers from ownership of the means of production is the inner relation, which constitutes the essence of the capitalist form of commodity production (Lenin, 1916). Therefore, from being the inner relation connecting individual workers and individual capitalists in the production process, it becomes outwardly expressed as a fully developed social antagonism. As a social conflict between the actual producers of the goods and the non-producers who merely own the factors of production but do not involve themselves with the lower value adding activities that the producers in the production process find themselves in.

Multinational firms are redefining their core competencies to focus on innovation and product strategy, marketing, and the highest value-added segments of manufacturing and services, while reducing their direct ownership over 'non-core' functions such as generic services and volume production (Gereffi, 2005). Outsourcing "enables the leading firms to

raise profits by reducing costs, raising flexibility and offloading risks while retaining rents from design, marketing and finance" (Milberg and Winkler, pp 12)

The increase in "arm's length outsourcing" (to independent suppliers) reflects the weak position of suppliers (Milberg, 2008). Suppliers have not won business away from multinational firms but have been given it by multinational firms leading firms precisely because suppliers are too weak to price set and can be handed risks. Monopolies by definition obtain higher than average profits through keeping other capital out of the monopolised spheres.

Non-monopoly capital must crowd into remaining sectors with a lower than average profit. The profit is pushed down further by the crowding and as Lenin suggested, "The constant competition for foreign investment and contracts with global brand owners and other leading firms leaves many developing country suppliers with little leverage in the chain." (Lenin, pp 13) This is the "race to the bottom" (Lenin,1916).

Therefore, because of the nature of how the Global Value Chain is constructed by the multinational firms that owns it, the distribution of benefits will always be disproportionately distributed to benefit centers in the core than flow equitably to participants in the periphery. The aim of critiquing modern literature was to demonstrate the truths that are too often veiled and disguised to project a view that countries in the periphery are simply not doing enough to move from their space of integration, they need to upgrade and engage in more value adding activities in the chain.

Multinational firms will deliberately never outsource the strategic, high value add activities to firms in the periphery because that would lead to a transfer of high value knowledge and invariably strip the multinational firms of its monopolistic status that has allowed for it to own the Global Value Chain and remain in power. Upgrading is not a topic to be discarded, it is useful for countries in the periphery to review how they can upgrade in the chain, some participation is better than none. However, upgrading should only be the first step and not the destination. The real victory in the distribution of benefits lies in the ownership and control of the value chain more than it does in the movement within the value chain.

4. Illustrations of the Leninist Theory of Global Value Chains: The Case of the Steel Global Value Chain

4.1 Global Concentration of Production and the Dominance of Monopolies Tabulate

The first part of Lenin's theory of Imperialism deals with unravelling how free trade in a capitalist environment had invariably lent itself to creating an atmosphere conducive to the establishment of monopolies. Here he describes how the ever-increasing size of enterprises that grew through the concentration of production, through the concentration of labour and the export of capital catalysed the monopoly agenda that was the most characteristic feature of capitalism (Lenin, 1916).

In the subsequent paragraphs, an intricate analysis of the steel value chain and its actors is investigated. The aim for each section of the analysis is aimed at uncovering the parallels that exist between the characteristics of the theory of Imperialism that Lenin postulated and the empirical evidence inherent within the steel value chain. The first section deals with the issue of the concentration of production and the dominance of monopolies. The concentration of production in this context is demonstrated through the sheer size of the output that each firm produces, which is invariably what has led them to assume the top five biggest producers list. The global footprint of these organisations attests to Lenin's views on how the monopoly firms had to extend their tentacles beyond domestic borders in order to maintain their profit base and monopolistic capture of world markets.

Below is a list of the top five global coal producers in the steel value chain. They are the top five firms by virtue of the output they produce on an annual basis. The aim behind listing these firms is to establish where the concentration of power lies on the supply side of the steel value chain. The coal suppliers are assessed because in the production of steel, coal and iron ore are two critical raw inputs that are needed in order to facilitate the steel making process:

Mine Name	Annual Production	Owned by	Geographic Location	Geographic Presence
North Antelope Rochelle	2.3 billion tonnes	Peabody Energy	USA	USA, China, Australia, India
Haerwusu Coal Mine	1.7 billion tonnes	Shenhua Group	China	China
Heidaigou Coal Mine	1.5 billion	Shenhua Group	China	China
Moatize Coal Mine	1,498 Mt.	Vale	Brazil	Brazil, China, Australia, Mozambique, Japan, Oman etc.
Black Thunder Coal Mine	1.322 Mt	Arch Coal	USA	USA

Table 1: Global Organisations Leading in the Coal Production Industry

An observation worth noting is the geographic location of the organisations leading in the coal production industry. The United States of America along with China demonstrate clear market domination with 44% and 38% of market share respectively. This geographic spread of commodity availability tells a compelling story about where the power base for the suppliers of coal lies. Interesting to note about the geographic presence of the above organisations, is that the concentration of production either manifests itself through areas that are clearly coal supply rich like China and Australia or the concentration is within a single country as is the case of Shenhua Group for China and Arch Coal for the United States of America.

Figure 3: Top five global coal producers (Mining Technology, 2015)

Next is the analysis of the top five global iron ore producers in the steel value chain. The firms below were ranked according to the output they produced per annum relative to other iron ore producers globally. Interesting to observe will be to see if there is a direct correlation between the location of iron ore producers and coal producers.

Mine Name	Annual Production	Owned by	Geographic Location	Geographic Presence
Ansteel Mine,	1.3 Billion tonnes	Anshan Iron and Steel Group	China	China
Hamersley mine	163MT	Rio Tinto	Australia	Australia, Brazil, Ghana, Guinea
Chichester mine	90Mt	Fortescue Metals	Australia	Australia
BHP Billiton's Yandi	70Mt	BHP Billiton	Australia	Australia (For iron ore) Has presence in other regions for different commodities
BHP Billiton Mount Whaleback	77Mt	BHP Billiton	Australia	

Table 2: Top five global iron ore producers (Mining Technology, 2015)

The interpretation from the table above is that Australia is a clear market leader in the production of iron ore. Interestingly enough, China still maintains some presence in the iron ore space. Australia has a significant concentration of production for iron ore and coal. This implies that the concentration of power for the supply of coal is in Australia.

Below is an assessment of the top five global producers of steel. These groups of firms will be referred to as the steel manufacturers in the steel value chain. These are the firms that collect the raw materials from firms in various regions in order to manufacture the production of steel.

Organisation Name	Annual Production	Headquarters	Geographic Presence
ArcelorMittal	98.09 million tonnes	Luxembourg	China, Bosnia, France, Germany, Algeria, South Africa, Brazil, Argentina etc.
Nippon Steel and Sumitomo Metal	49.30 million tonnes.	Japan	USA, Sweden, South Africa, Nigeria, China, India etc.
Hebei Iron and Steel Group	47.09 million tonnes	China	China
Baosteel Group	43.35million tonnes	China	China
POSCO (formerly Pohang Iron and Steel Company	41.43 million tonnes	South Korea	Vietnam, Mexico, Cameroon, India

Table 3: Top five global steel producing companies (World Steel Association 2015)

The interpretation of the table above is that the Asian region has clear market domination when it comes to the production of steel with China, Japan and South Korea making an appearance. China is a particularly strong contender as it has a presence on the coal and iron ore production side of the value chain. It also has a significant presence in the steel consumption side too. China has produced four times more steel than what America produced during its peak in 1970 (Alloway, 2015). An indication once more of China's behemoth role in the steel Global Value Chain.

The World Steel Association released its Short Range Outlook report regarding global steel demand forecasts for the financial year 2015/2016. The reports forecast revealed that within a regional context, Asia and Oceania own 65.2% of the global demand for steel (refer to picture below). Of the total global steel consumption of 1513 Mt in the year 2015, 995 Mt of that was attributed to consumption in Asia and Oceania. Following Asia and Oceania by a far less significant margin is the European Union with a consumption rate of 150 Mt in the year 2015 attributing to 10% of global consumption.

The European Union is closely followed by the North American Free Trade Area, rallying in at a consumption rate of 141 Mt in the year 2015 attributing to 9.4% global steel consumption.

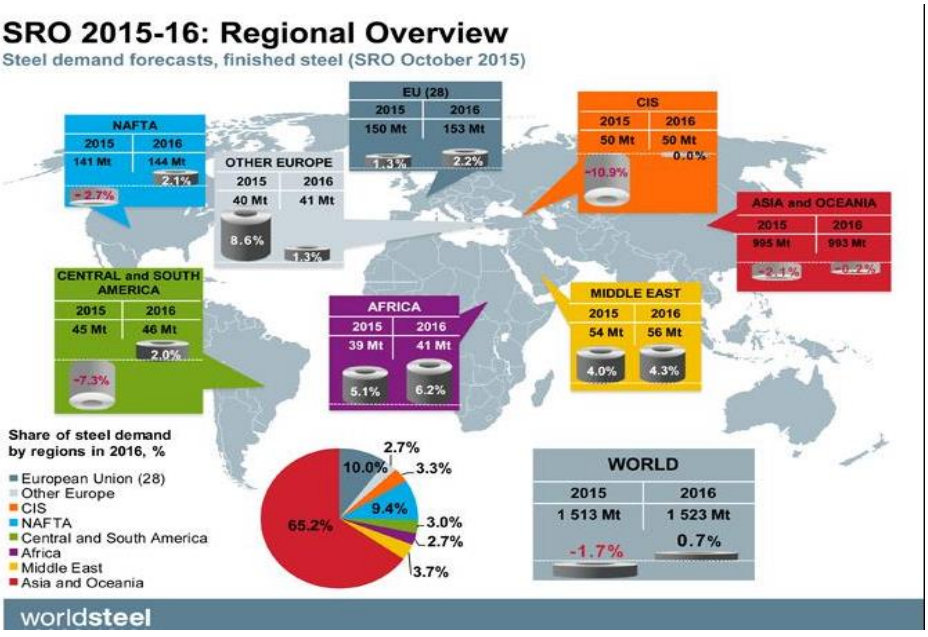


Figure 3: Regional view of steel consuming markets (World Steel Association, 2015

From the regional overview and the industry-based statistics, it would be plausible to deduce that the five biggest steel consuming organisations are likely from the Asia and Oceania region and that they reside well within the construction industry (Construction industry because according to the World Steel Association, the construction industry consumes 50% of the steel produced globally). The context of this drill down analysis is to understand which organisations wield buying power within the steel production value chain. This in turn, allows for a more intricate analysis of Lenin's theory of Imperialism coming to manifestation through the vehicle of capitalism as characterised by the distinct features of concentration of production, the subliminal creation of monopolies and slow elimination of free trade.

Below is a breakdown of the top five global construction firms. The word 'top' denotes that these organisations are global leaders in terms of a) the profits generated per annum b) the organisations asset base and c) the organisations market capitalisation. All these matrices are combined together to give a more concise view of the ranking.

The aim for unravelling the top players in the steel consumption side of the value chain is to ascertain whether the organisations on the consumption side of the GLOBAL VALUE CHAIN have links with organisations on the supply and intermediate side of the GLOBAL VALUE CHAIN.

Company Name	**Profits**	**Asset Base**	**Market Capitalization**	**Headquarters**
The China State Construction Engineering Company	$3.9 billion	$150 billion	$36.8 billion	China
China Communications Construction	$2.3billlion	$101.6 billion	$41.2billion	China
China's Railway Group	$1.7 billion	$110.1billion	$39.7billion	China
Vinci	$3.3 billion	$77.6billion	$35.2 billion	France
Spain's Group ACS	$951 million	$47.6 billion	$11.4 billion	Spain

Table 4: Tabulating the top five firms steel consuming firms (World Steel Association, 2015).

The compiled list of organisations elucidates the idea of where the concentration of steel consumption resides. It is evident that Asia, specifically China is very much a significant force to be reckoned with on the buy and supply side of the steel value chain. Not only is there a high concentration of organisations that consume large volumes of steel in the Asia and

Oceania region, but in the same breath there is a high concentration of steel producers in the very same region.

While the firms mentioned above do not have an ownership stake in the supply side firms mentioned in the preceding paragraphs, these firms do have other operational activities that extend beyond construction alone. Vinci as an example is a firm that has operations in steel manufacturing and construction, as does Group ACS. In the same token, ArcelorMittal as a steel manufacturer have operations in steel manufacturing and mining (Reuters, 2015). This form of vertical integration was necessary to facilitate the export of capital that was taking place. The concept of capital export is expanded in the ensuing paragraphs.

4.2 Export of Capital

Lenin cites that the export of capital implies a stage when monopoly firms no longer export commodities alone but instead branch into the space of exporting capital in order to expand their footprint into different geographies. The rationale behind the export of capital is to increase profits of the firm by exporting capital to so-called "backward countries" (Lenin,1916) where capital investment is scarce, the price of land in relative terms is low and wages for labour is cheap due to the low skill levels of the inhabitants in the given country.

The pursuit for expansion into different geographies by monopoly firms was not undertaken in isolation. The banks and government played an instrumental role in the facilitation of the expansion. The role of the bank was to expedite the export of the capital through the provision of capital in the form of credit to the monopoly firms, and also through the proliferation of the bank through global branch presence. Government involvement became apparent to firms that operated in the space of goods that were of national importance i.e. commodities, energy, chemicals etc. (Lenin, 1916).

In his book *Finance Capital*, Hilferding makes specific mention of the *Export of Capital and the struggle for Economic* Territory. The development towards finance capital enhances the importance of the size of the economic territory (Hilferding, 1910). This has always been extremely important for the development of capitalist production. Hilferding is quoted stating that "*The larger and more populous the economic territory, the larger the individual plant can*

be, the lower the costs of production, and the greater the degree of specialization within the plant, which also reduces costs of production. The larger the economic territory, the more easily can industry be located where the natural conditions are most favourable and the productivity of labour is highest. The more extensive the territory, the more diversified is production and the more probable it is that the various branches of production will complement one another and that transport costs on imports from abroad will be saved" (Hilferding, pp18))

This is the rationale behind why multinational firms saw it as advantageous to export their capital to new geographies, to reduce costs, increase productivity and by so doing increase profits. This is what modern literature would term the decentralization of production activities, denoting the formation of the Global Value Chain. With particular reference to the steel value chain, vertical integration presents itself in the form of firms owning all stages of the value chain through not only the decentralization of the production function, but also through the ownership of the value chain itself.

ArcelorMittal at an organisation level is seen to be a vertically integrated firm that has both mines and steel manufacturing plants at its disposal (Reuters,2015). With a presence in 60 countries (that undertake mining and steel manufacturing activities), the export of capital has been a consistent theme for this firm. ArcelorMittal has exported capital to expand its operations, to extend its global footprint and to ensure market dominance (Reuters,2015). This is precisely how ArcelorMittal became the top steel manufacturing firm in the world, by strategic takeovers and significant global presence.

Another example of vertical integration through the export of capital is the Chinese government through the ownership of SOE's (State-Owned Enterprises) that form the steel value chain by their production of raw materials and manufacturing of steel. Both coal mines (Haerwusu and Heidaigou) are government owned, the iron ore mine (Ansteel Mine) is government owned, as are both of the steel manufacturing firms (Baosteel and Hebei Steel) mentioned in the above literature. The interpretation derived from the analysis observed is that owning the steel value chain allows firms to ensure that the accrual of benefits generated from the production activities, flows directly to the firms that own the chain. Ownership of

the chain is tantamount to ensuring the benefits distributed through the chain are evenly and correctly distributed.

For as long as the governance structure of buyer driven and supplier driven value chains exists, leading firms will always benefit unfairly in relation to their supplier country counterparts. Suppliers from developing countries should not be participating merely to provide services at low remuneration rates – effective participation should result in improvements in the form of earnings, learning and development. The flow of the benefits is not monetary alone but also manifests itself in the form of the diffusion of technology, the upskilling of workers and the creation of centers of innovation. The benefits of vertical integration come from the greater capacity it gives organisations to control access to inputs and to control the cost, quality and delivery times of those inputs (White, 2009). Countries in the periphery need to start focusing on how best to gain ownership over what it is they have (be it mineral wealth, agricultural products, surplus labour) rather than channelling efforts towards mere Global Value Chain participation alone.

4.3 The Role of Banks

In this section of the theory, Lenin unravels the powerful role of banks. Banks in their conventional sense are supposed to facilitate payments, provide credit and allow for deposits of households. In the context of the theory of Imperialism both Lenin and Hilferding, give an expansive elaboration on how in actual fact the concentration of banks was a necessary precondition to drive expansion capitalism therefore imperialism (Hilferding,1910). Their observation was that as banks begun to develop and became more concentrated in a small number of establishments, they grew from modest middlemen into powerful monopolies having at their command almost the whole of the money capital of all the capitalists and small businessmen. Banks began to occupy a larger part of the means of production and sources of raw materials in any one country and in a number of countries. This transformation of numerous modest intermediaries into a handful of monopolists is one of the fundamental processes in the growth of capitalism into capitalist imperialism (Lenin, 1916).

Lenin cites that as the bank operations grew to enormous dimensions, the outcome was that a handful of monopolists were subordinate to the banks. What the banks then did was to

ascertain exactly the financial position of the various capitalists, then to control and influence them, they restrict or enlarge, facilitate or hinder credits to determine the fate of the capitalist's firms (Lenin, 1916). While banks continue to play a large role in the availing of capital to capitalist firms in modern day times, the issuing of equity forms another part of the finance-raising endeavour. No longer is finance made available in the banking context alone, the listing of shares on the stock exchange has afforded capitalist organisations to source alternative means of accessing capital. An illustration that depicts the proliferation of finance capital through a medium outside the bank is the empirical case of Vanguard Group.

Vanguard Group is one of the largest investment companies in the world with more than $3trillion assets under management (Reuters,2015). Vanguard Group is a well-suited example of a financial institution that has q widespread presence across the firms within the steel value chain. For example, it has a 6.7% ownership stake in Peabody Group (owners of the American coalmine, North Antelope Rochelle). It also has a stake of 2.35% of the Arch Coal (owners of the Black Thunder Coal Mine in the US). Vanguard Group also has a 4.45% ownership stake in the Brazilian Vale Group (the owners of the Moatize Coal Mine in Mozambique) (Reuters,2015). That is a presence in three of the five biggest coal-producing companies in the world.

Vanguard group also has a stake of 3.32% in BHP Billiton (one of the largest iron ore producing companies in the world based in Australia). Vanguard group has a presence in China where it holds a stake of 2.97% in the China Construction Communication Corporation (the biggest construction and steel consuming organisation in the world) (Reuters,2015). It also has 1,831,610 million shares in Vinci SA (the second largest construction and steel consumption organisation in the world). Ownership is also present in the Spain based construction company ACS group of 2%. Vanguard Group is a clear illustration of an organisation that has capital permeating in various organisations, across value chains and across geographic regions (Reuters,2015).

Equity forms only one aspect of an organisation's balance sheet, the other aspect is the liabilities. It would have been more useful to get information on the actual ownership stake that banks have on the respective organisations, however, there is very little if any explicit information made available online that exposes this for the general public. Instead, I will be

looking at the liabilities in the annual reports of the organisations listed above and calculate as a percentage of the entire book of the organisation, what portion is attributed to money the firm owes to the bank. This will highlight the influence banks still have in firms in modern day times.

Mine Name	**Owned by**	**Balance Sheet**	**Liabilities as a percentage of Balance sheet**
North Antelope Rochelle	Peabody Group	USD 26, 382 Million	39.67%
Haerwusu Coal Mine	Shenhua Group	USD 1, 091 Trillion	15,43%
Heidaigou Coal Mine	Shenhua Group		
Moatize Coal Mine	Vale	USD 232,978 Million	26.34%
Black Thunder Coal Mine	Arch Coal	USD 3,980 Billion	33.56%

Table 5. Liabilities of coal mine firms as a percentage of the balance sheet. (Reuters, 2015)

Mine Name	**Owned by**	**Balance Sheet**	**Liabilities as a percentage of Balance sheet**
Ansteel Iron Mine	Anshan Iron and Steel Group	USD 880,970 Million	16.57%
Hamersley Iron Mine	Rio Tinto	USD 202,600 Million	25%
Chichester Iron Mine	Fortescue Metals	USD 16,720 Billion	36,54%
BHP Billiton's Yandi	BHP Billiton	USD 316,66 Billion	22.20%
BHP Billiton Whaleback	BHP Billiton		

Table 6: Liabilities of the iron ore mine firms as a percentage of the balance sheet (Reuters, 2015)

Firm Name	Balance Sheet	Liabilities as a percentage of Balance sheet
ArcelorMittal	USD 153,693 Billion	32.02%
Nippon Steel and Sumitomo Metal	USD 143, 158 Billion	29.19%
Hebei Iron and Steel Group	USD 343,279 Million	37.35%
Baosteel Group	USD 71,842 Billion	22.81%
POSCO (formerly Pohang Iron and Steel Company	USD 181,646 Million	18.51%

Table 7: Liabilities of the steel manufacturing firms as a percentage of the balance sheet (Reuters. 2015)

Looking at the financial results year ending 2015 of the respective firms, the extrapolation is that the above firms have financial capital due to the bank that spreads between 16% to almost 40% as a percentage of the firm's total balance sheet. The aim of these figures was to ascertain the ties banks have with firms in modern day times. The picture does not depict a level of control that Lenin explains in his theory. Likely because access to additional information that may point to the level of involvement of the bank with the firms was not easily accessible in the public domain. However, what is clear is that firms still need banks to finance a significant part of their operations, which deems the role of the bank, still a necessary and important one.

4.4 The Formation of Monopolist Associations

This part of the theory describes an era when the concentration of production has reached a point where it is possible for the cartels to make an approximate estimate of all sources of raw materials (for example, the iron ore deposits) of a given country, several countries, or of the whole world (Lenin, 1916). Not only were such estimates made, but the sources were captured by gigantic monopolist associations that recognized the importance of owning the inputs of production and the impact this had on production and the price of the commodity goods produced (Lenin, 1916).

An approximate estimate of the capacity of markets was also made, and the associations would "divide" them up among themselves by agreement. Skilled labour was also monopolised through the division of activities of production to different parts of the globe. The extractive production activities were reserved for low skilled labour that was merely

responsible for the manual labour of extraction. Activities at the higher end of the Global Value Chain spectrum where the design, the distribution and the origination of the intellectual property took place were work left for highly skilled labour.

Lenin explains a profound view on the meaning of capitalism. In this view, he shares that the division of the world, among capital associations is a demonstration that capitalism in its imperialist stage leads directly to the most comprehensive socialisation of production. "*Production becomes social, but appropriation remains private. The social means of production remain the private property of a few. The general framework of formally recognised free competition remains, and the yoke of a few monopolists on the rest of the population become a hundred times heavier, more burdensome and intolerable" (Lenin 7)*

The steel value chain has a plethora of steel associations that range from steel manufacturing associations, steel distribution associations to national and regional steel associations. Perhaps the most significant association for the purpose of this research document due to its international reach and global membership profile is the World Steel Association. Originally formed in October 1967 as the International Iron and Steel Institute, now the World Steel Association as of October 2008 is a non-profit organisation headquartered in Brussels Belgium and Beijing China. It represents well over 150 steel producers, including 9 of the 10 largest steel producers globally (World Steel Association, 2013).

The history of the association began with 21 members that came from Europe (UK, France, Germany to name a few), Japan and the United States of America. In the 1970's emerging market participants Brazil, India and South Korea obtained membership with the major Chinese corporations joining in the 1980's. The membership profile of World Steel Association. includes four of the top five largest global steel manufacturers, which are ArcelorMittal, Nippon Steel, Baosteel Company and Pohang iron and Steel Company (World Steel Association,2013). The difficulty in linking some of Lenin's assertions about cartels and their presumed internal activities of coming together on the basis of agreeing on market share, coming to terms of the sales agreement and controlling the price by fixing supply is in presenting the burden of proof. The World Steel Association. has a range of activities that on a surface level appear to be for the advancement and development of the steel industry and all its stakeholders as a whole, but could very well be a guise to cover up the planning and

fixing that Lenin postulated about the nature of associations. Particularly the ones within the steel value chain considering their historical context.

5. How to best derive maximum benefits from Global Value Chain participation

Wortzel and Wortzel (1981) describe the subsequent outcomes of the sequence of technological learning and upgrading followed by successful East Asian firms. Based on a study of locally-owned exporting firms in five countries (the Republic of Korea, Hong Kong, Taiwan, Thailand and the Philippines), the study identified five stages capability development framework that exporting countries could take advantage of in the pursuit of gaining more ownership and thus benefits derived from Global Value Chain participation. The stages depict a scenario where exporting countries made an attempt to upgrade downstream on the value chain. The framework below describes the differences in activities between exporting firms still in the stage one phase of their Global Value Chain participation to firms in the stage five phase.

Stage one. For the stage one firm, exporting is initiated by an importer searching for a low cost facility capable of performing certain specific operations. The importer takes control of all external design decisions, including appearance and packaging, and is likely to determine the internal design of the product. The importers take quality control responsibility by inspecting finished goods and, often, work in process. They are also responsible for arranging for the shipping of the products from the exporting firm. The local producer is simply a seller of production capacity whose success depends largely on the prices he quotes and the ease of doing business in their host country. (Wortzel and Wortzel, 1981)

Stage two. The stage two firm has developed some internal design capabilities. The firm did not just perform the tasks outsourced to it by the importing firm, but it took the time to study the products left for assembling in order to understand some of the external design and packaging specifications of the product. The stage two firm is not yet perfect at this feat, as it still needs help from its customers in setting specifications. It has also begun to develop a rudimentary sales and marketing organization after realising the value add and the profit prospects of positioning itself within that area of the value chain (Wortzel and Wortzel, 1981)

Stage three. The stage three firm still produces for the importing firms' customer orders, but it has developed enough internal design capability to produce export quality merchandise with little or virtually no assistance from its importer customers in setting internal and external design specifications. The stage three exporting firm will try to broaden its range of products by 'trading up' its product line by adding new features for differentiation and then marketing to either its own domestic market or attempt to secure new contracts with other importing firms whose markets may have an interest in the exporting firm's products. In any event, the stage three firm begins to take steps to gain more control over its product lines, its sales volume, its customers and the prices it obtains. (Wortzel and Wortzel, 1981)

Stage four. The stage four firm may still devote some proportion of its production capacity to the importing firm's requirements, however, it simultaneously has begun to produce and market its own products. The stage four firm's most important competitive weapon is still price, especially if it is competing in product categories such as consumer electronics and athletic shoes. The stage four firm typically falls under the umbrella of the NIC [newly industrialized countries] manufacturers and would tend to export products most often employed as promotional items. Since the stage four firm chooses what it will produce, its product design and product development are more elaborate than those of the stage three firm. (Wortzel and Wortzel, 1981)

Stage five. The stage five firm will be virtually indistinguishable from firms indigenous to the advanced countries to which it exports. It will have a marketing and sales organization similar to that of the indigenous firms with which it competes as it would have mastered the art of product development from inception to the distribution stage. The stage five firm in many respects moves from a market/modular Global Value Chain interaction to one that is potentially vertically integrated depending on the extent to which it can secure inputs for initial production. Its technological propensity to facilitate processing and aid in reaching economies of scale and the extent to which it can generate its own market to service (Wortzel and Wortzel, 1981: 55-56). This model of upgrading stages is constructed from the viewpoint of firms in developing countries. The upgrading process is seen as one in which firms acquire capabilities and, once they have been acquired, the firms are able to find foreign buyers wishing to acquire products embodying these capabilities.

The journey of upgrading is not an easy one. Exporting firms have a number of challenges to grapple with in their initial integration into the value chain. Issues pertaining to manufacturing requirements and standards that exporting firms have never been required to deliver on in their own local markets. The challenge of infrastructure, trade policies, energy, political stability etc. However, the initial point of integration needn't be a permanent point of integration and participation. The reality of Global Value Chain related gain is that firms wishing to attain an equitable distribution of the profit share rising from Global Value Chain participation need to get to a point where they have ownership and control within the Global Value Chain.

A sensible resolve for exporting countries new to the Global Value Chain space is to accept their position as providers of low skill and cheap labour initially, with a view to upgrade and own an area in the value chain. Certainly, the decision to upgrade is not a simplistic one, it is also about which direction does the firm upgrade in and in which area. It is a decision that will be influenced by where the comparative advantage for the country lies, the opportunities of expansion inherent in that particular industry and will be informed by government support and policy makers buy-in, in attempting to assist the exporting firm in its upgrading and ownership endeavour.

6. Conclusion

The advent of Global Value Chains has provoked emerging markets to begin to question the role that they will assume when participating in Global Value Chains. The question of distribution remains a poignant one. No longer is it sufficient to participate in a Global Value Chain with the opportunity for ownership and control being circumvented from firms in the periphery to big firms situated in the core.

The research above was undertaken to contextualize the narrative surrounding the distribution of benefits between countries in the periphery and countries in the core within a Global Value Chain context. Section one gave perspective to the origination of the theory of Imperialism. Here the system of capitalism, the formation of monopolies and the role of finance capital and banks was elaborately expanded. Lenin's theory was in essence, a culmination of all his predecessor's assertions about capitalism and its spoils. Section two unpacked what modern literature had to say about what drives the establishment of Global

Value Chains. It highlighted the governance structure and the types of Global Value Chains. This was followed by a critique that was aimed at demonstrating that multinational firms are very deliberate about what activities they outsource, why those activities are outsourced and how they are separated.

What became apparent in the research from the critique was that the assertions Lenin had made about the capitalist monopoly firms and their engagement with countries in the periphery still remains true. Multinational firms are outsourcing low skill, cheap labour production activities to countries in the periphery because this allows for the reduction in the cost of production and a subsequent increase into profits. A benefit that is not distributed in to the exporting supplier firms that directly produced the goods being exported and sold to markets in the core at price rates that do not compete with the earnings of the producers.

Section three analyzed the steel Global Value Chain and found that the role players in the value chain exhibit Leninist imperialism traits. There was a concentration of production in geographies that were rich in coal and iron ore production. Firms operating within the steel value chain had a geographic footprint that was either concentrated in their home country or spread to regions that were rich in the commodity production. Banks and other financial institutions continue to have a hold on firms. This was demonstrated through the balance sheet assessment and Vanguard Group's holdings. Vanguard Group was an illustration of the ubiquitous presence of finance capital. The assertion on associations was difficult to prove because collusions of that nature are not ones that are publicly declared, however, the global reach and the membership within the association does leave room for agreements of that nature to take place.

Section four gave a description of how firms can gain maximum benefits from Global Value Chain participation. While upgrading the value chain should be an aspiration for firms in the periphery, it should not be the end goal. The five-stage capability development framework outlined by Wortzel and Wortzel is one that firms in the periphery ought to think about embracing to ensure that they do not remain net losers in their participation within Global Value Chains. What is empowering about the framework is that it equips firms with the tools to participate intelligently within the value chain. That even though the designated domestic firm was tasked with the activity of carrying out rudimentary, non-complex tasks, the art of

learning and understanding the product design and development of the components being assembled is where the power of moving further up or downstream in the Global Value Chain lies.

Section five was a summary of how government and policymakers can assist domestic firms in at least setting the country up for Global Value Chain integration. Having in place low tariffs, trade agreements, good infrastructure, sound public institutions and centers of innovation create an environment conducive for Global Value Chain establishment. Once again upgrading is not the end goal for domestic firms; ownership and control within the value chain is what will lead to the fair distribution of benefits between countries in the core and the periphery.

7. Development Policy Recommendations

There are a few elements that are noteworthy for policy makers and government's residents within developing countries that wish for a mutually beneficial exchange stemming from Global Value Chain participation. Governments play a key role in the policies they enact that either promote or reduce the capacities of domestic firms to enhance their competitiveness, attract investment, and insert themselves into Global Value Chains (United Nations, 2010). While governance as a whole is generally important, as it signals to would be investors that a country is a good place to invest their capital, it is of equal importance for government in developing countries to begin to look at how it can assist domestic firms in arriving at a stage five phase exporting firm as articulated in the section above.

The considerations listed below are there to guide the integration narrative for developing countries. Integration into the value chain must be viewed as a first step and not as an ultimate goal for participating firms as this will lead to the perpetually skewed distribution of benefits in Global Value Chains. The ultimate goal is to replicate what the Sino Asian firms did when they integrated into the big United States of America Global Value Chains, they learned, they replicated and extended their value chain presence. By so doing, they opened themselves up to servicing more clients, specifically servicing their own domestic markets. The considerations below summarise what countries in the core need to begin doing in order to at least, begin the integration process.

Barriers to Trade

Tariff considerations matter because of the significant impact they have on market access. The extent of the tariffs and import restrictions in potential target markets affect the potential of an organisation to engage with different end-markets (Olarreaga, 2007). Therefore, tariff escalation can be particularly damaging as Global Value Chain trade takes place in similar tariff lines. Also, tariffs charged on imported components, services and capital equipment required for the production of exports becomes a form of tax on the exports in Global Value Chains, which make them particularly expensive (Welch, 2008). It is for this reason that careful consideration on tariffs must be undertaken.

Trade Agreements

Trade agreements have the largest impact if they cover as many dimensions of a Global Value Chain as possible. While careful tariff consideration is a starting point for offering companies new trade opportunities, the value chain also requires efficient services and the possibility to move people, capital and technology across borders as seamlessly and cost effectively as what is fairly possible (Kurihara, 2011). This means that developing countries are encouraged to enter into trade agreements that will ensure that there are mutual benefits accrued for trade participation for both parties. The benefits that flow from the agreement should do so equally for both parties engaged. Trade policy should address the obstacles and opportunities for both parties at all points of the value chain, but remain neutral with respect to firms' strategies for accessing foreign inputs and markets, i.e. it should not favour one mode of access over others (Helpman, 2007).

Infrastructure

Infrastructure development is an important element in enabling Global Value Chain participation, as goods must be carried in and out of the host country to allow for trade. The ability of exporting firms to engage in trade is determined much more by the quality of the port facilities (sea and air) in the host country than by the types of preferential access that they might enjoy in major industrialized markets (Humphrey, 2002). Reliable and cost-competitive infrastructure facilitates both trade linkages and FDI attraction. Significant gaps in the provision of infrastructure can hold back competitiveness and the expansion of

production in developing countries (United Nations, 2010)., Ensuring that state expenditure is directed to infrastructure development is critical for the host government, and even so investments beyond borders, especially in infrastructure facilities that connect a country to its nearby neighbors in regional supply chains (Gibbon, 2006).

Public Institutions

Sound public institutions (primarily legal and financial institutions) that enable contract execution, adequately secure property rights and investor protection (Helpman, 2007). The establishment of these institutions would be there to ensure that an impartial judiciary system exists, which would serve as a catalyst for the reduction of corruption and allow agents to more easily overcome frictions that arise when two parties enter into a production-trade relationship (United Nations, 2010). Thus, the quality of institutions can enhance aggregate growth by increasing trade. It allows industries that depend more on a large set of intermediate inputs (e.g. through long value chains) or on non-contractible inputs (e.g. Intangible assets) to grow faster, when there is the certainty that sound, robust and reliable public institutions exist (Bellman, 2014).

Innovation

Investment in creating an environment that allows and encourages domestic firms to innovate. Innovation through research, learning and emulating areas in the value chain that generates the most value add as demonstrated in the five-stage model in the section above. The highest proportion of value creation in a Global Value Chain is often found in upstream activities such as new concept improvement, Research &Development or the manufacturing of key parts and components (Organisation of Economic and Cooperative Development, 2013). It is also found in certain downstream activities such as marketing, branding or customer service. Such activities involve tacit, non-codified knowledge in areas such as original design, the creation and management of cutting-edge technology and complex systems, as well as management or organisational know-how (Bellman, 2009).

The creation of innovation from whichever angle of the value chain stream allows for the forging of linkages between people, companies (domestic and foreign), institutions, national systems of innovation (NSIs) and human capital (United Nations, 2010). These are particularly important both for improving the position of local firms and attracting Foreign Direct

Investment in the manufacturing, offshore services, and mining value chains, given the rapid pace at which technology requirements evolve in these sectors (World Economic Forum, 2012).

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