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ABSTRACT

After emerging out of the extensive outsourcing activities of multinational corporations, the virtual factory model is now playing a prominent role in globalization. Using Apple as a case study, this paper explores the concept of a virtual manufacturer. As multinational corporations extensively use intellectual property in emerging markets, they are also concerned about the infringement of intellectual property rights. This study examines this problem that has become increasingly relevant in the context of the protection of intellectual property rights in global value chains and trade. An international index is used to demonstrate that rights to intellectual property are typically excellent in industrialized countries and adequate in the majority of developing countries. The trade dispute between the US and China has received considerable attention here.

Keywords: Global value chain; Intellectual property rights; MNCs; Virtual firms; Apple; Trade dispute.

1.0 Introduction

As foreign trade becomes more and more vital, managing intellectual property has become more of an issue. It encompasses patents, trademarks, copyrights, brand names, product designs, software, databases, as well as business structures and foundations (Cummins, 2005). Through global value chains, there is a new method for dividing international labor, whereby lead businesses specialize in value-added activities such as research and development, product design, branding, marketing, and retailing, while non-lead businesses produce raw materials, assemble parts, and evaluate the final product.

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Global trade has been revolutionized by value chains, which have improved the flow of goods across intermediaries, as well as made the export of intangibles possible. Intangible assets have grown in importance in international trade as much as the flow of commodities and final goods across borders.

There are several ways to export intangible assets, but one stands out as a revolutionary and original means of exporting those assets. The reason for that is because holders of those assets collect license fees or commissions from licensing deals on software, inventions, patents, designs, trademarks, and many other kinds of intellectual property. There are some intangible assets that cannot be standardized. These include logistical expertise and business models, which can’t be bought or sold. Virtual Companies, like, Apple Inc., Japanese clothing company- Fast Retailing Co. Ltd., British electrical products company- Dyson Ltd. and they do not license their intellectual property to third parties (World Development Report, 2020). Consequently, they depend on their intellectual property for building and operating value chains, and they delegate and subcontract all manufacturing operations. Their revenue is derived from intellectual property that is generated by tangible products that are primarily fabricated by contractors in developing countries. It is not uncommon for multinational companies to keep some of their intellectual property at headquarters. This is because intellectual property protection is inadequate, at least in comparison to the most reputable institutions. Direct investment is a key argument against intellectual property theft since it permits firms to export their intellectual property while prohibiting it from remaining within the firm. A viable way to promote intangibles to international markets is to attract foreign direct investment through intellectual property. A typical example is Toyota’s direct investment in Thailand. Other businesses exemplifying this approach include General Motors Company, Mercedes-Benz AG, and Motor Corp (Fu & Ghauri, 2020).

To produce and exchange goods across value chains, a company’s intellectual property and intangible assets are worth twice as much as its tangible assets. A large portion of the value of goods acquired is derived from intangible assets, primarily technology and brand recognition. The rest of the value is derived from physical assets, largely controlled by corporations in developing countries. As a result, more than half of the economic value is labor-intensive (WIPO, 2017). Occasionally, the proportion of IP in value addition is higher for certain advanced goods and recognizable brands. Essentially, Apple’s intangible assets like iOS, the Apple logo, the interface, and marketing contribute to nearly 59% of the $1,000 selling price of the iPhone X (Xing, 2020). A recognizable brand, proactive marketing campaigns, and technological innovations generated nearly forty percent of Nike’s value addition from international sales (Nike, 2018). Despite its importance and benefits to value-added activities, the
GVCs Study focuses on activities associated with fabricating and assembling tangible intermediate products. Dedicated to unique expertise, it provides the virtual manufacturer with intangibles that provide value to their businesses. Consequently, GVCs are only a component of international trade, and their added value is mostly measured during the manufacturing phase. Additionally, GVCs focus on services like finance, logistic and transportation, involved in the manufacturing and assembly processes, which are vital to creating material components and finished products (Heuser & Mattoo, 2017). Intangibles are considered to be a significant part of international trade and the economy using this method. The amount of trade across national borders is very easy to derive. Data related to trade, goods that are transported across the nation’s border and passed through customs are counted as exports from that country. It is imperative to know the actual value of goods crossing national borders.

Analysis of global value chains using cross-country input–output tables is insufficient because it ignores multinational corporations and their overseas subsidiaries. It is especially evident when multinational affiliates of global corporations interact in GVCs in a unique manner with companies with a strictly domestic focus. As shown in the following illustration, Wang et al. (2021) proposes an approach to examine the different types of GVC participation by examining economic sectors, which takes into account how foreign MNC affiliated companies contribute to value-added activities.

Prior approaches did not consider the contributions of multinational companies. Firms whose products are eventually used for final product sales in local markets are included in this category. In addition, it includes the value-added of goods exported by multinational corporations to third economies. It has been suggested that they should be classified as GVCs rather than pure domestic activity and conventional trade in older taxonomies.

1.1 Implication of virtual manufacturer

Virtual companies increasingly do not have to cross borders to sell their products abroad. They produce or assemble their goods overseas, then ship them to international markets from their country of manufacture. In the present situation, customs authorities in countries where MNCs are virtual manufacturers, cannot investigate their imports and exports. As the goods are supplied to the end-user, virtual goods makers also own the product that subcontractors assembled (Bayard et al., 2015). In addition, contractors only disclose the manufacturing costs when delivering goods to overseas firms for consumption in foreign markets. Intangibles incorporated into final goods are not included in the data of trade because they are not measured by their value-added.
Intangibles are incorporated into all kinds of goods, regardless of their nationality. In this sense, Apple’s top assembler, Foxconn Technology Co. Ltd., only discloses the cost of producing iPhones from China to the United States. In traditional trade statistics, intangible products manufactured through outsourced activities of MNCs are virtually ignored (Xing, 2020).

Trade is one of the primary drivers of economic growth. After emerging out of the extensive outsourcing activities of multinational corporations, the virtual factory model is now assuming a prominent role in globalization (Feenstra & Hanson, 1996). A failure to appreciate the implications of virtual manufacturers in international trade not only leads to a poor understanding of globalization’s dynamics but, equally significantly, fails to see the vitality of value-chain trade to the worldwide economy. Virtual firms, such as Apple and Nike, make up the largest group of GVCs. As a result, their goods are value-added in the global market, but international shipments lack the ability to transcend borders, like Nike sneakers produced in Vietnam and sold in that country, or they enter a country just once, like Chinese-made iPhone imports of the United States. Accordingly, treating GVCs’ trade narrowly as an intermediary market supporting two-way order transfers (World Bank, 2020) drastically underestimates its relevance in supporting trade, innovation, industrialization, and economic growth. As a result of global value chains, developing-country firms typically specialize in building tangible assets. However, MNCs in advanced economies continue to place an increasing emphasis on intangible assets. It was empirically demonstrated through the success of the iPhone (Xing, 2020) and the smile curve of communication technologies (Meng et al., 2020). The benefits of globalization for developed economies are less reliant on tangible assets and largely derived from intangible assets. Within the GVCs sector in OECD countries (Alsamawi et al., 2020), intangibles are estimated to generate 27 percent of revenue. Developed countries also hold the majority of patents and trademarks worldwide. As of 2013, the three largest patent offices in those regions granted 82.5% of their patents to the EU, Japan, and the US together. In the period 2010-2012, no low-income economies appeared in the top 20 by the OECD trademark intensity index (Durand & Milberg, 2018).

Failing to include transactions of intangibles with GVCs, it is hard to understand how much benefit advanced economies may derive from this exceptional globalization. The result is an imbalance in trade between developing and developed countries. Due to the transformation of the trade from the traditional exchange of ‘English cloth for French wine’ to ‘trade in services’, international trade have had to be re-examined. The value of intangible assets inherent to tangible products has to be considered when assessing trade performance in the age of GVCs. Such an understanding would offer policymakers a
comprehensive and detailed analysis of the contribution of MNCs to global trade. This would provide us with an efficient and precise way to compare the benefits of globalization for developed nations. It would also provide the information with the balance of trade between developing and developed countries. There is no doubt that multinational companies prefer assigning intellectual property rights to their foreign subsidiaries so that they can enjoy tax benefits and these subsidiaries typically report gains realized from intellectual property as income from foreign investments in their current accounts, not as exports (Jenniges et al., 2018). A disadvantage of such a form of IP would be that income from intangible assets cannot be measured in a country’s GDP (de Huan & Haynes, 2018).

2.0 Objectives

- To examine the importance of virtual manufacturers in international trade, which is driven by global value chains. In GVCs study, we focus on activities pertaining to fabricating and assembling tangible intermediate products.
- To understand the importance of intangibles and how multinational corporations and developed economies are thriving in the face of rapid globalization.
- To assess US-China trade relations on the basis of factor income from trade.
- To address the issue of the protection of intellectual property rights in global value chains and trade.

3.0 Review of Literature

Prior studies have focused on industrial processes - in particular, fragmentation of activities between sequential processes with an attendant proliferation of parts and material trade. The characteristics of GVCs do not just relate to production; for instance, value-added and job creation are less and less related to the production of manufactured goods in GVCs. A company’s brand, patents, and other intellectual property can be leveraged through value chains. Thitima (2007) outlined that a virtual production process is ultimately a characteristic that firms that market and design manufactured products possess. The production process is absent. Innovative nations that sell their IP services in exchange for manufacturing goods are integral to the GVCs of today.

Similarly, Bolatto et al. (2011) also demonstrated the need for greater protection for intellectual property rights and demonstrated the reluctance of most emerging countries to adopt a robust IPR policy. The paper examined how IPR protection, which is
dominated by multinational firms from developed countries, affects the status of an economy in global value chains by introducing it with a sequential production model. An analysis of multinational panel data collected from 2005 to 2015 for 55 countries is strongly supportive of this model and concluded that the increasing benefits of Intellectual Property Rights protection are unevenly distributed among developing and developed countries.

Kim (2012) analyzed the influence of technological development on economic growth and the utility models that underlie them. An analysis of a panel data-set of over 70 countries found that patent protection is an effective predictor of innovation, but not in developing countries. However, in developing countries, a weaker form of intellectual property rights-utility model helps innovation and growth by compensating for structural constraints. From the case study of Korean firms, it was discovered that tinkering innovations are important to firm productivity when firms are technically underperforming and that such tinkering innovations are also a building block for further innovation in the future. In countries where the ability to undertake innovative research is common, patents promote innovation and economic growth since firms tend to become heavily dependent on patents and less on utility models as their innovation capabilities rise.

According to Frankel (2014), the intellectual property encompasses a variety of legislation that addresses access to, and exploitation of, ideas, research, and inventions. Research, knowledge, and technology form a fundamental part of an innovation-based economy, in addition to having numerous cultural and social repercussions. A primary goal of intellectual property law and policy is to ensure that there are both mechanisms and motivations for developers and inventors to create these underlying blocks. The purpose of this paper is also to investigate the evolution of trade and investment deals from the perspective of intellectual property protection and the implications of that perspective for knowledge-based and innovation advancement.

Xiao et al. (2020) developed the notion of intangibles using a property-rights model. To support customizing input, firms transfer their expertise to their partners. However, to avoid intangible deterioration, manufacturers must preserve delivered intangibles, which depend on inputs’ knowledge intensity and the quality of institutions governing intellectual property rights in their countries. A decrease in the property right value of haphazardly chosen inputs over time and an increase in the overall knowledge volume of subsequent decisions occurs as an input’s information content increases over time, and poor forecasts continue when suppliers’ investments are insufficient.

Loukil (2020) also supports that the protection of Intellectual Property Rights is a significant driver of innovation and a high level of intellectual property rights is being

expected from all WTO member countries in conjunction with the Agreement on Trade-Related Aspects of Intellectual Property Rights. It is believed that IPRs have a beneficial influence on promoting innovation with elevated levels of economic development in emerging countries. The analysis outcomes indicate the possibility of the presence of nonlinear relationships based on economic development.

4.0 Research Gap

This paper introduces a unique concept, factor incomes derived from trade, to measure the importance of all multinational firms to international trade, which is not considered the same as exporting services. The paper analyzes bilateral trade statistics as a way to assess US-China trade relations. It provides, not only a solution to the double-counting of traditional trade statistics, but it extends the reach of the trade from tangible to intangible. The actual economic reality behind Apple’s profits from China is a far cry from its accounting fable. IP services are provided to umbrella organizations, and added value is added regionally and exported, and from an accounting standpoint, the contribution isn’t recorded earlier.

5.0 Need of the Study

Exporting services derived from intangible assets through global value chains offers great potential. A large segment of firms proactively engaged in this business is virtual manufacturers. Since GVCs are generally considered to be a component of exports, multinational corporations’ local sales through their subsidiaries are usually classified as non-GVC activities, resulting in an important absence of activity. Multinational corporations support their partners by leveraging their Intellectual Property assets such as their brand, patents, and intangible know-how. These valuable services are usually not reflected in trade data. In other words, the data are often showing foreign firms producing assembled products in China and selling some of them overseas. Based on an accurate assessment of IP assets, this trade is a type of trade in the Global Value Chain.

6.0 Research Methodology

To understand the importance of IP in the era of global value chains, the current paper utilizes secondary sources such as recent articles, and research papers of prominent
scholars, as well as Form-10K information from Apple for the time period 2015 to 2018. The paper deals with the paradox that China is the world’s largest market for US’s leading manufacturer, Apple, yet none of its products are listed in US trade statistics; specifically, neither its finished products nor its components. Using Apple as a case study, we will explore the concept of a virtual manufacturer. GVCs are formed with the help of Intellectual Property, such as patents, trademarks, copyrights, brand names, product designs, software, databases, and company structures. An international index is used to demonstrate that IP rights are generally very good in advanced economies and fairly good in most developing countries.

7.0 Analysis

MNCs use intangible assets as part of their GVCs to influence the operations they pursue and the profits they accrue. For advanced economies, intangible assets now account for a significant portion of their GDP, while their capacity to produce tangible goods is gradually declining. It is perhaps most imperative for countries to secure new streams of revenue by protecting intellectual property. GVCs, leading companies, must engage others participating in their value chains in intense collaboration and communication in order to synchronize disparate manufacturing activities. This is in order to ensure the efficient operation of value chains. For them to accomplish the project, they may have to discuss technical specifications, quality standards, designs, and other details with suppliers and contractors. A high probability exists that prospective competitors will seize knowledge transfers. Since reversible fabrication is required for imitation products (Durand & Milberg, 2018), IP protection becomes more relevant to value-chain trade than traditional finished goods. The advent of technology, including 3D printers, has made mass-produced complex technological products more feasible and more accessible than ever. In order to ascertain whether the economy should align with GVCs, it is imperative to know how well equipped a country’s institutions are for protecting intellectual property.

7.1 Does Apple export its products to overseas markets- A case study in the trade of intangibles

Apple has been the world’s largest provider of telecommunication services for many years. Electronic devices like the iPhone, iPad, and iMac are widely available and popular. Apple achieved one of the top foreign sales figures among US companies in 2018 with $365.8 billion (Apple 2018). However, despite Apple’s size as an exporter, export statistics give a misleading impression of its participation in US exports. Apple is

not considered a major exporter of goods and services by conventional trade statistics. In 2018, Boeing generated $71.0 billion in foreign sales, roughly half of Apple’s foreign sales. The company has long been the largest exporter from the United States (World Bank, 2020). Despite such, Apple doesn’t even appear on the Journal of Commerce’s list of the country’s top 100 exporters.

Chinese consumers fervor for Apple products drove China to become Apple’s top overseas market, generating $51.9 billion in revenue (Apple, 2018). As a result, taken as an indication from official data on Chinese exports and imports, Apple did not export a single dollar to China. China received $2.6 million in laptops, tablets, and portable data processing devices from the US and imported $1.5 million in smart phones from the US on the basis of United Nations ComTrade Database, 2018).

Analyzing Apple’s performance in China in light of the available trade statistics poses a question: Is Apple exporting to China? China’s total imports of mobile phones and laptops from the US in 2018 were more than 12,000 times greater than Apple’s $51.9 billion in sales to China in 2018 (Apple, 2018). Apple’s intangible assets and services contribute to the company’s revenue, which could be contributing to the disparity. Even adjusting for the costs associated with Apple products, the gap remains enormous. The production cost of Apple goods consumed in China in 2018 was placed at $32.1 billion. In that year, China imported 8,000 times as many laptops and mobile phones from the US as it did from other countries (Apple, 2018).

Table 1: Export of Apple Product in China and Japan

<table>
<thead>
<tr>
<th>Year</th>
<th>(1) US Export of Laptop and Mobile Phones ($ million)</th>
<th>(2) Apple’s Earnings ($ billion)</th>
<th>(3) Production Cost of Apple ($ billion)</th>
<th>(2)/(1) (’000)</th>
<th>(3)/(1) (’000)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>China</td>
<td>Japan</td>
<td>China</td>
<td>Japan</td>
<td>China</td>
</tr>
<tr>
<td>2015</td>
<td>1.67</td>
<td>7.30</td>
<td>58.72</td>
<td>15.71</td>
<td>35.17</td>
</tr>
<tr>
<td>2016</td>
<td>3.60</td>
<td>8.61</td>
<td>48.49</td>
<td>16.93</td>
<td>29.53</td>
</tr>
<tr>
<td>2017</td>
<td>2.98</td>
<td>8.24</td>
<td>44.76</td>
<td>17.73</td>
<td>27.53</td>
</tr>
<tr>
<td>2018</td>
<td>4.05</td>
<td>8.69</td>
<td>51.94</td>
<td>21.73</td>
<td>32.05</td>
</tr>
</tbody>
</table>

Source: Estimation based on the data of UNCOMTRADE

Table 1 shows imports of China and Japan from the US of laptop computers and mobile phones from 2015 to 2018. It compares them with Apple’s earnings and their manufacturing costs in both countries. The disparities are significant and persist across all years. The only anomaly here is that the data does not include even a dollar of Apple sales in China as a US export. A disproportionate amount of exports by the US’s virtual
manufacturers is left out of the statistics because recent trade statistics are not reliable in capturing the magnitude of value-chain trade.

Similarly, Apple’s sales in bilateral ties between Japan and the US follow a similar pattern. Laptop computers and mobile phones were imported by Japan worth $8.7 million according to the UN Comtrade Database, 2018- A repository of official data for global trade for UN members. In Japan, Apple made $21.7 billion in sales, which is 2,500 times more than what it imported (Apple, 2018). Compared to Japanese imports, Apple products have a production cost of $13.4 billion, nearly 1,500 times higher. These exports are compared with Apple’s sales in the country, including manufacturing costs. The difference between Apple sales, official Japanese imports, and the manufacturing costs of Apple products is immediately apparent. This study provides credence to the notion that conventional measures of trade are unable to assess trading intangibles on the basis of GVCs. Clothing and footwear also represent untapped export markets.

7.2 Intellectual protecting rights in the era of global value chain

Intangible assets play a significant role in GVCs and are the only source of income for the virtual producers for Apple. Intangible assets are exchanged for fabrication services in trade-in agreements with developing and industrialized countries. IP traders are expected to benefit from the services offered by GVCs related to IP trading. At present, multinational corporations from developed countries derive a significant portion of their capital from intangible assets brands, trademarks, patents & knowledge. MNC value added to GVCs is derived from these intangible assets. Because the importance of intellectual property in GVCs is substantial and escalating, a comprehensive analysis of GVCs is not feasible without examining IP and its implications. As a group of companies do most of their business in GVCs, with patents, brands, and intangible assets accounting for nearly 90% of their market value (Ocean, 2020). In other words, large corporations do not have much capital stock, so they rely heavily on intangible assets to generate value. A significant portion of their inventory is IP, so 90% of their gains are from IP investments. In the United States, multinational corporations earn $500 billion in international earnings each year, or $450 billion if royalties are subtracted. Consequently, international royalties plus foreign patent revenues total about $580 billion annually for US companies, which amounts to 25% of their total revenues. Intellectual Property inclusion in GVCs bolsters MNCs’ ability to do innovative research and to create new technologies by providing a significant revenue stream. The benefits of innovative products would be significantly less for multinational corporations without GVCs.
Global value chains are progressively incorporating knowledge. Increasingly knowledge-intensive global value chains are a counter-reaction to the disappearance of wage negotiations. Increasingly, the creation of value is shifting from lower-level operations to higher-level endeavors such as Research & Development, design, and distribution. A decreasing proportion of value is generated by the actual fabrication of a product. This has led to the emergence of virtual manufacturers such as Apple, which use third-party manufacturers to build their products, but manage the outsourcing and logistics operations themselves. Research & development, software, design, and other intangibles contribute significantly more to profits than tangible goods. Overall, spending on intangible assets far surpasses spending on physical assets. Across all value chains, capital spending on R&D and intangible assets such as brands, software, and IP is growing as a share of revenue, rising from 5.4 percent of revenue in 2000 to 13.1% in 2016\(^1\). Value was the most significant contributor. Chains producing global innovations. Companies in the machinery and equipment value chain, for example, spend 36 percent of revenues on R&D and intangibles, while those in Pharmaceuticals and medical devices average 80 percent. As product development processes include more complex and proprietary components, the knowledge-intensiveness of value chains is increasing.

In autos, software contributes for 10 percent of a car’s value, with a projected 30 percent share by 2030 (McKinsey, 2019). On a global scale, natural and polyester fibers trail behind the most popular apparel fabrics, whereas synthetic fibers are gaining popularity. Traditional cotton shorts and t-shirts are being replaced with microfibers that absorb sweat and dry instantly. Technological advancements are improving the durability of synthetic textiles and textile leather. The addition of handcrafted items drives up the value of such items. Items such as jeans can cost over $200. Additionally, they also need an increasing proportion of skilled workers as they become more knowledge based. Thus, skilled workers’ share of income has risen across virtually every value chain. In the US, manufacturers offered 5.5 percentage points more in compensation to highly skilled workers from 1995 to 2009, whereas semi-skilled workers lost 6.1 percentage points and lower skilled workers lost 2.5 percentage points (Koopman et al., 2014). It is not just a US problem; Chinese manufacturers employ similar processes.

It is primarily in these sectors that intellectual property protection is crucial. Pharma, machinery, and electronics are examples of industries where GVCs are knowledge-intensive as shown in Table 2. Although automobiles and textiles are not as knowledge-intensive as they used to be, they are becoming progressively more so. Across all sectors, the proportion of revenue earned from the creation of exclusive...
innovations resulting from new product development and buy-outs grew from 2000 to 2016. Overall, that share rose from 5.4% of revenue in 2000 to 13.1% in 2016. Specific sectors are particularly impacted. Companies in the pharmaceutical and medical device industries spend 80% of their sales on Research and Development and intangibles, while companies in the machinery and equipment industry spend 36%. Countries with a strong workforce, strong technological and advanced research potential, and adequate intellectual property protection will benefit from an increased focus on knowledge and intangibles.

Table 2: Capitalized Spending on Intangibles as Percentage of Revenue, 2016

<table>
<thead>
<tr>
<th>Global Innovation</th>
<th>Labour Intensive Goods</th>
<th>Regional Processing</th>
<th>Resource Intensive</th>
<th>Labour Intensive Services</th>
<th>Knowledge Intensive Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharma &amp; Medical</td>
<td>Auto</td>
<td>Textiles &amp; Apparels</td>
<td>Paper &amp; Printing</td>
<td>Rubber &amp; Plastic</td>
<td>Food &amp; beverages</td>
</tr>
<tr>
<td>Machinery &amp; Equipment</td>
<td>Electrical</td>
<td>Chemicals</td>
<td>Auto</td>
<td>Textiles &amp; Apparels</td>
<td>Paper &amp; Printing</td>
</tr>
<tr>
<td>Computers &amp; electronics</td>
<td>Electrical</td>
<td>Chemicals</td>
<td>Auto</td>
<td>Textiles &amp; Apparels</td>
<td>Paper &amp; Printing</td>
</tr>
<tr>
<td>Electrical</td>
<td>Chemicals</td>
<td>Paper &amp; Printing</td>
<td>Rubber &amp; Plastic</td>
<td>Food &amp; beverages</td>
<td></td>
</tr>
<tr>
<td>Machinery &amp; Equipment</td>
<td>Electrical</td>
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</tr>
</tbody>
</table>

Source: Mckinsey Global Institute, 2019

Through direct and indirect channels, knowledge-intensive economic activity and trade have been accompanied by an upswing in services trade. Trade in services reached $5.1 trillion in 2017, overshadowed by world trade in goods of $17.3 trillion. Although this has occurred, services have grown by over 60% in the last decade (McKinsey, 2019). Various industries are progressively increasing their Internet-related expenditures, such as communication services, information technology, and professional services. Due to multinational corporations’ extensive use of intellectual property in emerging markets, they must be cautious about the infringement of intellectual property rights. The rights to intellectual property are typically excellent in industrialized countries and adequate in the majority of developing countries (The International Property Rights Index, 2020). The Chinese economy is somewhat more prosperous than many other burgeoning economies, particularly Brazil, India, Indonesia, Mexico, Thailand, and Vietnam. IP rights protection, infrastructure quality, institutional quality, and logistical infrastructure were all rated as the most important determinants for determining participation in GVCs in both developed and developing nations (Kowalski et al., 2015). For international investors to perform optimally, they require appropriate

infrastructure, an adequate transportation system, and safeguarding their most valuable, intangible assets.

8.0 Conclusion

Besides being derived from the production process, value added is derived from a variety of other sources. In a Global Value Chain based on innovation and intellectual property, advanced nations produce considerable economic output and employment. As a result, service-driven growth enables innovative approaches to development, which can boost the economic growth and development of developing countries. Intellectual Property is in the hands of multinational companies, whose investors tend to be among the top tenth of society, and highly skilled scribes who are involved with developing IP who benefit from the worldwide promotion of IP. In developing countries, there is an abundance of equally skilled labor along with low-skilled workers who are at a disadvantage.

Participants can fully comprehend these phenomena through the currently available studies and develop strategies for a more favorable economic climate. Global Value Chains are being developed due to the pursuit of profit through higher efficiency. Nevertheless, recent events such as the U.S.-China trade war, catastrophic global warming, and Pandemic suggest how protectionist rhetoric and geopolitical conflicts, as well as climate change, can threaten the viability of GVCs and demand that they realign globally. In light of these issues, GVC’s assessments extend beyond production processes. Legislators and policymakers will need to remove the barriers that prevent educational opportunities from becoming part of services GVCs, since services GVCs are largely human capital driven. This paper examines who benefits from and who loses from globalization in advanced economies.

Endnotes

1. Dividing the OECD TiVA country sample into high income and developing countries according to year-specific percentiles of GDP per-capita shows that there is very little consistency between the results and further highlights the importance of seeking to incorporate other countries into the analysis.

2. In order to facilitate comparisons of coefficients across income groups the standardization of variables is performed over the entire sample calculated using TiVA and the WIOD (World Input-Output Database).
References


