



**Asia-Pacific
Economic Cooperation**

**Study on Enhancement of
Integration of Regional Value
Chains in Asia and Latin America
and the Caribbean**

Committee on Trade and Investment

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Contents

1. Executive Summary	5
2. Theoretical Overview of GVCs	7
2.1 Company Competitiveness	10
2.2 Domestic Competitiveness	12
2.3 Factors Impacting GVC Connectivity	14
2.3.1 Infrastructure and Logistics	15
2.3.2 Institutions	16
2.3.3 Trade Policy, Free Trade Agreements and Trade Promotion	17
2.3.4 Openness to Investment and Investment Attraction	18
2.3.5 Human Capital	19
2.3.6 Research & Development and Technology	20
2.3.7 Services	20
2.3.8 Value Added, Specialization and Upgrading	21
2.4 Concluding Remarks to Introduction	24
3. Asia	26
3.1 Introduction	26
3.2 Asia and RVCs	28
3.2.1 Characterization of Asia Region	29
3.3 Status Quo of Asia RVCs	32
3.4 Geographic Location	33
3.5 Natural Resource Endowments	33
3.6 Population and Human Resources Development	35
3.7 Level of Development	37
3.7.1 Economy	37
3.8 Infrastructure	40
3.9 Institutions and Policies	42
3.9.1 Openness to Trade and Investment	44
3.9.2 Free Trade Agreements	49
3.9.3 Property Rights	50
3.9.4 Enforcing Contracts	52
3.10 Industry	53
3.11 Trade and Foreign Direct Investment	56
3.11.1 Trade	56
3.11.2 FDI	60

3.12 Challenges and Opportunities for Asian Enhancement of GVCs.....	63
4. Latin America	65
4.1 Introduction.....	65
4.1.1 Regional factors	66
4.2 Latin America and RVCs	68
4.3 Geographic Location	69
4.4 Natural Resource Endowment	70
4.5 Population and Human Resources Development.....	71
4.6 Economy	73
4.7 Infrastructure	75
4.8 Institutions and Policies	77
4.8.1 Openness to Trade and Investment	78
4.8.2 Free Trade Agreements	82
4.8.3 Property Rights	83
4.8.4 Enforcing Contracts.....	83
4.9 Industry	84
4.10 Trade and Foreign Direct Investment.....	86
4.10.1 Trade	86
4.10.2 Foreign Direct Investment	89
4.11 Challenges and Opportunities for Enhancement of GVCs	92
5. Case Studies.....	94
5.1 Chilean Salmon in the GVC.....	94
5.1.1 Introduction	94
5.1.2 Production and Trade Value.....	94
5.1.3 Markets	95
5.1.4 Value chain in Salmon Industry	96
5.1.5 Chilean Salmon Industry	97
5.1.6 Chilean Salmon Value Chain in Asia.....	99
5.1.7 Factors Affecting the Salmon Value Chain	102
5.1.8 Conclusions and Recommendations	105
5.2 Soybeans in the GVC	108
5.2.1 Introduction	108
5.2.2 Market.....	109
5.2.3 Value chain in the soybean industry	111
5.2.4 Linkage between Latin America and Asia.....	113

5.2.5 Brazilian soybean industry	114
5.2.6 Brazilian soybean integration into GVC	116
5.2.7 Conclusion	118
5.3 Automotive Value Chains	119
5.3.1 Introduction	119
5.3.2 Automotive Sales and Production across the Globe	120
5.3.2 Automotive Value Chain	121
5.3.3 Investment and Trade Flows	123
5.3.4 Conclusions and Recommendations	126
6. Asia and Latin America Connectivity	129
6.1 Introduction	129
6.2 Backwards and forwards linkages	131
6.3 Trade	133
6.4 Foreign Direct Investment	137
6.5 Connecting Asia to Latin America	140
7. Outcomes of APEC Public Private Dialogue on Enhancement of Integration of RVCs in Asia and Latin America	142
8. Recommendations	144
8.1 High level recommendations to facilitate GVC connectivity	144
8.2 Specific recommendations to facilitate GVC connectivity	146
9. Bibliography and Reference Literature	149
10. Research Interviews	159
10.1 Indonesia	159
10.2 Japan	160
10.3 Thailand	161
10.4 Latin America (Chile; Mexico; Peru)	162

1. Executive Summary

Globalization has accelerated international trade and investment flows, increased global competitiveness and facilitated industrialization of many economies. Although globalization has lifted many out of poverty through a concentration on competitive advantages and trade and investment liberalizations, numerous economies still face challenges excelling in an increasingly competitive market place. Low productivity levels, dearth in infrastructure, restrictive trade and investment regimes, poor institutional development, and numerous other factors impact economies' and companies' ability to effectively participate in the international market place.

Global value chains (GVCs), which interlink economies and businesses across the World, now govern economic trade and investment flows and present opportunities to integrate into an increasingly connected marketplace. GVC theory purports that economies can open their markets to international players, linking domestic businesses into the global markets. Over time, companies capable of engaging GVCs will improve production and provision of services to maintain competitiveness while also developing opportunities for improved cooperation with small and medium sized enterprises, local service providers, and the wider international business community.

The tenants and practices espoused by GVCs have had a profound impact on Asian economies over the past few decades. Asia has been driving global economic growth while the region continues to incorporate an increasing number of developing economies while emerging economies work to improve overall competitiveness. It is now clear that cooperation between the public sector, domestic firms, international investors and multinational companies can accelerate economic growth and create a means to evolve domestic, regional and global industry. As such, most Asian economies look to GVC theory, which supports the upgradation of most economic factors, to develop road maps for future growth. By incrementally making improvements domestically and actively looking to engage the global community, Asian economies and companies are both attracting investments and looking for opportunities abroad. Now the region as a whole is incredibly competitive in a number of products and services and expanding to more distant territories.

Latin America, on the other hand, has not incorporated into GVCs in a similar fashion to Asia. A heavy focus on commodity extraction and a lack of downstream investments has left the region wanting for economic diversity and complexity. Many Latin economies produce relatively similar goods and services where there has been a lack of specialization to substantially trade intra-regionally and further abroad outside of natural resource industries. Some Latin economies such as Chile and Mexico are becoming increasingly integrated into RVCs and GVCs, but the lack of a true driving force for regional connectivity constrains greater value chain integration. That being said, numerous Latin public sector entities are becoming increasingly open to trade and investment while initiatives such as Pacific Alliance can open opportunities while linking the region to Asian growth.

Although Asia and Latin America are far in distance, there is substantial opportunity for respective regions' companies to grow across the Pacific. Latin America, with its abundance of natural resources and dearth in downstream investment offers great potential for Asian companies that

have excelled and evolved in a variety of industries. Asian growth markets, on the other hand, could be attractive to Latin companies looking to expand their market reach, learn new market practices, cooperate with emerging business leaders, and access new technologies. Moreover, entering into Asian markets will push Latin companies to upgrade and evolve in order to compete and provide diversified products to Asians.

Opportunities between Asia and Latin America certainly exist, but bridging the distance can be challenging. Aside for the expanse and expense of shipping products across the Pacific, differences in languages, cultures, time zones, and business practices often complicates sustainable connectivity. Thus, companies and economies must be proactive to not only improve their own domestic economies, but also their overall attractiveness to the international business community. Domestically, economies should consistently look to improve human capital and infrastructure, become increasingly open to trade and investment flows, maintain strong intellectual property rights, assure equitable contract enforcement, support research and development to competitive industries, and govern transparently. Moreover, trade promotion and investment attraction initiatives, engaging international forums such as APEC, creating online databases to promote products abroad and provide the necessary information on how to do business domestically can improve connectivity.

Global economic volatility and changes in political directives will always complicate international affairs and the efficiency of doing business across borders. Although macro level issues may complicate trade and investment flows, there is indeed incredible potential to better link Asia and Latin America based on respective region's competitive advantages and company expertise. Each economy must take stock of what it does best and what is demanded by global business partners. By looking to upgrade in the areas impacting GVC connectivity, Asia and Latin America can grow together commercially through trade and investment even though the distance is great.

The research for this report encompasses a broad and substantial literature review, interviews with over 100 stakeholders from six Asian and Latin APEC economies, and data analysis from global indices, economic databases, and trade and investment flows. While GVC theory is broad and encompasses most aspects of economic development, the report below looks to provide a general understanding of the tenants of GVCs, how Asia and Latin America have integrated into GVCs over the past couple decades, the level of connectivity between the two regions already, and what can be done to improve their linkages. Furthermore, we use three case studies from the salmon, soybean and automotive industries to highlight GVCs in action and characterize the connectivity between the two regions.

Although not specific to any particular economy or industry, the report provides a baseline understanding of regional progress and hindrances to GVC development and recommendations on what could be done to improve. Recommendations include high level improvements to human capital, infrastructure, and institutional development while more specific recommendations delve into trade connectivity and promotion. Overall, an integrated and coordinated approach between domestic public and private sector agencies together with international counterparts is necessary to effectively engage GVCs. The more cooperation and engagement, the better the probability to enhance GVC integration.

2. Theoretical Overview of GVCs

Value chains consist a range of tangible value-adding activities to bring goods or services from its origin, through different production phases, and final delivery to customers. While industry, traders, wholesalers, retailers or other parties comprise the components of value chains, individual stakeholders provide instruction to what is to be produced, by whom, when, for what purpose, for what price and level of quality. Participants along the value chain each take a level of control and service provision over the chain, even though it may not possess ownership over the good. With the overall goal of producing and providing products while minimizing costs, stakeholders manage respective pieces of the value chain to fuel business.

Value chains refer to how companies operate to create value and competitive advantage in their specific line of business while supply chains comprise the flow of information, materials, funds, and products through the stages of producing and supplying a product. While seemingly similar, it is important to make a distinction between the two terms. Focusing on improving value chains can enhance a company or industry's overall competitiveness while advances along a supply chain supports efficiency, typically at the firm level. Supply chains play a significant role in adding value along the overarching value chain. Although firms are the basic unit of the overall value chain, economies and the public sector have a substantial impact on industrial development and overall competitiveness through industrial and trade policy as well as the provision of infrastructure, educational institutions, diplomatic ties, and various other facilities.

GVCs are not a new concept as international trade and specialization has fueled companies and economies for hundreds of years. David Ricardo initially laid out the economic theory of Comparative Advantage in 1817 where he describes how firms or individuals produce goods and/or services at a lower opportunity cost than other firms or individuals and will then trade based on this comparative advantage. This is the foundational theory of GVCs where economies and companies can compete by utilizing respective factor endowments, even if they are less efficient than some economies, if they can produce at a *comparatively* lower cost or of an improved quality.

Value chains typically initiate at "headquarter" economies whose production processes initially contain relatively few imported intermediate goods. Companies in these headquarter economies will then seek to gain cost advantages or enter new markets by setting up operations or outsourcing/utilizing contract labor in "factory" economies. These factory economies will often import on behalf of the company from the headquarter economy (Baldwin 2012). While the headquarter economy may be the one innovating and developing the initial product, the factory economies can use their comparative advantage in labor, access to raw materials, or other comparative advantages to conduct their business activities at a lower cost or more efficiently. While the headquarter – factory economy relationship has been the common trend for export led growth for a number of decades, today, there are many firms from "factory" economies that are innovating and adding value independently from the headquarter and expanding on their own. Through initial integration into GVCs, companies within factory economies have developed where many companies now compete on a global basis. As such, economies looking to enhance industrial activities can look for ways to integrate into GVCs to support economic growth and job creation.

While there are links of relationships along a value chain, they are dynamic where companies may rest at varying levels of any value chain. Entrepreneurs and companies taking on a new business strategy may be emerging while others may be faltering towards the tail end of their competitive run. Some businesses may be stagnant, holding onto what they do well and continue to do so with little growth while other established businesses may innovate or upgrade, taking a dynamic approach to enhance competitiveness. What is clear now is that firms are becoming increasingly specialized to compete globally and etch out their niche in GVCs. Without specialization and a commitment to improvement, it is unlikely than a company could compete on a global scale.

Publicly available information and data on GVCs are often incomplete and cannot fully characterize the systems businesses use to improve competitiveness. Economy's, industrial and firm-level research and analysis is necessary to develop an understanding of the interrelations companies utilize to add value and supply products along the chain. While analyzing value chains can be challenging, statistical and literary data often lacks clarity on how, where and what purpose trade transactions are utilized within a value chain. With the evolution of international trade in a globalized world, many companies add value to products through intermediate goods or services. For example, the automobile supply chain is quite dynamic where a number of designers, engineers, producers of various products, assemblers, marketers, and sales agencies all cooperate, often in different localities, to supply vehicles to end users. Tracking this flow of parts and services from a diversity of economies and companies complicates accurate analysis of dynamic value chains.

For these reasons, economists use a wide array of terms to measure the participation of economies in international value chains. While no single measure comprehensively addresses the scale or rate of an economy's participation in regional and GVCs, each has its own benefit in understanding the structure and dynamics of the entire value chain. Moreover, reliable base level data itself is often challenging to obtain, especially in emerging regions such as East and Southeast Asia and Latin America.

Value chains are critically important to regional, domestic, and sectoral-level development. In the modern globalized world, economies and companies compete and cooperate against and with each other to grow and provide livelihoods for society. Economies can either utilize globalization and value chains to enhance the rate and level of economic development or ignore current economic trends demanding productivity, efficiency, and ingenuity. Each economy possesses its own combination of factor conditions including natural resources, human and financial capital and other capacities. By specializing and utilizing its specific comparative advantages, each economy can develop its economic capacity. Although competitive advantage has shaped regions' and individual economies over time, the importance of and rate of change in value chains is accelerating. This in turn encourages fragmentation along with vertical and horizontal specialization, enabling economies to participate in global markets without having to master all segments involved in producing a final good. This path to industrialization has been employed by some Asian and Latin American economies in recent years. Most economies have specialized in and engaged GVCs to some level, some better than others. As no economy is truly self-sufficient, economies must look inward at what they currently do best, strategically consider how they can evolve to standout, and which international partners can cooperate for growth.

GVCs hold great promise for developing economies, especially those in Asia and Latin America. Korea is an excellent example of an economy that focused on a number of policy initiatives to engage GVCs in Asia, where the economy vastly improved its knowledge sectors resulting in Korea going from a developing, agriculturally-focused economy to a wealthy industrialized economy. While it is difficult to emulate the Korean model, other developing economies can seek niche industries/specialties within international value chains to build opportunity. Economies with vast natural resource endowments can utilize their wealth to develop downstream industries and provide strong social systems and improve the business regulatory regime to diversify into other value added industries. Even small island economies, whose economies historically consisted of agriculture, fisheries and tourism, developed their finance industry to engage the global economy. Strong agricultural economies, such as Chile, can utilize their fertile land and diverse climates to ensure an ample supply of food while developing high quality goods such as wine for export. These cases highlight that finding a place in the GVC develops industry and wealth creation. Moreover, each economy's MSMEs create linkages within the domestic market to compete with their peers, where local champions may one day engage the global marketplace.

The expansion of GVCs is also associated with a number of other benefits stemming from enhanced global cooperation and competition. Technology transfers, knowledge spillovers, technical capacity, a broader way of thinking about potential markets and customers, along with improved creativity to adequately compete are just some of the benefits both companies and economies actively engage within GVCs. Whether GVC integration expands through multinational companies (MNC) implementing foreign direct investment (FDI) strategies in less costly economies or public sector agencies leading the way domestically to utilize factor endowments, specialization can improve comparative advantage and spark local industrial growth for larger and small and medium sized enterprises (SMEs).

While GVCs present opportunities for industrial development, they can prove challenging to create and are fiercely competitive where consistent improvements are necessary to maintain relevancy in global markets. Evidence from past studies suggests that benefits from GVCs may only emerge under a conducive business environment to support inter-firm connectivity, the rate at which companies can adjust to new suppliers, and that rate which technologies can be applied, along with a number of other indicators (Gereffi , Humphrey, & Sturgeon, 2005). Moreover, pressure from global buyers as well as the increasing rate of technological development can shorten gains from specialization. Small producers in developing economies that only implement the orders of a specific buyer and does not improve endogenously, can fail if the buyer finds another supplier or regulations augment comparative advantage (Humphrey, 2004). Implementing GVC strategies are most effective where competitive firms both cooperate and compete, improving innovations and efficiencies overtime.

The international marketplace with its abundance of products and diversity of consumers demand an ever changing flow of goods at varying price points. While some may seek out the lowest cost option of marginal quality, others may seek the highest quality or most unique product even at incredible prices. With a global population over 7.4 billion consisting of thousands of languages and cultures, respective preferences and needs open opportunities to those companies that position themselves to excel in specific markets. As such, both industry and the public sector need to consider their present comparative advantages and work in tandem to ensure a conducive

business environment to compete domestically and internationally in the present and into the future.

Greater Asia has developed substantial RVCs with significant linkages to Europe and North America over the past few decades. Latin America, on the other hand, has not kept pace with its Asian counterparts where Central and South America still lack the connectivity and robust trade linkages to substantially engage GVCs. Although Asian and Latin American connectivity is thin, this presents an opportunity, both for Asian FDI companies and Latin American economies looking to grow. With a strong commodity base and diverse products, Latin America can attract investment in downstream industry as well as services from Asian counterparts who have developed significant capacities and are looking to expand in new markets. While the regions are incredibly different, many Asian companies have excelled at better utilizing natural resources and developing manufacturing industries, where there are indeed opportunities for mutually beneficial cooperation.

The content of this report below covers a wide range of information regarding GVCs and how economies and companies can better incorporate into them. The study goes over the overarching GVC theory to provide context in the Asian, Latin America, and regional connectivity sections. In the respective regional sections, we delve into how Asian and Latin American value chains have developed over the years and what representative APEC economies can do to better engage GVCs. Next, we look at the current connectivity between Asia and Latin America, analyzing what Asian and Latin companies are doing in each other's regions now and what capacities could be more heavily exploited to improve commercial activities. To bring this very broad research study in perspective, we present three case studies on the automotive, salmon and tuna, and soybeans industries to characterize GVCs in action. Finally, we conclude the report with a summary and recommendations on what economies in each region can do to bridge the distance from Asia and Latin America.

This research study is more of a qualitative study rather than quantitative. There are numerous other GVC studies and initiatives that focus on the data and data analysis of GVCs in action. This is not the purpose of this study. Rather, the research team conducted a broad literature review and interviewed over 100 GVC stakeholders from academia, business and public sector representatives to characterize the status quo of Asian and Latin American GVCs, the challenges economies and companies face in turbulent economic times, and what can be done to increase commercial opportunities across the Pacific Ocean. While we present various data, it is meant to highlight trends in modern GVCs, identify areas of interest, and support the concluding recommendations.

2.1 Company Competitiveness

Companies are the foundational unit of a value chain where it is firms, not economies that produce products and compete for customers. While economies and respective business governance certainly impacts a company's ability to operate, the economy itself is not the focus stakeholder within a value chain. Companies may come from one economy or another, growing out of the economy's holdings of factor endowments, but it is the entrepreneurs and the firms themselves that actively engage value chains. As such, a company may initiate a profitable business which then sparks competitor or supplier growth which eventually turns into an industry. If industries

continue to grow and domestic companies are competing with each other and pushing new innovations, industrial clusters may form. Industrial clustering is viewed by many academics, including the Godfather of value chains, Michael Porter, as critically important for competitiveness and innovation. Prominent examples include the United States' Silicon Valley for the IT industry, Yokohama in Japan for the automotive industry, or Central Java in Indonesia for furniture. These industries and clusters are often what determine an economy's overall competitiveness and rate of development.

Firm level competitiveness is a company's ability to produce products and/or services superior to those offered by competitors, considering the price and quality (D'Cruz, 1992). While price and quality are the basic factors of product/service competitiveness, uniqueness, customer service, marketing, delivery times, access to markets, public sector regulations, and a number of other factors can determine a firm's level of competitiveness. Although these factors impact overall competitiveness, there will always be threats which fall under five broad categories: 1) threat of new entrants; 2) threat of substitute products; 3) the bargaining power of suppliers; 4) the bargaining power of buyers; and 5) the rivalry of competition. As such, firms must differentiate themselves amongst the competition and be flexible enough to shift their strategy when threats impede business operations. These basic economic tenants are magnified in the globalized world where competition and threats come from all directions.

It is very difficult for any new firm to immediately engage in GVCs. Typically, companies need to become domestic champions or supply a unique product or service, selling to a significant portion of the local market and standing out amongst domestic competitors before being able to expand abroad. At the initial stages of international expansion, companies will often look to near markets where common languages, cultures, shared history, and compatibility of products encourage connectivity. This is evident in the ASEAN region, although the cultures and economies of Southeast Asia are different, regional trade and connectivity is increasing, where most economies are focused on improving ASEAN trade first, and then considering more distant markets. With a strong regional presence, companies accumulate the capital, networks and expertise to expand further abroad and may eventually become leaders in GVCs.

GVCs are primarily driven by large multinational companies (MNCs) that have developed product lines and business processes to expand internationally while also finding opportunities to reduce costs, innovate, reach new markets, and diversify production bases. These MNCs have the capital and capacities to invest in new economies and develop market entry strategies in new geographies. This process includes cooperation with a diversity of local and international stakeholders. First, a company must work through local market legal procedures to establish a company or trade relationship. Next, they need to find local partners, employees, and sources for production inputs. Moreover, a sales and distribution strategy must be developed to reach end users where it is often necessary to conform, to some level, to local market preferences. Finally, tax and other administration procedures must be utilized to maintain the additional business unit. MNCs are often capable of doing this because they have the network of domestic, regional, or global service providers that efficiently tackle respective business processes. By working with other professional companies, MNCs are better capable of expanding the web of GVC connectivity.

Through the process described above, the MNC engages local firms, connecting them to GVCs. While this engagement certainly generates employment opportunities and brings in capital, GVC theory states that as MNCs utilize domestic companies, they will also enhance their capacities and be able to produce their own products and services to operate both with the large company and independently with their own product lines. While this phenomenon does indeed happen, with many Asian and Latin American companies evolving out of MNC cooperation, it is often more difficult to emerge as a competitive global company than GVC theory states. Often is the case that local companies working with GVCs become dependent on their primary MNC customers and do not/cannot evolve to operate independently. Moreover, as top brands invest into new markets, they may bring their own economy's suppliers with them. As the original component suppliers come into the new markets, they may overtake local firms as they have a more established relationship with the MNC and/or better capacity.

It is incumbent on every firm to maintain and enhance competitiveness to evolve with market conditions. As such, companies must look at their respective capacities and competitiveness and build a growth strategy based on what and where they are strong. Although it can be challenging for local firms to grow independently of the MNC client, they can look to localize respective business away from their primary MNC client or develop derivative product lines based off their enhanced capacity generated through GVC participation.

2.2 Domestic Competitiveness

Although the firm is the basic unit of a value chain, economies play a significant role in promoting or demoting industrial or firm level competitiveness. Business regulatory processes, natural resource management, openness to trade and investment, abundance of human capital, level of infrastructure development, etc. all play a significant role in an economy's competitiveness and ability of firms to succeed on a global scale. Today, economies must support a conducive domestic business operational environment to ensure local companies ability to flourish and not shift operations to foreign economies while also ensuring the local populace has reasonable access to employment and advancement. At the same time, many economies are actively promoting themselves to attract foreign direct investment (FDI) and engaging in facilities such as trade pacts, investment incentives, improved infrastructure, subsidies, etc. to stand out amongst other economies to fuel growth.

Kowalski (2015) highlights that macro factors such as geographic location, market size, level of development, and industrial structure are primary determinants of GVC participation. These structural characteristics drive the supply and demand of GVCs and determine the level of backward integration, which references a company buying or internally producing parts for its supply chain, or forward integration, where companies expand to take control of direct distribution or supply of a company's products. The overall market size of an economy's domestic market assumes that larger markets can supply a wider array of local products to meet demand. Although no economy is fully self-sufficient, larger markets have more people and typically larger industries than smaller economies. Larger markets may supply an abundance of products, but this does not necessarily mean that larger economies are more productive or can effectively engage GVCs. Take for example Indonesia, an economy with over 250 million people and a large land mass. While Indonesia does engage in international trade and GVCs to some extent, there are not many Indonesian companies with significant investments or outsourcing abroad. Compare this to

Chinese Taipei with some 24 million people that is heavily engaged in GVCs with many investments across Asia and Latin America.

The above example brings Kowalski to address the level of development of a market and its ability to effectively engage GVCs. Developed economies with higher per capita income tend to have better infrastructure and invest or source commodities or intermediate products from abroad while exporting a greater share of services, intellectual property, and advanced intermediate goods. These advanced firms can more heavily depend on their experience and refined business processes to trade and invest abroad to lower costs or enter new markets.

Developing economies, on the other hand, are typically less integrated into GVCs where economies are often focused on base level agricultural, natural resource extraction, or lower value manufacturing. This does not mean that they cannot engage in GVCs or develop their industries. Improvements to infrastructure, openness to trade and FDI, high levels of human capital, etc. can make a smaller developing economy stand out and incorporate into GVCs. In actuality, an economy that has traditionally been more challenging to do business in with less sophisticated industries has an opportunity to make improvements to spur rapid economic growth. Malaysia is an excellent example of a once less developed economy that improved most domestic competitiveness indicators and has since emerged as an upper middle income economy.

Economies that grew out of a strong manufacturing sector or have a higher share of manufacturing as a percent of GDP are better engaged in GVCs than natural resource based economies. GVCs become increasingly dynamic with the trade in intermediate goods and services. Manufacturing and technology companies tend to demand a greater number of inputs and services to support their product lines, and thus engage a wider array of domestic or international providers.

Geography and location have a significant impact on the level of engagement an economy and respective firms engage GVCs. It is much easier for an economy surrounded by other developed and industrialized economies to engage in international commerce, utilizing neighbor competitive advantages. Additionally, geographic benefits such as being located on primary shipping lines or near valuable commodities is advantageous to lower the cost of logistics, instill a transportation industry, and service trade of domestic firms. Quality infrastructure then facilitates the efficient movement of people and products, both within the economy and abroad.

Chinese Taipei and Indonesia are again excellent comparative examples for both industrial structure and geography. Chinese Taipei, with a strong focus on electronics and intermediate inputs and near China; Japan; and Korea, excel in their niche product lines and are globally competitive based on demand from neighboring economies as well as their specialization in electronic product lines. Indonesia on the other hand, is an archipelago that reaches the most Southern tip of Southeast Asia. While Indonesia lays along primary shipping routes and is abundant in natural resources, the economy has never emerged as a manufacturing hub. It cannot be determined if the distance and challenges in logistics hinder Indonesia's emergence as a manufacturing powerhouse or if the focus on natural resource industries dampens the drive for improving manufacturing. None the less, Chinese Taipei, with its focus on manufacturing and strategic location to some of the World's leading manufacturing and technology economies, is heavily engaged in GVCs.

While each economy holds respective factor endowments and have invested in core indicators of education and infrastructure, there are a number of activities that can support engagement in GVCs. Porter outlines five areas that play a role in an economy's ability to engage GVCs. First, *Prior Exposure to International Practices and/or Markets* improves the likelihood of firm level success abroad. Traditionally, a public sector will lead the "market entry," by engaging in diplomatic and trade enhancement activities such as trade missions which will bring companies to new markets. Additionally, programs such as investment attraction and trade promotion help companies work through market access challenges, information asymmetries, and regulatory hurdles. Where this is some level of public sector support, firms are likely to follow. Below are a number of public sector policy level initiatives that can support GVC integration.

Secondly, *Targeting of Market Segments Based on Some Form of Comparative Advantage* can drive expansion. Although targeting public policy can be construed as favoring specific industrial segments, focusing on what an economy and respective industries do well is incredibly important. It is very difficult to build an industry or compete, especially on a global level, without past experience, capabilities, or the resources and networks to excel. Economies must look inward to assess what they do well domestically and where they can utilize their domestic strengths abroad. By analyzing comparative advantages, economies can also gauge how they want to drive further industrial development into downstream sectors.

Public sector engagement in the international community and domestic comparative advantages lay a baseline for engaging GVCs. Porter's third standard of *Painstaking Accumulation of Capabilities and Use of Certifications as Evidence of Proficiency* encourages domestic firms to upgrade their provision of products and services which in turn, makes them more competitive on a global scale. Through mandated public policy, firms are forced to either improve efficiencies or improve their products to meet a minimum level of quality. While this may be a burden in the short term, over time, standards drive innovation and quality. Firms that can meet both domestic and international standards, with certificates of proof, will be more competitive than firms that cannot. Next, *Firms Leveraged Resources and Collaborated with Other Peers to Address Common Challenges* builds the networks and cooperative activities to support GVC engagement. Business associations such as the United States – ASEAN Business Council, trade platforms such as the Federation of International Trade Associations, international affairs forums such as APEC, and other commercial organizations help address information problems and offer a platform for advocacy initiatives, bringing a collective voice to a specific community or issue. These organizations are instrumental in enhancing both domestic level and international engagement of active stakeholders. Finally, *Continuing to Learn and Improving Capabilities Even After Joining a GVC* is a necessity to maintain competitiveness and gain market share. As referenced earlier in this report, global competition forces firms to improve efficiencies and product lines to attract more customers than other firms. Firms that cannot evolve to modern and future market conditions will be driven out by others.

2.3 Factors Impacting GVC Connectivity

GVCs govern modern day international trade. As GVCs characterize the range of value-adding activities of bringing goods or services through various production phases and final delivery to customers, companies must see where they fit within GVCs while economies can work to improve the overarching business environment to facilitate commerce. Unfortunately, there is no one

strategy for either a company or an economy to employ to better integrate into GVCs. Many factors such as infrastructure, institutions, human capital, trade policy, research and development (R&D) and technology, and countless other competitiveness factors impact how economies and business incorporate into GVCs. This study outlines below a number of the most important factors public sectors can pursue to improve companies' ability to better engage GVCs. As this study analyzes Asian and Latin American GVCs and the connectivity between the two regions, the study does not delve deeply into firm level competitiveness and what companies can do to engage GVCs, but rather on the macro-level and what economies can do for their commercial constituents and then a deeper analysis into both regions' GVC development and the connectivity between the two.

2.3.1 Infrastructure and Logistics

Adequate infrastructure is a necessity to effectively engage GVCs. All types of transportation infrastructure including roads, rail, sea and airports all facilitate industry and the movement of goods, services, and people. Without sufficient transportation infrastructure, communities and companies cannot efficiently engage in international commerce. Moreover, insufficient infrastructure inflates the cost of doing business, time to move products, and discourages the transportation and utilization of intermediate inputs (Blyde 2014). As the weight-to-value ratio of transportation declines, trade in intermediate goods and commodities increases. Aside from supporting business, quality infrastructure facilitates the movement of people, both internally and abroad. With improved infrastructure, local populations are able to move around more efficiently while connectivity abroad enables tourism and business connectivity.

Telecommunications infrastructure is also incredibly important in the modern era where high speed internet and lower cost telecommunications systems support connectivity and the transfer of information and utilization of technology. GVCs depend on the uninterrupted flow of information across businesses and economies where it is a necessity to efficiently connect within the various links of a value chain (OECD 2013). With quality communications, both companies and the general populace can connect with peers locally and abroad while also accessing an incredible number of services, media, and data. Improved communications infrastructure also contributes to innovation. Today, some of the World's most valuable companies are technology companies that are dependent on communications infrastructure. Businesses such as Facebook, Amazon, Google, Apple, Uber, and countless others all demand internet and mobile data service providers. Without sufficient communications infrastructure, businesses and society lack access to an abundance of efficiency improving technologies, the wealth of information available online, and ability to communicate vast distances efficiently and at lower costs. Communications infrastructure provides the backbone for modern economies to upgrade and grow.

Aside from the hard infrastructure, the emergence of logistics companies have improved the efficiency of both domestic and international trade over the years. The number of supply chain management firms and freight forwarders have grown in number by a factor of three and eight times between 1970 and 2011, respectively. These companies support the preparation of international trade documents and customs documents and deliver efficiencies in freight consolidation, warehousing, shipping, and distribution (Blyde 2014). Moreover, logistics software developers supply innovative technologies that help companies to make efficiency improvements when transporting both intermediate goods and final products to businesses and consumers. This

is incredibly important in the modern era and in supporting GVC connectivity where large volumes of intermediate goods and services cross borders numerous times. By outsourcing the detailed and often time consuming activities necessary to transport products abroad, companies are better capable of focusing on core business activities.

Improvements to both transportation and telecommunications infrastructure enhances overall efficiency for both firms and society to the areas receiving the investment. Thus, geographies with better infrastructure are typically more engaged in GVCs. Companies are more likely to invest and do business with economies that have adequate transportation infrastructure and logistics services that reduce disruptions in supply chain, inventory holding costs, depreciation costs, handling costs, and general connectivity. Transnational and companies working within/looking to engage GVCs must have access to reasonable to high quality communications technologies to connect with others abroad (Blyde 2014). Quality infrastructure attracts global investors so long as there is an open FDI and trade regime, where these investors may even contribute to enhanced infrastructure development independently, and making new investments, often in advanced technologies, to support business operations.

2.3.2 Institutions

Hard infrastructure in transportation and communications provides the means to transport goods and services, but soft infrastructure in public sector, legal, and finance all play an equally important role in supporting business, investment, and GVC connectivity. There are numerous research studies highlighting the importance of institutions to support economic development, business, and GVC integration. Areas of primary importance are intellectual property protection, absence of corruption, political stability, credibility of reforms and policy initiatives (especially trade and investment policies), access to finance, and the overarching legal system, where sanctity of contracts, transparency, and consistency support the confidence businesses have in economies (Ash 2015).

With the increasing connectivity and flow of goods and services between economies and companies, institutions are increasingly important to support economic development and growth (Ash 2015). Closed trade and investment regimes, inconsistency in contractual law, lack of intellectual property protections, prevalence of corruption, political uncertainty, and numerous other factors can all have a negative impact on business development and GVC integration. Economies that have quality institutions to manage the aforementioned constraints are better capable of engaging GVCs. Institutions can support the legal, regulatory, and enforcement mechanisms needed to not only maintain the status quo, but also encourage improvements through standards and certifications. Standards and certifications are policy mechanisms that obligate companies to improve products or processes to meet specific specifications. Although standards and certifications may be seen as a hindrance to some companies, they can instigate upgrading while also better protecting consumers and business partners.

Dollar et. al. highlight in a quantitative research study that economies with better institutional quality indeed have a higher level of forward GVC integration, especially in sectors with a high degree of intermediate products. While this is the case for more industrialized economies, those with weak institutions often have higher backward GVC participation as upstream companies look to access resources or less developed markets. Overall, Dollar and his team find that less public

sector intervention, customs efficiency, consistent contract enforcement and access to finance significantly increase the probability an economy or firm can engage GVCs. The OECD (2015) also confirms the importance of institutions on GVC integration where the study highlights the impact on GVC integration of other policies, where tax rates, quality of electricity supply, product market regulation, and numerous other factors can support or discourage GVC integration.

2.3.3 Trade Policy, Free Trade Agreements and Trade Promotion

Although companies are the prime actors in GVCs where respective products and competitiveness drive supply and demand, economies openness to trade and FTAs are measures public sectors can utilize to support GVC integration for domestic businesses. As economies become increasingly industrialized and the consumer class demands more sophisticated products, imports and efficient pricing are just as important as exports. Efficient import policies and operations may be even more important this day and age as companies demand an increasing amount of intermediate goods and services to later export. Tariffs, non-tariff trade barriers, border delays, and other protectionist trade policies inflate the cost of doing business and consumption as well as access to the diversity of global products. GVC integration requires quick and inexpensive access to goods and services to support business growth and international competitiveness.

Bi- and multi-lateral FTAs are policy tools public sectors can pursue to improve trade relationships with one or more trade partners. Besides for reducing the cost along numerous product lines through the reduction or elimination of tariffs, FTAs signify economic cooperation between economies and bolsters political and institutional collaboration. These trade agreements make trade relatively more attractive than trade with other non-FTA signatories and can stimulate FDI from other economies to gain access to the benefits of the trade agreements themselves (Thangavelu 2014). FTAs do indeed signal enhanced global connectivity, but it is incumbent on companies to take advantage of the agreements while supplying products that are demanded by the trade partners.

FTAs do indeed facilitate trade relationships, but they do not necessarily find new business partners and customers in different economies. As international trade is increasingly competitive, domestic, provincial, and even some cities are actively promoting constituent businesses and products abroad. By developing geographically focused marketing materials on competitive industries, implementing trade missions, instilling an international trade representative, providing political support with trade partner representatives, utilizing online trade platforms, and other measures, the public sector actively works to enhance GVC connectivity and finding opportunities abroad for companies. This is often most useful for SMEs that do not yet have international experience. Through public sector support, these SMEs can access the intelligence to better consider foreign markets and potential business partners.

In a study by Kowalsiki in 2015, his analysis highlights that economies in the same region trade 25 percent more than with non-regional partners. Moreover, while FTA signatories enhance trade by around 10 percent, FTA partners in the same region increase by 33 percent. While there are some discrepancies depending on the type of product, on a gross level, being in the same region and having FTAs have a significant impact on increasing trade.

2.3.4 Openness to Investment and Investment Attraction

FDI is a driver of GVCs and openness to foreign investment enhances global connectivity, provides employment opportunities, increases exports and diversity of local products, brings in different technologies and ways of doing business, and can have a number of other positive spillovers. GVC economists purport that openness to FDI and participation of MNCs in developing economies raise the productivity levels of domestic firms (Thangavelu 2014). Aside for putting additional pressure on local firms to improve to compete, MNCs deploy skills and technology trainings to raise human capital, bring in advanced capital to generate efficiencies, and connect to their wider global networks to access quality/cheaper intermediate goods and increase exports. The overarching hope of GVC theory and utilization of FDI is that as more MNCs and capital come into a developing economy, local populations and institutions will improve together to support not only the MNCs, but also the local companies that cooperate with the MNCs and/or innovate on their own. Benefits of GVC connectivity and openness to FDI are expected to trickle down to the population over time to improve basic human capital levels to achieve greater employment opportunities.

There are two primary types of FDI, vertical and horizontal FDI. Vertical FDI occurs when a company delegates part of a production process to a branch in another economy. In the case of vertical FDI, a company typically uses the affiliate company to produce an intermediate input or product for downstream operations. Often, MNCs will invest vertically to achieve cost savings, expand supply chains, or gain access to other capabilities or raw materials. On the other hand, Horizontal FDI occurs when a company invests in another economy in the same business line as operated at home. Horizontal FDI often occurs in the agriculture or extractive industries where MNCs look to access scarce resources in different economies. Regardless of the FDI strategy, both connect economies into GVCs bringing benefits and caveats as referenced above.

The impact of FDI and GVC connectivity can be observed when comparing the Korea's. Korea has advanced exceptionally over the past three decades, enhancing their internal capacities and cooperating with foreign investors. Today, many Korean companies have expanded abroad and are developing their own GVCs to enhance competitiveness, enter new markets, and generate cost savings. Korea is now a modern globalized economy driving a number of international products and trends. The northern neighbor, on the other hand, has shunned FDI and international engagement. As such, the economy has not significantly developed over the past three decades. The economy has not grown or diversified while a number of currencies are used domestically as confidence is lacking in the local currency, while most other economies will not accept it as foreign exchange. Famine, unemployment, internal focus, and lack of upgrading keep the economy from engaging the greater world and providing improved opportunities for the population.

Similar to trade promotion activities, many economies, provinces, and cities are actively working to attract investment from abroad. The activities involved in trade promotion are almost the same as investment attraction and are often engaged in parallel. Economic development organizations (EDOs) promote local capacities and facilities abroad to entice foreign companies to open up businesses in the EDOs geographic area. These promotional activities may or may not include investment incentives, but primarily, this plays a role in educating foreigners on investment and business development opportunities in the home geography.

2.3.5 Human Capital

Considering that companies are the basic unit of GVCs and people are of primary importance to a company, it should be of no surprise that a company's level of human capital and accumulation of skills heavily impacts a business' ability to engage GVCs. Human capital upgrading is essential to drive companies innovations and competitive edge (Fernandez-Stark 2012). Economies with higher quality education systems and training initiatives are typically better integrated in GVCs while also providing a higher quality of life. Less developed economies, on the other hand, often face challenges in filling managerial or technical positions necessary to compete globally. This hinders companies' ability to develop products that meet some of the World's most stringent of customers as standards or pricing may not match. Although companies can source talent from abroad, expatriates often cost more money which inflates the overall cost of doing business and thus the product. As such, economies should look to upgrade educational institutions to meet the growing demand for skilled employees that can compete globally.

Often, in both developed and developing economies, there is a mismatch to what is being taught in schools and what is demanded by industry. Companies are often left wanting for technical or higher skilled positions which are not being produced by local educational institutions. To overcome this challenge, many companies implement respective training programs to bring employees up to par with workplace demands. Although this is an additional cost in both time and money, it is a necessity for firms to maintain and grow competitiveness. In order to more efficiently prepare an economy's population for the workplace, public or private educational institutions should cooperate with industry to determine which skills are necessary and demanded by companies. In doing so, the education system will evolve to deliver work-ready employees armed with base level capacity to be effective on the job. Moreover, populations with better education typically expand into higher value work activities which foster innovation and efficiency improvements to compete globally.

The level of human capital development is also a consideration of firms looking to invest abroad. In terms of vertical FDI, companies usually offshore lower value activities such as assembly, low-skilled manufacturing, call centers, and other less skilled intensive functions. While lower skilled operations are the ones offshored, they still demand management, administration and the capabilities to implement the job at hand. With horizontal FDI, companies must replicate business operations in different economies and thus demand similar levels of human capital to be effective.

Populations in less developed economies, where employment is often concentrated in agricultural, extractive, and base level service sectors, often demand significant training to transition into higher skilled labor and work effectively at MNCs expanding in economies receiving FDI. Statements from countless company representatives interviewed highlight that sourcing high quality employees is one of the most significant challenges when working in developing economies. This slows GVC integration and company growth in respective economies. Thus, every economy, developed and developing, should continue to invest in education and training institutions that match with industry labor demand to support human capital development and continuous upgrading. This is most effective when focusing on industries where there are already some capabilities and experience that individuals can relate with instead of learning a while new activity.

2.3.6 Research & Development and Technology

It should be clear from the information above that upgrading and innovation are incredibly important to competitiveness and GVC integration. Applied R&D, which is the application of accumulated knowledge and skills of human capital, leads to the creation of new technologies that can improve and/or supply new products or processes, lower operational costs, gain market share, and contribute to the overall science of respective fields of study. Technological innovations have continuously evolved since humans learned to use fire and rocks as hammers, but modern R&D often aims to make small improvements to past innovations in a specific function, much like GVCs push companies to be increasingly specialized in a product or service.

Technology facilitates GVC connectivity. Without the accumulated knowledge of our forefathers and the improved utilization of past discoveries, there would be no such thing as GVCs. Boats, airplanes, internet, and all the other modern and future products and services come from R&D and technology. As such, both economies and companies should support human capital development to continue making progress on R&D and technology improvement. Modern technological innovations make the world smaller by easing communications with distant peers, allows enhanced specialization based on competitive advantage, increases productivity and pushes labor into more added value activities, reduces the time necessary to produce and deliver products and services, and numerous other benefits.

Developed economies typically have greater accumulated stocks and development of R&D and technology, but developing economies can innovate and improve efficiencies independently as well. Developing economy populations and companies can analyze their competitive advantages and accumulated experience in various fields and improve as needed and as demanded. Moreover, developing economies can utilize other economies past innovations to leap frog older technologies to employ the latest innovation. Technology transfer is one of the primary benefits developing economies' companies gain when integrating into GVCs with MNC investment and partner companies. By cooperating with technologically superior companies, developing economy partner companies gain access to others efforts and may one day be able to innovate and grow their own markets based on this experience.

2.3.7 Services

Services are the “glue” that holds GVCs together.¹ While often overlooked, services play a critical role in supporting business operations and connectivity abroad. Although a service may not be a core business activity for a production company, these services indeed drive overall company competitiveness, whether they are conducted in-house or outsourced. Sectors such as communications, insurance, finance, R&D, engineering, legal, logistics, marketing, and countless other services facilitate and streamline a diversity of business operations and promote efficiency improvements. Moreover, numerous manufacturing companies supply services along with their primary products to support core and non-core business processes. As services have increased

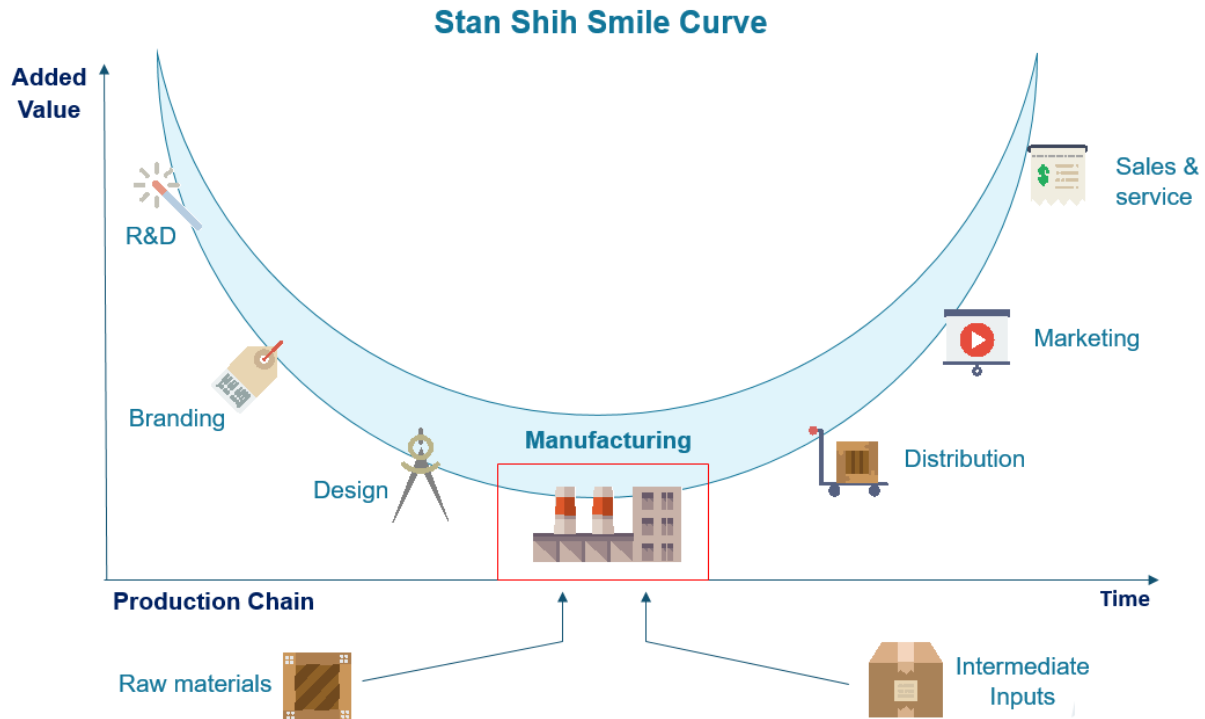
¹ Quote from Javier Lopez Gonzales, OECD Trade Policy Analyst, at the Public Private Dialogue on the Study on Enhancement of Integration of RVCs in Asia and Latin America and the Caribbean in Peru on 17 August 2016.

in importance and numerous firms have become leaders in respective fields, so has the international trade in services. This can be referred to as the “trade in tasks.” (Kommerskollegium 2013).

Today, services account for an increasing percent of global GDP. Many developed economies’ companies have evolved away from lower value added production processes and now focus on higher added value services such as design, engineering, branding, etc. Furthermore, companies are even outsourcing lower value added services, which were traditionally middle class office jobs, to third economies to achieve cost savings. Services now integrate all the GVC concepts as products, but on a human capital and task basis where developing economies are increasingly integrated into service GVCs. As services are so important to overall business processes and are now traded on a global scale, they should not be discounted. Currently, a number of organizations are trying to better measure services’ contribution to GDP and international trade. As data are better analyzed and reported on, the value of services will become increasingly clear.

2.3.8 Value Added, Specialization and Upgrading

Value added is defined as the enhancement a company gives its product or service before offering the product to customers (Investopedia). Value is created at various levels of commercial processes by numerous players along the value chain. Efficiency enhancements, quality improvements, cost competitiveness, delivery times, level of customer service, innovativeness, etc. are all value factors that can improve competitiveness of a company. The *margin* of value added is dependent on customers’ willingness to pay for product or service. Success will depend on various factors such as the size and diversity of a market, public sector regulation, level of sophistication of competitors, utilization of technologies, human capital, access to raw materials, etc. It is a company’s challenge to discover what, at what price, and to whom their products and services are demanded in comparison to their competitors.



The above Smile Curve above illustrates where companies can add value to their production processes and products or find a niche in a value chain. Commodity extraction or base level manufacturing and assembly typically holds the least value along a value chain where service and product upgrades generate wider margins, although typically smaller on an overall volume basis. A company that is vertically integrated may conduct a number of business processes such as research and development (R&D), design, marketing, distribution, etc., adding value to their core product. In the globalized world where firms are increasingly specialized, it may not be of the best interest for a company to be vertically integrated, but rather to outsource non-core business activities that other firms may have a competitive advantage in. For example, top brand shoe companies such as Nike and Adidas have evolved over the years to focus on R&D, branding, design, and marketing, outsourcing lower value business processes such as manufacturing to contracted companies, typically in lower cost economies. While the curve above shows how value can be added, companies should focus on what they do best to stand out amongst the competition and utilize others capabilities to improve their core business.

Kaplinsky divides value added into five categories listed below:

- A. Trade rents: competitiveness stemming from production scarcities or trade policies**
- B. Technological rents: profits gained through asymmetric command over specific technology**
- C. Organizational rents: company sophistication and/or efficiency based on management skills**
- D. Relational rents: operational advantages through network of interfirm relations, clusters, alliances, etc.**

E. Branding rents: popularity and sales derived from strength in name and product

Companies can focus on one or more of these rent categories to carve out competitive advantage. Whether it be control over land with natural resources, superb leadership skills to fuel efficient output, or hopefully a combination of all five categories, firms can develop their capacities against their competition to better compete. Moreover, businesses create value within respective markets, where value addition expands, but becomes more competitive as the market grows. For example, an entrepreneur living in a rural rice farming village can create value by utilizing farming techniques that increase yields thus lowering costs in comparison to neighboring farmers. This adds value to for the villagers as the farmer can produce more for less costs. Expanding this model outside the rural village would become increasingly difficult unless this farmer had a truly unique and efficient system that could revolutionize the industry. If the farmer expanded out to the district, provincial, and further abroad, he/she would come across many others who operate with similar or more efficient means. These competitors would add value in their own regard based on their capacity to generate rents. This limits the extent our sample farmer could continue to add value to the base commodity of rice as the next level of value addition may come from other areas such as transportation (trade and technology rents), higher yield seeds (technology rents), access to distributors (relational rents), etc. To continue adding value, our farmer would need to *upgrade* to continue to grow.

In relation to generating rents, a company can upgrade their provision of products and services to maintain or build market share. Humphrey and Schnitz identify four different types of upgrading that enhance competitiveness

- A. Process upgrading: increasing the efficiency of internal processes to a point better than rivals**
- B. Product upgrading: developing new products or improving old products before other companies (first mover)**
- C. Functional upgrading: augmenting corporate activities to increase value added (outsourcing, quality functions, accounting, other)**
- D. Chain upgrading: moving the value chain (example, Apple moving from computers to portable music devices to mobile phones)**

For a firm to maintain and/or grow profitability, upgrading is essential given the competitive marketplace. If a company does not upgrade and excel in at least one of the four previously mentioned indicators, competitor firms will improve on their own and take market share as their products or services become superior in cost, quality, access, or other metric. Without upgrading and specialization, formerly successful companies may drop out of a value chain or a market all together. Blackberry in the cell phone market, Netscape for internet search, Betamax movie cassettes, and others are all examples of products that could not last given evolving consumer demand.

In the modern era, where consumers have access to products from numerous producers, generating higher added value demands participation in GVCs and sophisticated consumers (Kaplinsky 2000). Consumer demand drives product innovation where companies that supply to the most demanding of customers will continuously improve to meet consumer needs. As

companies expand their markets and improve/expand operational models, rival firms will step to wrest market share. Through this tit for tat process, the truly global players beat out tiers of competition to sit at the top of the value chain. Thus, firms that specialize in a specific industry, process, product, or service are more likely to succeed than a company trying to do all things internally, but none of them excellently. Even some of the World’s largest and most successful firms have devolved business units and processes in order to hone activities to their core business they are most competitive in or have the most potential for growth

2.4 Concluding Remarks to Introduction

The introduction above characterizes GVC theory at a very high level and touches on some of the primary points that impact economies’ and companies’ ability to engage GVCs. The theoretical framework above will be referenced in the following regional sections. In presenting the theory here, readers will have a better understanding on how Asia and Latin American value chains have developed over the years and what economies and companies can do to integrate into GVCs and connect between the two regions. Below are some summary tables of factors that impact GVC development and triggers to supply chain disruptions. Most of the factors listed below will be covered in the regional sections in a more detailed and practical manner.

Barriers	Effect
1. Quality standards in developed economies limit access	1. Satisfying requirements too difficult, time consuming, or expensive
2. Insufficient skilled workforce	2. Low level of technology with little innovation
3. Lack of access to credit and other resources	3. Unable to finance and invest in upgrading
4. Too much regulation or weak institutions	4. Unable to efficiently operate or too many barriers
5. Insufficient infrastructure	5. Inaccessibility or high costs of transportation

Source: Pieter van Dijk 2012

While there are many initiatives companies and economies can undertake to better integrate into GVCs, there are global and macro factors that are incredibly hard to protect against and that often impact the world market place. Although measures can be taken to reduce the likelihood or level of distress incurred from such triggers, global volatility and Mother Nature can never be fully mitigated. This study does not delve into how public sectors and businesses can protect against such triggers, but the reader should keep the risks below in mind when considering GVC integration, how these factors may impact the focus economies of this study, as well as the case studies.

Triggers of global supply chain disruptions	
Environment <ul style="list-style-type: none"> Natural disasters Extreme weather 	Economic <ul style="list-style-type: none"> Shocks in demand Volatility in commodity prices

<ul style="list-style-type: none"> • Pandemic 	<ul style="list-style-type: none"> • Border delays • Currency fluctuations • Energy shortages • Ownership/investment restrictions • Shortage of labor
<p>Geopolitical</p> <ul style="list-style-type: none"> • Conflict and political unrest • Import/export restrictions • Terrorism • Corruption • Illicit trade and organized crime • Maritime piracy • Weapons of mass destruction 	<p>Technology</p> <ul style="list-style-type: none"> • Information and communication disruptions • Transport infrastructure failures

Source: Pieter van Dijk 2012

3. Asia

3.1 Introduction

Asia, the world's largest and most populous continent, has been driving global economic growth for the past decade. In 2014 alone, Asia accounted for approximately two-thirds of global economic growth. While the region tallied just thirty percent of world trade in 2000, the region accounted for forty percent by 2014. Asia is now a regional economic force. Although growth across Asia slowed following the Western focused 2008 financial crisis, economic growth in most economies rebounded following the crisis. Much of this growth stems from foci on competitive/comparative advantages and improvements in value chains resulting in increases of outbound trade. Unfortunately, Asian economies are facing a new crisis in the making as China's economy is slowing, significantly decreasing demand for numerous commodities and products supplied by a number of Asian economies. Moreover, tensions in the Middle East will disrupt trade, supply chains, and further improvement in some value chains. While economies may slow, domestic improvements to the business regulatory environment as well as focused improvements to pieces of industrial value chains can cushion negative impacts from exogenous shocks. Growth may progress at a slower rate in the near term, but many Asian economies understand macroeconomic volatility and are working to improve value chains to continue driving economic improvements.

This study does not cover the entire continent of Asia, rather, it focuses on the economies in East and Southeast Asia, where a number of economies participate in the APEC forum. For the purpose of this study, Asia is defined as a group of 15 geographies covering the ten economies within the Association of Southeast Asian Nations (ASEAN) along with East Asian economies including China; Chinese Taipei; Hong Kong, China; Japan and Korea. For stakeholder interviews and inputs, the researchers focused on three Asian economies which include Indonesia; Japan; and Thailand where the case studies will highlight Asian RVCs and connectivity with Latin America.

East and Southeast Asia have significantly integrated into GVCs over the past thirty years. Today, large Asian companies from both developing and developed economies create their own value chains through the typical hub and spoke mechanism. Lead companies from home economies, which predominantly come from China; Japan; and increasingly Chinese Taipei; and Korea are actively investing in less developed and/or less costly economies to achieve cost savings in production, access new markets, source raw materials, and diversify capabilities to mitigate economies' risks. While the large Asian firms have entered new markets, their growth across the region has fueled the development of countless SMEs, many of which engage in GVCs. In comparison to other regions, Asian SMEs have a higher participation rate in GVCs where upgrading processes occurs in many cases (ECLAC 2015).

The waves of Asian companies investing into GVCs started expanding at an increasing rate in the 1990's. Japanese multinationals led the charge of Asian value chain creation opening production facilities across ASEAN and East Asia. In order to find growth in emerging economies as well as developing lower cost export led growth strategies, Japanese companies invested

heavily in assembly operations and production facilities for components and other low-cost products. These companies effectively lowered the cost of labor and the price of final products by producing pieces of a product outside of Japan and assembling in other economies, where finished products were then exported to global markets. Based on Japan's success, other Asian economies saw the advantages of establishing subsidiaries in developing economies to improve cost competitiveness and have followed Japan's lead (Banga 2013).

One of the most impactful economic occurrences in modern history commenced when China carried out the Reform and Opening-up in the late 1970's. This ushered in waves of FDI and domestic investment to propel the world's most populous economy into the economic powerhouse it is today. Moreover, China solidified its spot as a manufacturing workhorse by joining the World Trade Organization in 2001, harmonizing many trade procedures with international standards, improving access to Japanese and other economies' supply chains, while encouraging further FDI (WTO & IDE-JETRO 2011).

China's growth into the world's second largest economy and leading manufacturer shifted the economic center of Asia. Regional production networks lowered their dependence on Japan and the United States, becoming increasingly integrated within Chinese value chains. Moreover, the economy's impressive economic growth stoked demand for natural resources from Asia as well as other regions. This prompted natural resource abundant economies to further develop their utilization of natural resources, linking significant proportions of commodity and processing value chains to China. Additionally, China aggressively expanded its transportation infrastructure and trade networks within the region, creating a demand side dependence on the emerging economy. Eventually, China became the primary market for intermediate products and assembly where final goods were produced for export primarily to the United States and European economies (WTO & IDE-JETRO 2011).

While China's modern economic story is impressive, the economy's transition to the "factory of the world" could not have been accomplished without the intermediate inputs and technologies transferred from companies outside of China. Being able to import intermediate products allowed China to utilize its competitive advantage in labor for assembly. By not having to specialize in and produce each and every piece of a final product, China utilized other economies' capabilities to fuel industry and job creation domestically. Moreover, as MNCs looked to enter the large Chinese market, they were expected to train local employees and transfer technologies to domestic producing businesses. Over time, Chinese firms developed their own capabilities and now compete on an international level across a diversity of products. China successfully deployed many of the tenants characterized in value chain theory to improve its economy, create jobs, and enhance domestic company capabilities.

ASEAN, consisting of ten economies, is an incredibly diverse region where respective Southeast Asian economies have engaged GVCs to varying levels. This diversity among member economies is a strength for the region to utilize each other's comparative advantages where economies could specialize and cooperate to compete globally (Nookhwun 2015). That being said, each economy has distinct cultures, business practices, and politics that complicate

investment into the region as a single market. Moreover, these economies compete between each other in industry and FDI attraction.

To highlight the diversity of Southeast Asian political-economy, we can look at the vast differences between Myanmar and Singapore. Myanmar has just recently started opening its economy to globalization after decades of isolation under military junta rule. In 2014 per capita GDP (current US\$) was \$1,204 where the developing economy hosts the lowest minimum wages in the region. Moreover, the transitional economy recently harmonized its currency and is establishing a formal banking system and rolling out trade and investment rules and regulations. On the opposite pole, we have Singapore, the most developed and organized economy in the region. Singapore per capita GDP was \$56,284 in 2014 where the economy has been ranked as the top economy by the World Bank in terms of ease of doing business (World Bank Data). While Singapore is considered an outlier in the region in terms of per capita GDP and economic sophistication, the other ASEAN economies fall somewhere in between the two extremes where each have comparative advantages that could support regionalization under the ASEAN Economic Community framework.²

With such a diversity of natural resources, human capital endowments, and products, Asia is expected to continue expanding within GVCs. As the factory of the world, Asia produces a majority of intermediate products while the services sector is creating improved efficiencies and added value for industry. Moreover, transportation infrastructure continues to improve and regional forums, such as APEC, enhance cooperative activities. Asia is and will continue to be a driver of global economic growth.

3.2 Asia and RVCs

Approximately 2.2 billion people call East and Southeast Asia their home. This region is by far the most populous area on Earth with an incredible diversity of ethnicities, cultures, languages, and political systems. While differences abound, most Asian economies have grown and improved in terms of sophistication through cooperative and competitive activities. Economies such as Japan which suffers from a dearth in natural resources source commodities from other Asian economies and utilize its comparative advantage in technology and human capital to support industrialization across the region. China, which is abundant in both labor and natural resources, but was lacking in technology, turned itself into an assembly economy, importing intermediate inputs from others to export final goods to end consumers. On the other hand, Singapore, which is a small territory with just over five million people, carved out its niche between much larger Malaysia and Indonesia to become the easiest place to do business in the World and has focused heavily on the financial and logistics industries to become the business hub of Southeast Asia. While each Asian economy is unique in their own regard, none are self-sufficient and depend on each other

² AEC comprises 10 economies in Southeast Asia with the goal of establishing Southeast Asia as a single market for trade, investment and production. Through integration, it is expected that the region will gain competitive advantages where respective economies will focus on competitive advantages and trade intra-regionally while also cooperating as a block and negotiating based on its regional size rather than smaller economies' bilateral negotiations.

to fuel growth, both domestically and internationally. Over time, respective economy's factor endowments and inter-dependency developed substantial RVCs.

3.2.1 Characterization of Asia Region

Regional attribute	Status
Geography	For this study, Asia is defined as a group of 15 geographies covering the ten economies within ASEAN along with East Asian economies including China; Chinese Taipei; Hong Kong, China; Japan; and Korea. A majority of this Asia borders the Pacific Ocean and spans a number of climates and diversity in terrain.
Economy (general)	Highly diverse economies, housing economies of all World Bank income groups. Asian regional economy logged incredible growth over past two decades with improved livelihoods and added value industry. While economic shocks rise and fall, Asia will be a growth driver for the coming years.
Significant economies	China is the largest economy and most populous economy in the region, followed by Japan in terms of economic size.
Major trading partners	Intra-regional (China and Japan for most economies); Australia; Brazil; United States; and European Union.
Main traded goods	Electronic equipment, oil & gas, machinery, cars, minerals, plastics, optical machinery, chemicals and ready-made garments
Infrastructure	Vast regional differences. Many Asian economies suffer from insufficient infrastructure. Some ASEAN economies suffer from chronic underinvestment across nearly all aspects of infrastructure development, most notably energy and transport. Developed Asian economies including Hong Kong, China; Japan; Korea; and Singapore are considered to be among the most sophisticated in the world.
Education	Employers often face a shortage of skilled labor, both in developed and developing Asian economies. Quality of local primary, secondary and tertiary educational systems usually fall short of global standards besides for select geographies such as Japan; Korea; Shanghai city, China; and Singapore.
Financial access	Most developing Asian economies are dominated by a few commercial banks who often apply strict standards to financing where many individuals and companies have little access to formal loan facilities. Moreover, collateral laws typically do not encourage lending to small and medium sized enterprises. Numerous developed Asian economies established stellar banking systems in recent decades, allowing relative safe and easy access to finance for local firms and consumers.
Ability to attract FDI	Accounting for nearly thirty percent of the world's FDI inflows, Asia is the world's top recipient region for foreign direct investment. Improving business climates, large domestic markets, and attractive labor rates are main drivers of foreign direct investment attraction in Asia.

Major inbound FDI industries	Manufacturing, infrastructure, hospitality and telecommunications
(Trade) standards compliance	In an effort to boost trade, many developing Asian economies are strengthening their international standards acceptance, joining global bodies and introducing and enforcing new regulations. Developed Asian economies including Chinese Taipei; Japan; Korea; and Singapore have been at the forefront of international standards compliance, often as founding members of regulating international bodies.
Trade policy	Most Asian economies enforce various types of restrictive trade policies, yet some more than others. Most economies in the region, especially emerging regional economies, are making efforts to liberalize trade in an effort to increase trade.
Trade procedures	Vast regional differences. Among some of the most efficient globally including Chinese Taipei; Korea; and Singapore, and some of the most inefficient such as Cambodia, Laos, and Myanmar.

Asia value chains really started to extend in the mid-1980s. In 1985, there were only four major players heavily engaged in substantial international trade and GVCs. Japan was the leader in developing RVCs where the dearth in natural resources encouraged companies to lengthen their supply networks into resource rich economies such as Indonesia or Malaysia to support domestic industry for both local consumers and international demand, while Singapore played a role as a trade and logistics hub. By the 1990's Chinese Taipei; Korea; and Thailand became increasingly interconnected as Japan sought cost savings for intermediate products sourced from these emerging economies (WTO & IDE-JETRO 2011). As these growing economies continued to develop, they became target markets for both final consumer goods as well as other intermediate inputs to support further industrialization, which attracted FDI from not only Japan, but also from Western economies such as the United States.

From 1985 to 1997 the emerging Asian economies mentioned above experienced incredible economic growth and an influx of FDI. While riding the tides of improving economies, they also became increasingly leveraged to build necessary infrastructure while fueling domestic investments into a diversity of industries. Unfortunately, most of these economies did not have the institutional capacity or macro-oversite necessary to manage such large and widespread flow of funds and the de-pegging from the US dollar. In 1997, contagion beset the currency markets in most of the emerging Asian economies stimulating the Asian Financial Crisis that derailed *Asian Tiger* economies for a number of years to come.

As the *Asian Tigers* lost steam, China emerged as the next boom economy after it joined the World Trade Organization (WTO) in 2001. With already strong production linkages to Chinese Taipei and Korea, entering into the WTO further opened supply chains to Japan and the United States (WTO & IDE-JETRO2011). With such a large and less expensive labor pool, China quickly became the Asian center for assembly and production of low-cost manufactures. Although China had the labor pool to produce, the economy was lacking in sophisticated technology. As such, foreign companies invested heavily into China, bringing technology, expertise, and training

programs to support industrial growth. Moreover, emerging Chinese companies needed to import a vast amount of intermediate products to assemble final consumption goods for end markets such as the United States and European Union. China's emergence as the "factory of Asia" further enhanced RVCs where economies such as Chinese Taipei and Korea could supply intermediate goods for final products to China while resource rich economies like Indonesia found an increasingly important trade partner for raw commodities.

By 2005, a vast majority of Asian economies enhanced their regional and international trade relationships and are adding value to various business lines. The complexity and volume of trade between East Asian heavily industrialized economies of China; Chinese Taipei; Japan; and Korea have increased an exceptional amount, where intermediate good trade supports dynamic industrial activities and specialization. Moreover, East Asia grew increasingly dependent and connected to Southeast Asia, as source economies for natural resources as well as reaching new markets and utilizing lower cost labor. Even smaller, less populous economies such as Cambodia have incorporated into Asian value chains.

For the emerging economies of ASEAN, GVCs have played an important role in developing Southeast Asian industry. In Thailand, Japanese FDI stimulated growth in the automotive industry making it the regional leader in vehicle and component production and exports and earning the name "Detroit of Asia." For Cambodia, garment and textile firms from China; Chinese Taipei; and Korea invested in cut-make-and trim factories, utilizing the low-cost labor for final garment assembly. In Indonesia, a diversity of international players have invested in various natural resources sectors to extract and process commodities for global markets. Foreign investment to each ASEAN economy have brought needed capital, technology, industrial capacities, and opportunities for employment. Moreover, many of the foreign investors have implemented training programs, created partnerships with local firms, and engage in corporate social responsibility initiatives. This further helps the development of local companies and human capital where GVC theory proposes that domestic industry will play a larger role in respective industrial sectors. Due to ASEAN's diversity of competitive advantages, the region is now well integrated in GVCs where regional production accounts for approximately five percent of global manufacturing (McKinsey 2014). Moreover, regional manufacturing value added exports have grown extensively, from US\$ 100 billion in 1990 to over US\$ 850 billion in 2011. Intra-ASEAN trade in intermediate products are expected to continue growing as companies continue to specialize and trade between each other (ASEAN 2015). It is estimated that intermediate and capital products accounted for approximately 70 percent of total ASEAN trade.

While Japan used to be the main investor and efficiency driver across the region, China has emerged as an additional leading Asian economy to promote connectivity across Asia, although with a vastly different model than the Japanese. Initiatives such as the Maritime Silk Road, Asia Infrastructure Investment Bank, regional road and railways, and overseas investments seek to better incorporate developing Asia into RVCs and GVCs. Moreover, Southeast Asia's emergence as an economic block characterized by relatively low tariffs and strive to function as a common market through AEC will support not only ASEAN economies' connectivity, but also their economic relations with third economies. This is most apparent in the ASEAN + trade agreements that include Australia; China; Japan; Korea; and New Zealand.

Asian value chains are significantly developed where it is expected that they will continue to evolve and improve. Expanding infrastructure will reduce product lead times and logistics costs, trade agreements and customs & boarder procedure harmonization will generate efficiencies, while upcoming trade pacts further lower tariffs, work to eliminate non-tariff trade barriers, and implement standards on numerous product types. This increasing engagement and flow of individuals improves regional understanding and develops additional business opportunities, diversification and innovation. With the emergence of low cost airlines and improved connectivity, Asia has experienced a boom in regional tourist traffic as well as business trips. The Asia region is actively exchanging cultures, ideas, best practices, products and learning the competitive advantages of each economy. While conglomerates and ambitious entrepreneurs will lead the expansion of Asian value chains, small and medium sized enterprises will play an increasingly important role supplying to larger firms while also diversifying their own product lines to reach domestic and international customers.

3.3 Status Quo of Asia RVCs

Today, Asia has robust RVCs. While there were only a few economies in the early 1990's heavily engaged in RVCs, now, a majority of Asian economies utilize their comparative advantages and foci into specific industries to support economic development, trade, and employment. Although GVCs stimulated incredible industrialization and economic development in Asia over the past two decades, numerous opportunities and challenges will impact the methods for better engaging GVC's. Developed economies such as Japan and Korea will need to continue innovating and finding efficiencies to compete in the global market place while emerging and developing economies will need to find strategies to avoid the middle income trap and develop strategies to domestic company upgrading, utilizing technology transfers, sustaining human capital improvements, and benefiting from other spillovers GVC theory purports. Less developed economies will need to take stock of their comparative advantages and look for ways to attract FDI to support industrial and institutional development. Reality, in terms of international economic and financial volatility, politics and populous movements, technological advancements, globalization and enhanced exposure to competitive forces, corporate strategies, and countless other factors will all influence economies and respective companies' ability to excel.

All economies face unique sociological, philosophical, political, and economic situations. General socio-economic upgrading can widely support industrial activities with better remunerated jobs, sustainable usage of resources, better governance and political stability, technological development, and overall business and consumer sophistication (UNESCAP 2015). While it is difficult for an economy to improve capabilities on all fronts, there are a number of tenants that encourage and/or support economic development and engagement in GVCs. Geographic location, natural resource endowments, education, infrastructure, open trade and investment regimes, financial infrastructure and access to capital, support for entrepreneurs and SMEs, industrial clustering and industrial/special economic zones all impact domestic competitiveness. While geographic location and abundance of natural resources cannot be changed, the other factors can and can be managed to better engage GVCs.

3.4 Geographic Location

Physical location and distance from partners/competitors certainly matter. It is much easier for Thailand, an economy at the center of Southeast Asia and connected to both the Pacific and Indian oceans, to engage GVCs rather than its landlocked, mountainous northeastern neighbor, Lao. While geographic location may enhance an economy's attractiveness for industrial development or FDI, it in no way excludes any economy from engaging GVCs so long as they can focus along comparative advantages. That being said, connectivity and access to cost effective transportation will lower the price of both imports and exports where some economies reap advantages based simply on the geographic location.

The regional nature of GVCs are indeed related to trade costs, diplomatic relationships, compatibility and/or past experience with similar product types that have developed over time between economies. Looking back at the history of Asian GVCs, geography certainly played a significant role into how and why the region rapidly improved its trade and investment connectivity in a relatively short period of time. Japan, an archipelago with limited natural resources, led the charge of Asian value chain development in the mid-1980s. In order to improve their supply chain and access to raw materials, Japan looked to other economies such as Indonesia and Malaysia as source economies. As Japan could not produce everything independently, companies looked to Chinese Taipei and Korea as they enhanced their industrial capacities to source intermediate products. Later, to achieve cost savings, Japan invested in emerging economies such as Thailand and Viet Nam, relatively close economies that can accommodate sea freight. This trend had a domino effect where other Asian economies followed Japan's lead and started investing and/or enhancing trade relationships with neighboring or close economies. Today, even middle income economies such as Thailand are developing RVC growth with less developed economies such as Myanmar and Laos, where distance and historical experience between each other present cooperative activities.

3.5 Natural Resource Endowments

Economies geographic location certainly determines the place on a map, but also supplies the natural resources and raw materials to build an economy off of. Economies utilize their abundance of natural resources to produce the food people put on their plates, build a diversity of products and infrastructure, fuel transportation and electricity generation, and engage in trade based on commodity and capacity differences. Many economies heavily depend on their natural resources where extraction and export are the primary foci and there is little development into downstream industry and value addition. East Asian economies as well as a number of Southeast Asian economies such as Malaysia and Thailand have significantly upgraded extraction, refining, and production of natural resources, adding value and improving efficiencies. On the other hand, less developed and emerging economies are often victims to a "natural resource curse" where the sheer abundance of commodities instills a complacency and lack of urgency for improvement. While Southeast Asia has some of the most fertile land in the World, economies such as Myanmar and Cambodia suffer from some of the lowest agricultural productivity in the region. For mineral wealth, land and capital owners tend to accrue a vast majority of profits where most Asian public sector systems do not have equitable systems in place to adequately redistribute gains made

from natural resource extraction or protect the environment. Moreover, incentives to invest in downstream industry are often lacking where developing economies are not adding significant value to their commodities. This is the case in Indonesia which has depended heavily on exporting raw commodities and has not developed a significantly large processing industry.

Natural resources are often the primary export industries for less developed and emerging economies. As such, these industrial sectors can support integration into GVCs. Most commodities can be processed to some extent to add value to raw materials. This is most applicable in the minerals sectors where significant value is added as a mineral goes through various stages of processing. Although capital investments into mineral processing can be expensive where profit margins for heavy industry such as smelting can be small, economies with large mineral wealth can consider upgrading the industry to add value. Moreover, basic processing of minerals can lead to further downstream sectors and production of various products from minerals such as metal sheets, pipes, jewelry, components, etc. By analyzing respective economies' comparative advantages, resource rich economies can figure out in which link of the value chain they can be most effective and engage in the GVCs of mineral production to continue upgrading and supplying to market demand. This is often stimulated through FDI activities where China is investing heavily in international commodity markets to not only access raw materials for Chinese consumption, but to also process goods domestically for local markets.

Agriculture, agricultural products, animal husbandry, and fisheries not only supply the nutrients a population demands to survive, but it also employs significant portions of society and offers opportunities for upgrading, diversification, reductions to imports and increases in exports. Globalization, increases to per capita GDP, and improved connectivity are fueling diversification and trade in both primary (raw) commodities as well as differentiated products and flavors. As such, Asian economies can consider their natural endowments of base agricultural and animal resources together with their unique products and flavor preferences to supply to not only the domestic market, but also to export markets.

In the past, some sectors of agricultural trade were limited due to the short shelf life of numerous products. Luckily, technology improvements to canning and packaging, cold chain storage, logistical services, etc. have improved the shelf life and lead times of both base level products as well as processed goods. This offers significant opportunity for economies to add value to agricultural products and export to other economies. Now, economies such as Thailand supply tropical fruits and ready to eat packaged goods to not only Asian markets, but also to distant economies such as the United States. China and Japan produce a diversity of food products that reach global markets, while even emerging economies such as Indonesia supply packaged noodles to Latin American and African markets.

Aside for processing and packaging domestic commodities for the local market and export, Southeast Asia has evolved to engage international processing and packaging GVCs. Presently, Thailand and Viet Nam import numerous agricultural, fish, and livestock commodities, process and package them, and then re-distribute them across the region. This processing and packaging industry highlights how developing and emerging economies in Asia have grown and added value to industries which they hold comparative advantage, i.e. significant agriculture and fishery

products. By utilizing strategic geographic positioning, upgrading industrial facilities, and utilizing relatively less expensive labor, the Asian processing and packaging industry is large, playing a crucial role in sourcing and supplying from around the World.

Improving agricultural, fishery and livestock industries has been a boon for SMEs as well. These industries employ significantly large portions of society that are still often concentrated on subsistence living or small hold farms and operations. As the agricultural, fish, and livestock industries continue to become more commercialized and sophisticated, domestic and regional SMEs are emerging as sustainable players who are increasingly engaged in GVCs. The food processing industry, which often consists of predominantly SMEs, is now one of the fastest growing industries in a number of Asian economies including Indonesia; Japan; Thailand; and Viet Nam.

Aside for food processing, Asian restaurants are growing outside their own borders and developing new GVCs across the world in their own regard. While these restaurants of course provide labor and supply of a diversity of products, they also indirectly introduce other economies and respective populations to the cultures and tastes of their home economy. For example, sushi, Chinese restaurants, and increasingly Thai and Korean restaurants can be found all over the world, often times even outside urban centers. Although citizens in third economies may never have the opportunity to physically visit one of these economies, Asian restaurant GVCs bring the cultures and flavors of respective economies to international foodies.

3.6 Population and Human Resources Development

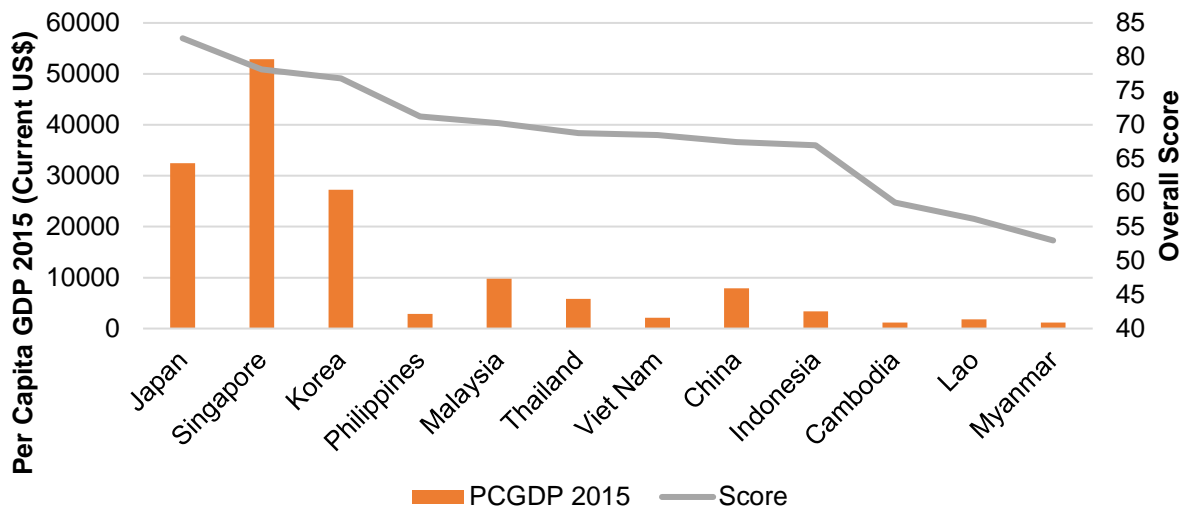
The *Asia* region for this study is the most populous region on Earth with over 2.2 billion people. *Asia* is as diverse in its populations as it is in its natural resources. “Asians” consist of hundreds of different ethnicities, languages, religions, and political beliefs supported under the flags of respective economies. This incredible diversity presents a number of opportunities and challenges to both regional governance and economic growth. Although differences between ethnic groups, religions, and economies may cause conflict, diversity also brings different ways of thinking, various ways of doing business, numerous products, and other benefits. There are a number of significant geopolitical risks impacting the region currently that could potentially destabilize further integration and initiatives such as the ASEAN Economic Community. While there will always be challenges, the increasing levels of intra-Asian tourism, student and employment exchange, and of course trade investment highlight just some of the opportunities stemming from this diversity. Although conflict will continue to plague economies over time, the opportunities of engagement far outweigh the negatives in terms of long-term cooperation and development.

As explained in the theoretical section, human capital is incredibly important to economies’ and regional development as well as incorporating into GVCs. Asian levels of human capital development vary incredibly by respective levels of development, focus on education and human capital upgrading. The World Economic Forum outputs global human capital rankings that highlight the various levels of human capital development across Asia. While Japan is ranked quite high in human capital development, fifth in the World, only Korea and Singapore rank in the

top thirty. Less developed economies, Lao and Myanmar hold low levels of human capital development, ranking 105 and 112 respectively, out of 124. Philippines seems to be the one outlier in Asia when comparing to economic development levels, but the large number of Filipinos that work abroad are a testament to the demand of Filipino workers and their skills.

Levels of human capital development have a direct impact on wages and are significantly correlated with overall economic development and GVC integration. Economies with higher levels of human capital typically demand higher wages and have higher standards of living. Per Capita GDP in Japan; Korea; and Singapore are the highest in the region while Lao and Myanmar offer the lowest wages, corresponding with human capital development. Moreover, Japan; Korea; and Singapore are the most prolifically engaged in GVCs (on a per capita basis) while Lao and Myanmar are struggling to attract FDI and engage the wider international communities. Considering these rankings, per capita GDP, and GVC integration, it can be seen that generally speaking, higher levels of development can lead to, but do not guarantee GVC connectivity. Economies and respective companies must consider the other various factors outlined in the theoretical section as well to maximize the benefits from engaging GVCs.

WEF Human Capital Index 2015 vs. Per Capita GDP



The importance of human capital development should not be understated. As people are the drivers of industry, innovation, and development, all economies should strive to maximize the potential of respective populaces. Quality education, training programs, and social services can all contribute to overarching human capital. The top ranked Asian economies in the WEF index all heavily value education and job trainings where progress is engrained in local culture. Developing and emerging economies such as China; Malaysia; and Viet Nam are also looking to add value and improve human capital development and are making investments into educational institutions, including educational GVC connectivity. For example, Malaysia has developed partnerships with a number of international higher educational institutions focused on skills sets in high demand in Malaysia itself as well as regionally.

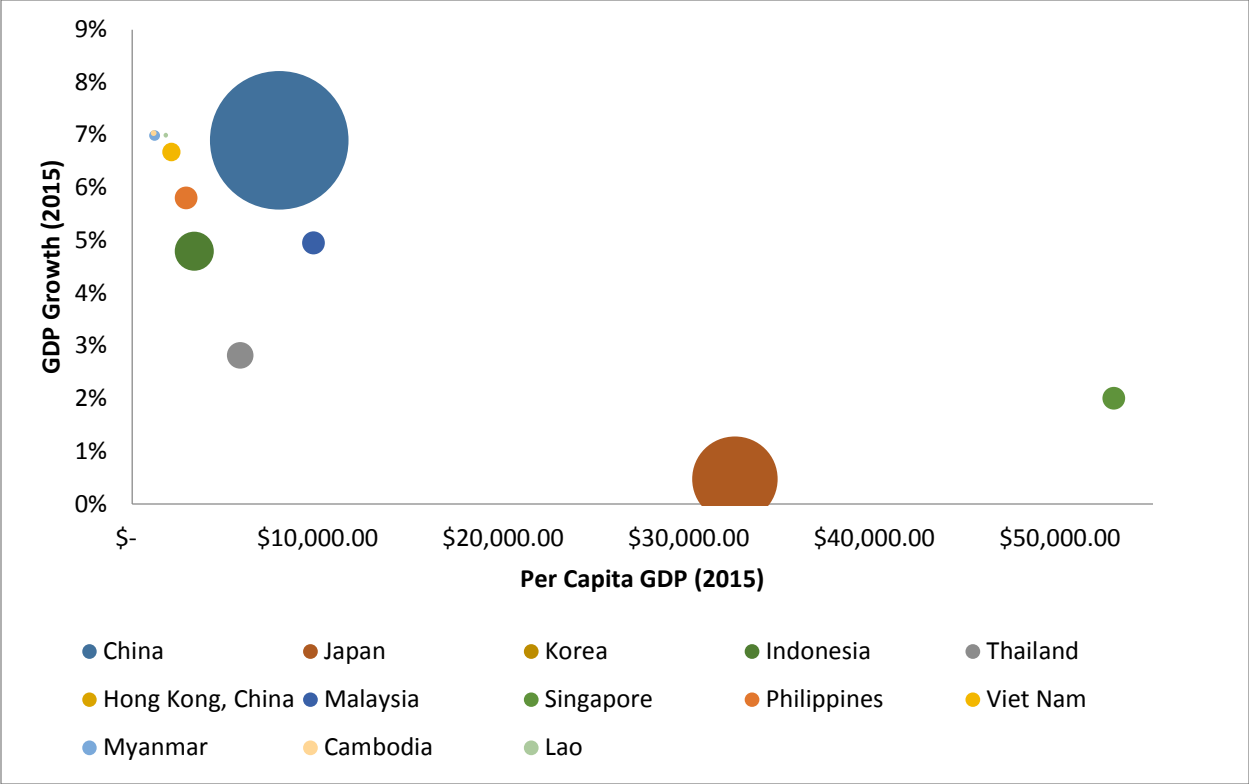
It can be seen that human capital is highly correlated with per capita GDP, but it also impacts innovation and quality R&D. Asian economies with higher human capital are more likely to invent, innovate, and improve processes than those economies with lower levels of human capital. Asia has been increasingly innovative and registering the patents to protect their products. In 2014, Asia registered over 1.5 million patents with China registering over 928,000, Japan over 325,000, and Korea over 210,000. Lao and Myanmar did not register any patents while Cambodia only registered 67 (WIPO 2015). Small economies such as Singapore are also exploiting their comparative advantage in human capital in the region and are adding value to a diversity of industries through R&D and investments in knowledge-intensive industries. As Singapore is the business hub of Southeast Asia, it is expected that these regional innovations will disperse across the region, enhancing RVCs and supporting industrial growth. Although some other Asian economies may not have as high levels of human capital rankings, some ingenuity is difficult to measure and that innovation is not reflected in the WEF ranking. Thailand, for example, is excelling at food processing and creative industries such as film, advertising, and the arts. Economies can consider their comparative advantages and foster human capital in select industries to excel. Fostering human capital in specific areas is a great way to develop industries that can effectively engage GVCs.

3.7 Level of Development

An economy's level of development often determines the extent to which an economy can engage GVCs. As explained above, Asia is an incredibly diverse region with some of the wealthiest and least developed economies on Earth. Human capital supports economies' development which then contributes to the various factors such as infrastructure, institutions, industry, trade and investment, etc. that facilitate GVC connectivity. Domestic companies of more advanced economies tend to be better integrated into GVCs as they have access to better talent, financing, generally more international experience, and a history and culture of upgrading and innovation. Below, the report highlights various areas of Asian development, alluding to how levels of development in each of the areas impacts GVC integration.

3.7.1 Economy

Asia region has been driving global economic growth for the past two decades. Today, Asia hosts four of the World's largest economies. China is currently second largest economy on Earth followed by Japan. Korea is ranked eleventh and Indonesia the sixteenth (IMF 2016). While there are a number of sufficiently large and developed economies in Asia, economies such as Lao; Cambodia; and Myanmar are quite underdeveloped with per capita GDP's less than US\$ 2,000 per year. Although each of the less developed economies are quite basic, each grew by approximately seven percent in 2015, making them the fastest growing economies in the region (World Bank Data). In 2016, regional growth is expected to taper to 5.7 percent, decelerating from 5.9 percent in 2015. Despite this dip, Asia region (including South Asia) is expected to contribute 60 percent of global economic growth in the coming two years (ADB 2016).

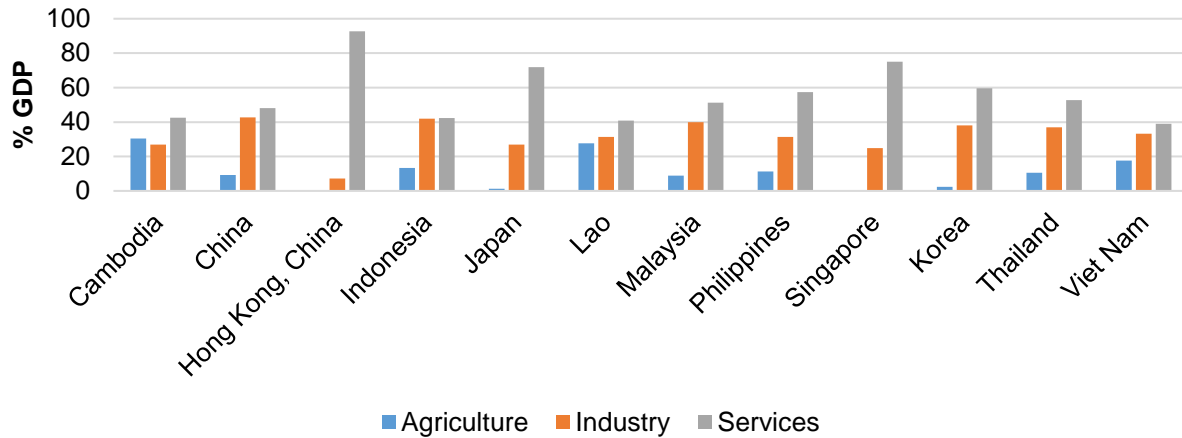


Source: World Bank Data

Note: Bubble size reflects size of economy

Over the years, agriculture has decreased as a percent of GDP in all Asian economies where industry and services are increasingly important. Small territories such as Hong Kong, China; and Singapore, which have strong finance and logistics service industries have almost no agricultural production and less industrial activity than the rest of the Asian economies. Although agriculture and industry are less important in these two economies, they have specialized and added value to their service offerings and have focused on being excellent places to do business in. On the other side of the spectrum, Cambodia and Lao have the largest percentages of agriculture to GDP while base level services still outweighs industry in terms of GDP and employment. The importance of the service sector to each economy is clear as services outweighs both industry and agriculture in all economies. As services are utilized in all sectors, and are increasingly exported, economies with significant added value, such as Japan and Korea, have thriving services sectors that support larger industries and value addition.

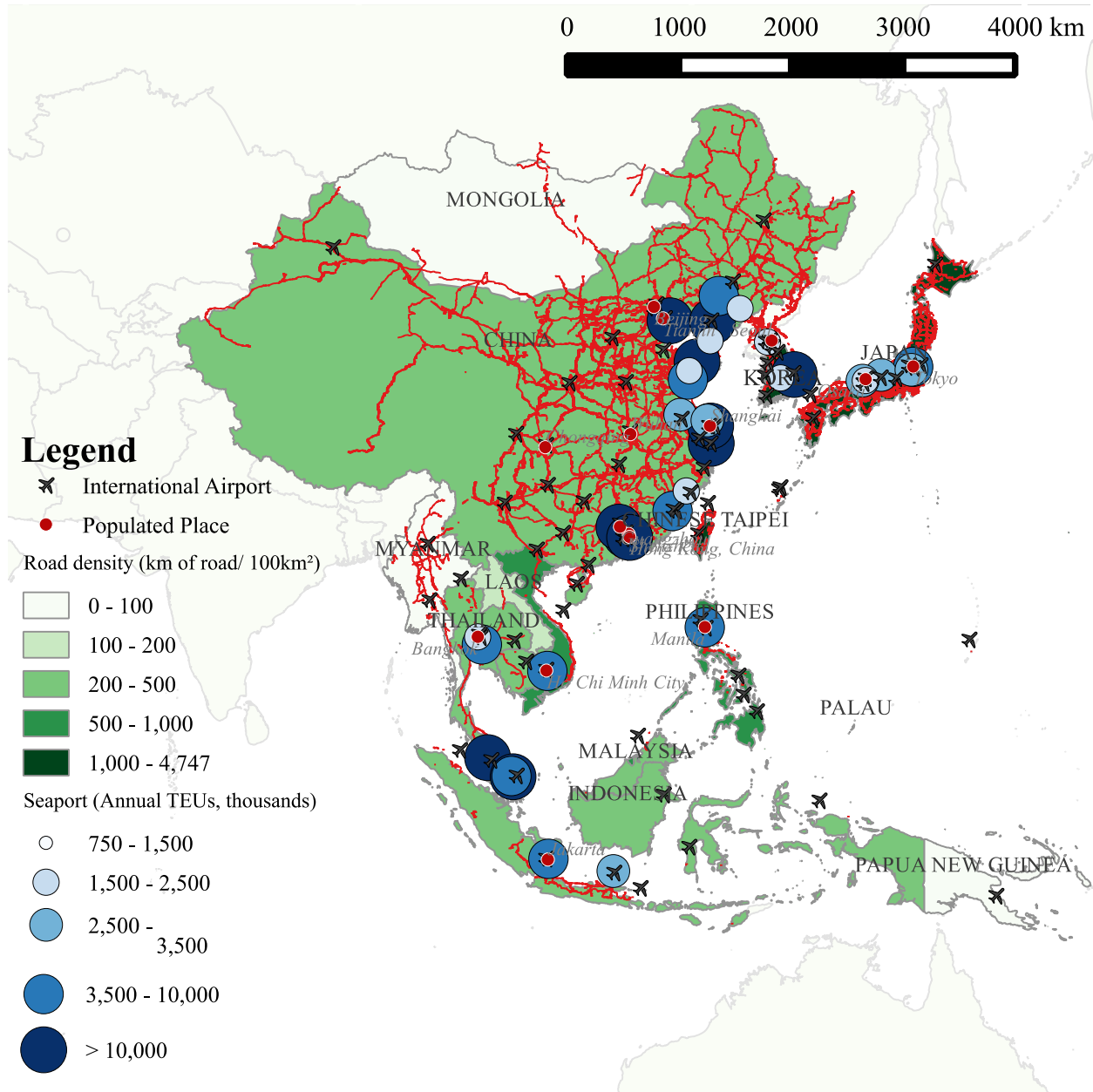
Structure of Economy 2014 (added value, % GDP)



Source: World Bank Data

GVCs and the tenants to improving GVC connectivity are responsible for a significant portion of Asia's modern economic growth and industrialization. As explained above, Japan led the charge of Asian GVC creation, followed by China; Chinese Taipei; and Korea incorporating a growing number of Southeast Asian economies. Even now, economies such as Myanmar, an economy that was mostly shut from international networks due to challenges with the ruling military junta, are increasingly connected to Asian GVCs. Thai companies are helping to build Myanmar's major industrial zone and port, Chinese companies supply a majority of consumer manufactured goods, Korean garment companies are looking to invest in garment factories, while the Japanese are growing in the oil & gas sectors. As Asia becomes increasingly interconnected, the economies will more heavily focus on comparative advantages and trade in goods and services to grow as a region. While there are many challenges that may negatively impact diplomatic relations and/or economic growth, companies are becoming more sophisticated, wages are on the rise, and trade agreements support the flow of goods between economies.

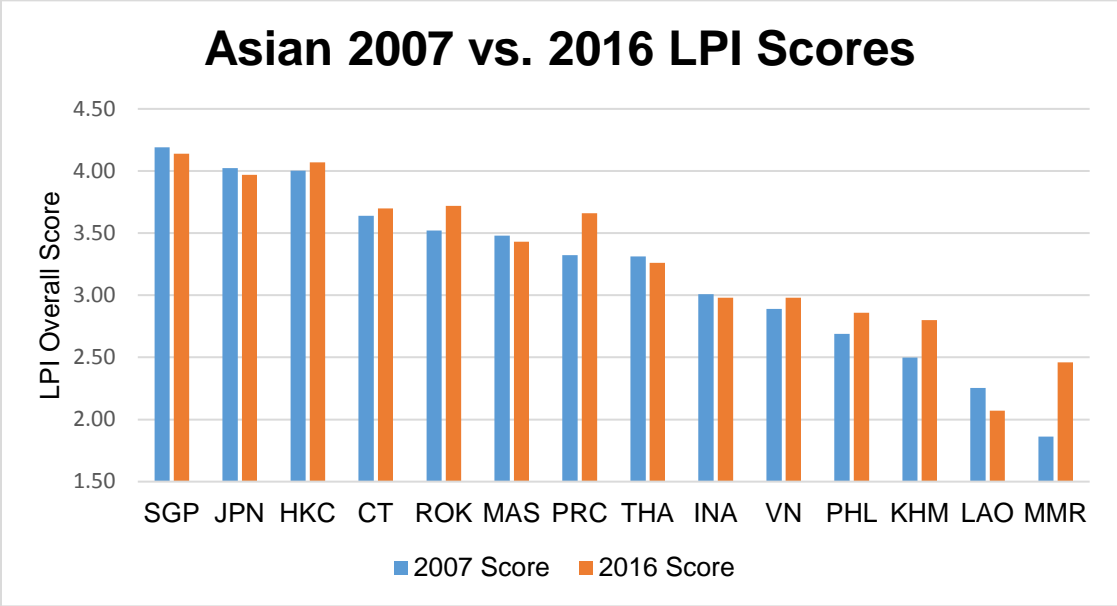
3.8 Infrastructure



The theoretical section of this report discusses the importance of infrastructure to GVC connectivity. Asian economies looking to better connect to GVCs are indeed making the investments into infrastructure to not only support economic activities and international trade, but also to improve efficiencies for their populations, stimulate tourism, and lift overall livelihoods. Infrastructure development and quality is highly correlated with per capita GDP. The table below highlights that richer economies tend to have better ranked *Logistics Performance*³ scores than

³ The Logistics Performance Index The LPI is an interactive benchmarking tool created to help economies identify the challenges and opportunities they face in their performance on trade logistics and what they

the less developed. This is not surprising as infrastructure projects are often expensive and require skilled engineers. While the least developed Asian economies are often known for horrible traffic, long dwell times at port, and challenges transporting freight longer distances, improvements are being made where Cambodia; Lao; Myanmar; and Viet Nam (CLMV) have all show increased their LPI scores. Much of this infrastructure development is fueled by other Asian investments and support facilities. Japan is well known for financing and building train systems across Asia. China is increasingly providing expertise in power plants and smelting. Korean companies work heavily in the shipping industry. Through international cooperation on infrastructure, Asian investors help improve infrastructure of the less developed economies which not only improves internal efficiencies for the receiving company, but also facilitates increased trade, investment, and GVC connectivity.



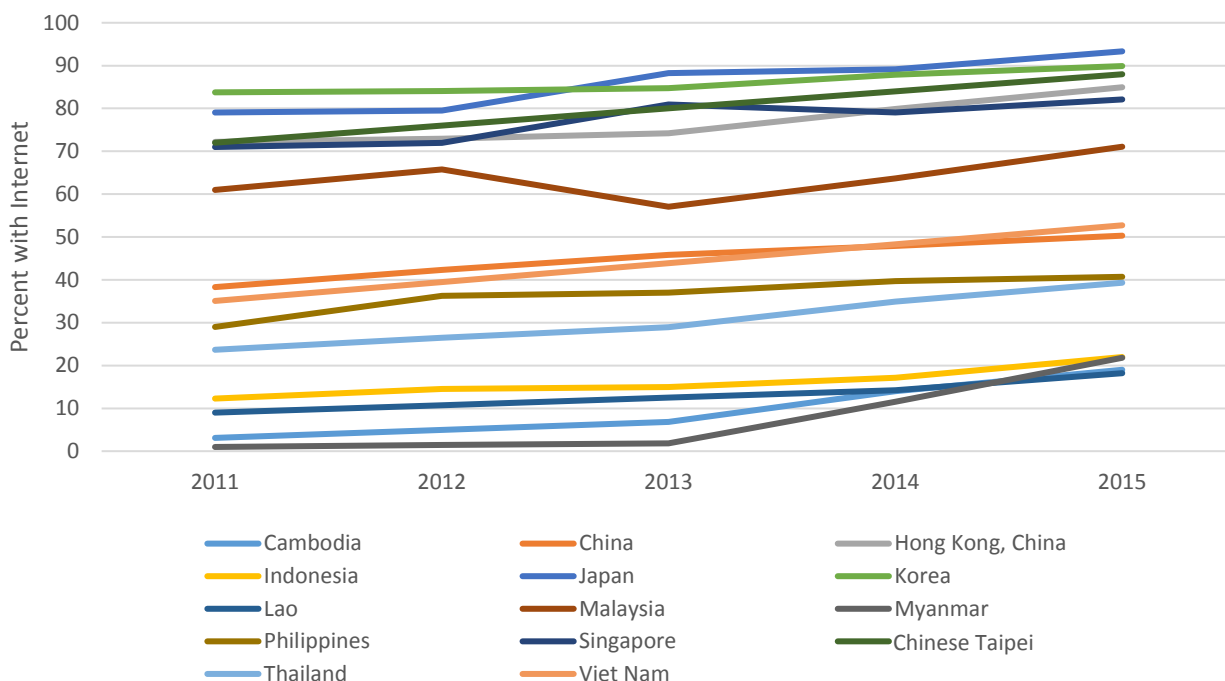
Source: World Bank Logistics Performance Index

Improvements to Asian internet infrastructure has also supported integration into GVCs. Economies such as Japan; Korea; and Singapore are some of the most connected economies on Earth with very high connection speeds. On the other hand, developing economies such as Cambodia, Lao and Myanmar are improving in their access to internet, primarily through mobile internet. Continued improvements to internet connectivity will support SME development as well as economies’ initiatives to improve institutions and promote domestic products abroad. Programs such as the ASEAN Single Window that looks to harmonize importation information in a single database can better facilitate economies looking to trade with ASEAN economies. Moreover, economies such as Thailand have developed an online trade database for the abundance of SME

can do to improve their performance. The LPI 2016 allows for comparisons across 160 economies. The LPI is based on a worldwide survey of operators on the ground (global freight forwarders and express carriers), providing feedback on the logistics “friendliness” of the economies in which they operate and those with which they trade. It measures performance along the logistics supply chain within an economy and offers two different perspectives: international and domestic.

products such as arts and crafts, snack foods, garments, etc. to clients overseas. This improved connectivity will support not only regional GVCs, but also connectivity to further regions like Latin America.

Percent of Population with Access to Internet



Source: International Telegraph Union

3.9 Institutions and Policies

Asian political and institutional differences are as diverse across Asia as the populations. With incredibly different belief systems, levels of development, abundances of human capital, and economic priorities, Asian institutions have varying degrees of capacity and efficiency. Similar to infrastructure, economies with higher per capita incomes typically have better managed institutions. Singapore, the economy with the highest per capita GDP in Asia, is also often ranked highly in numerous indices such as the World Bank Doing Business report. Myanmar, on the other hand, is ranked poorly on various indicators and hosts some of the lowest wages in Southeast Asia. Because the economy was ruled by the military for such a long period of time, many institutions, such as the banking system, did not meet international standards in any regard. As such, Myanmar is now working to formalize and improve their institutions to support the socio-political-economic development.

Improvements to any form of governance, especially those related to enhancing economic opportunities, support society along with economic potential. Asian economies can improve the

institutions, bureaucracy, and policies in any number of ways and that must be decided by respective economy's leaders given their unique needs and adjustments. While often politically sensitive and laborious to push reforms through vested interests and legal systems, any improvements to minimizing corruption, having a more stable political system, high quality regulation, strong accountability measures, and effective governance, will have positive impacts.

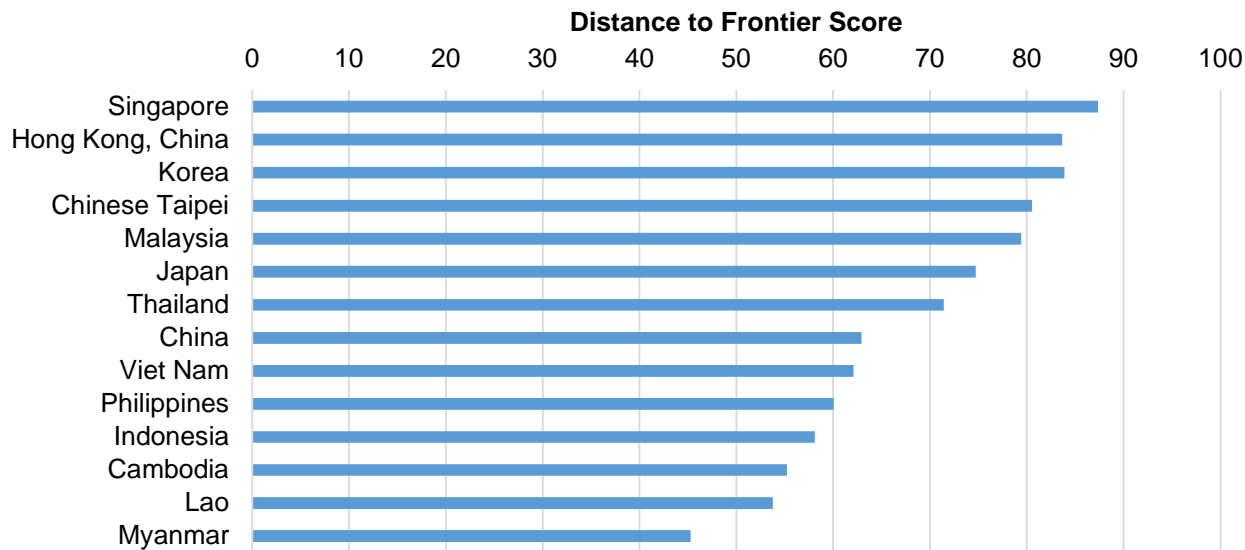
Rule of law, consistency, transparency, and numerous regulations and policies all have an impact on international trade, investment, and GVC connectivity. To rate and rank economies on their capacity to support and grow business, the World Bank puts out their annual *Doing Business*⁴ Report that gauges 189 economies' business regulatory systems and ranks them from best to worst. The report includes important indicators to not only local business entities, but also foreign investors. Each of the indicators in the report, especially the Distance to the Frontier score (aggregate score of all indicators) reflect a small portion on capacity to engage GVCs.

Starting a business, getting credit, paying taxes, trading across borders, enforcing contracts, etc. all have a substantial impact on domestic companies' ability to integrate into GVCs. These indicators are also very important to support SME development. While large conglomerates and multinationals often have the experience, capital, and necessary service providers (accounting, legal, advocacy, etc.) to work through legal and regulatory challenges, it is the emerging SMEs, the lifeblood of most economies that are most negatively affected by a challenging business environment. Thus, the *Doing Business* report is a good measure for public sector policy makers and international investors to identify where is best to invest given specific needs and probability of success as well as ways economies can become more attractive to foreign companies.

These *Doing Business* indicators are focused on commercial issues that public sectors can analyze given their current state of affairs and make tweaks for improvement. Today, many Asian economies use the report as a guideline on where they can focus to improve specific areas to support business. For example, Indonesia, which is currently ranked 109th in the report, has set the goal to make it to 40th. In order to reach this ambitious goal, the Jokowi Administration initiated thirteen economic stimulus packages which include measures to ease the process to start a business, improve permitting procedures, and enhance tax collection and the enforcement of contracts, along with a number of other initiatives. These facilitating measures do indeed seem to be having a marginal impact, albeit slowly, as the economy is expected to grow over five percent this year, up from 4.79 percent in 2015.

⁴ Doing Business measures aspects of regulation affecting 11 areas of the life of a business. Ten of these areas are included in this year's ranking on the ease of doing business: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency. Doing Business also measures features of labor market regulation, which is not included in this year's ranking.

Ease of Doing Business 2016



Source: World Bank Doing Business 2016

Foreign businesses looking to invest in Asia will often reference the *Doing Business* report to determine the optimal site for their Asian projects and see what challenges they may encounter when operating in respective economies. While overall market size, level of potential costs savings, and capacity to utilize specific products and services are the drivers of foreign investment, the *Doing Business* indicators can influence whether an MNC will indeed invest abroad and into which economy. As Cambodia is a comparatively small market with a relatively smaller population as well as being a challenging place to do business in, it has not received significant investments outside of the garments and energy industries. In order to stimulate further investment and better integrate GVCs, Cambodia should look to improve both public sector institutions as well as the *Doing Business* indicators to industrialize and diversify their economy.

3.9.1 Openness to Trade and Investment

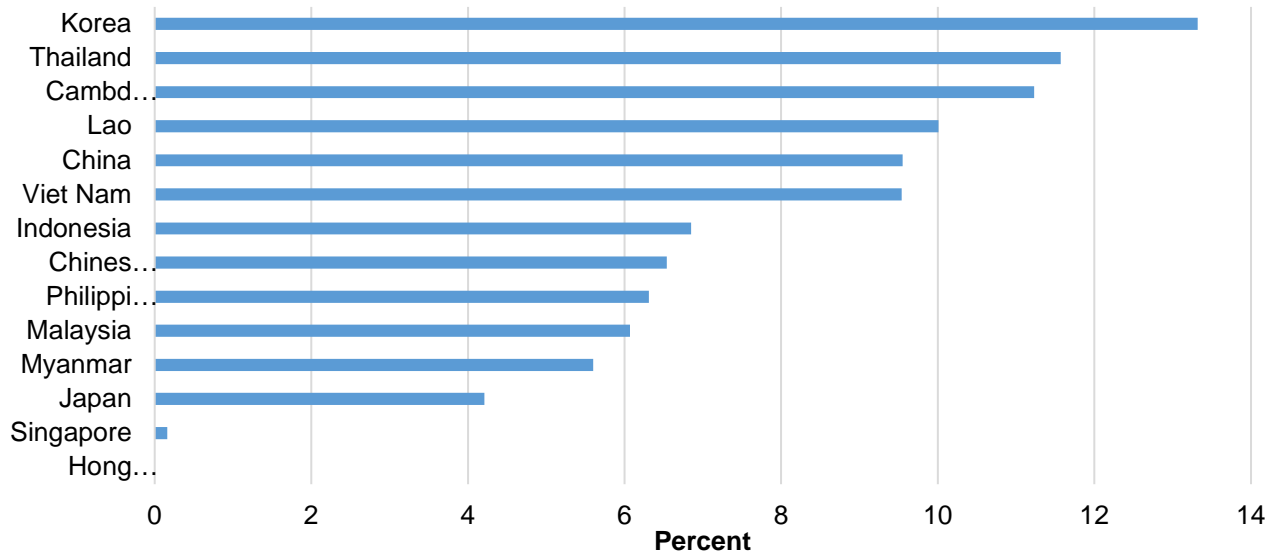
As explained in the theoretical section, openness to trade and investment is critical to GVC integration. The Korea's example used earlier highlights how trade and investment restrictiveness can impact an economy. By dissuading FDI and trade, it is not possible to effectively engage GVCs. With trade and investment restrictions, companies cannot or have challenges importing the intermediate products or utilizing the MNC technologies or capacities to grow. Over the past two decades, Asian economies have become increasingly receptive to both trade and investment. Tariffs have dropped over time with numerous trade partners while investors from around the world have entered most Asian markets to varying degrees (specifics on FDI in the FDI section). Although many Asian economies are still often prone to protect specific industries, such as agriculture, or discourage foreign investment into specific industries, the overall trend in Asia is for liberalization. Initiatives such as the ASEAN Economic Community that looks to turn Southeast Asia into a common market for trade and investment as well as multilateral free trade agreements

such as Regional Comprehensive Economic Partnership (RCEP) are reducing the costs to trade and investment and are increasingly integrating Asian economies into greater GVCs.

Tariffs are the primary tax on imports aimed at restricting foreign goods and favoring local products. Economies may levy tariffs on products to support infant industries, collect revenues, sustain commodity producers, or to simply keep out foreign products. Tariffs are counter to GVC theory that promotes trade at reduced costs to fuel efficiencies and global connectivity. Although tariffs may bolster local companies for a short period of time, they erode global competitiveness and access to the best or cheapest products. While tariff levels have decreased over time, a number of Asian economies still hold tariffs relatively high. As there are varying tariff lines across products, the data below presents the Simple Average Applied Most Favored Nation Tariff on all products across Asia. This data shows that economies such as Cambodia; Korea; and Thailand still maintain tariff levels averaging over ten percent. On the other hand, Hong Kong, China; and Singapore maintain almost no tariffs on imports, which supports these city-economies competence in trading and the import/re-export industries.

While tariffs may favor local companies over foreign products or supply revenues, they are actually taxes on consumers and manufacturers that utilize intermediate inputs in their production activities. Economies such as Japan that maintain relatively low tariffs and have FTAs with numerous economies (reference FTA section), can more efficiently import intermediate goods. As such, Japanese companies can outsource or offshore lower value added activities, import the necessary products or services and excel at higher value goods and tasks. An economy like Cambodia, on the other hand, with its tariffs above ten percent, is actually discouraging investment into added value industries. Cambodia does not produce many of the intermediate inputs necessary for a final product, thus companies looking to grow must import the bits and pieces necessary for the final export. In order to encourage FDI into the less developed economy, the public sector provides an assortment of investment incentives that reduce tariffs on imports of capital and raw materials, but companies are forced to work through the Cambodian bureaucracy whose institutions are ranked toward the bottom for effective governance.

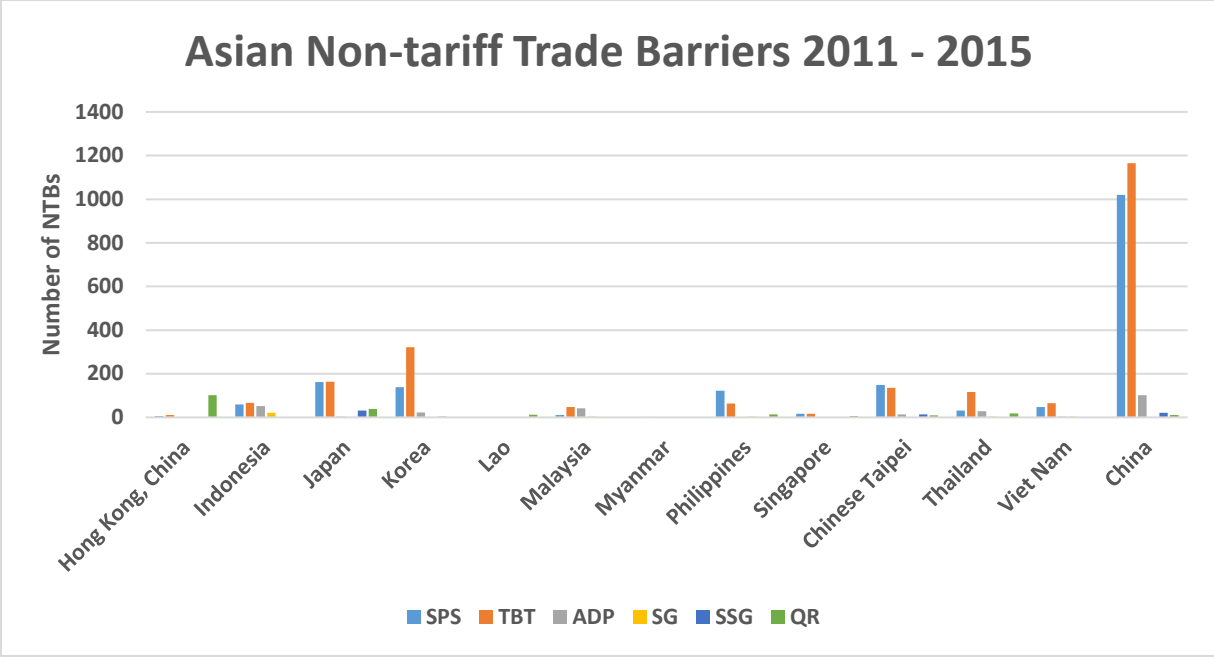
Simple Average Applied MFN Tariff (all products)



⁵Source: WTO International Trade and Market Access Data

Tariff reductions have indeed improved trade relations across Asia. Although average tariff rates have decreased over the years, non-tariff trade barriers (NTBs) such as quantitative restrictions, technical barriers to trade, sanitary and phytosanitary measures, etc. have expanded where economies try to support local industry while maintaining their World Trade and other FTA agreements. Non-tariff trade barriers are significantly more complicated to understand, track, and retaliate against as they are often wrapped up into local regulations and characterized as protecting populations or pushing industry to improve. As NTBs have grown in number and utilized by most Asian economies, so have the complaints from trade partners to the World Trade Organization (WTO). The graph below highlights the number of imposed measures on Asian NTBs from 2011- 2015. China has imposed the greatest number of NTBs on foreign products to protect local industry while small economies such as Lao and Myanmar, who have little manufacturing capabilities, have imposed very few. NTBs may not be all negative though as they can encourage upgrading, innovation or the utilization of higher quality/more efficient products. It is in economies' best interests to evaluate whether NTBs will improve overall competitiveness and GVC integration, or artificially support a few companies hold moderate monopolies on local industry.

⁵ Simple Average Applied MFN Tariff is calculated as the average of the MFN applied (as opposed to bound) tariff rates available at the Harmonized Schedule (HS) 6-digit product level in an economy's customs schedule reported as simple average.



6

Source: WTO Integrated Trade Intelligence Portal

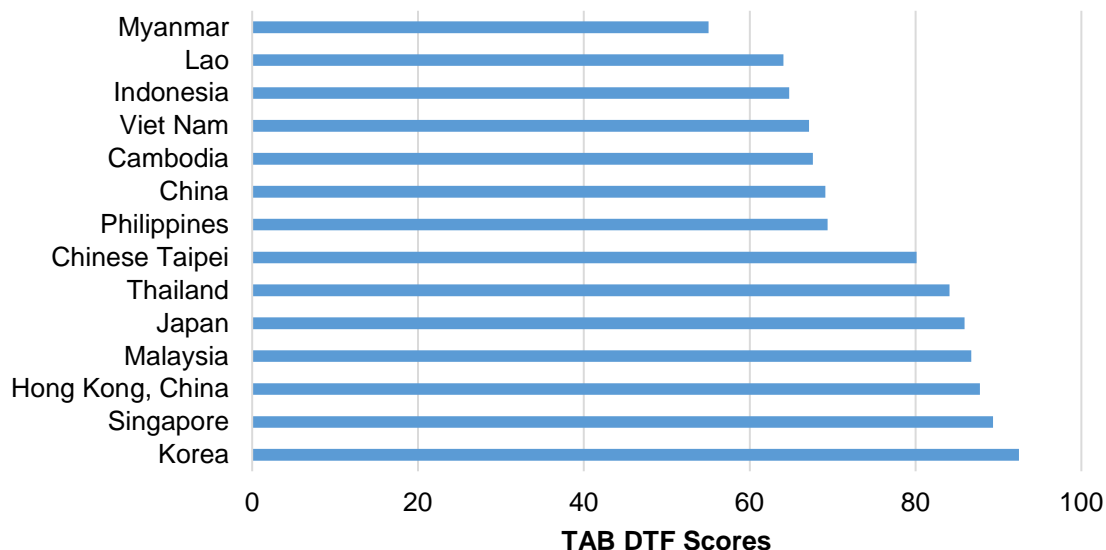
Aside from macro level tariff and NTB trade policy, local customs procedures and levels of infrastructure development impact the efficiency of trading across borders. Documentary and border compliance procedures as well as quality of domestic transport can inflate the costs and time necessary to import and export goods between economies depending on the efficiency of customs procedures and transportation options (discussed in the Infrastructure section). Efficiency improvements to cross-border trade can indeed reduce port dwell times, support multi-modal transportation, reduce labor and fuel charges for waiting for processes. Although efficiencies can be improved, economies still need to protect their borders to ensure illegal products are not entering the economy and that required taxes are paid. Not surprisingly, Asian economies with higher per capita GDP and governance capacities typically perform better in terms of trade across borders while the lesser developed economies with porous, yet inefficient borders, such as Myanmar, Lao, and Indonesia are plagued by inefficiencies as well as trade in numerous illegal products.

Neighboring Asian economies and regional initiatives are indeed trying to improve cross-border trade efficiencies. For example, the AEC has a number of programs to harmonize the paperwork necessary to bring goods in and out of ASEAN economies, facilitate multi-modal transport, and allow shipping trucks to cross numerous borders without having to stop at border crossing. Malaysia; Singapore; and Thailand have a pilot project in place to test the improved border

⁶ Non-tariff trade barriers enacted or in force from 2011-2015. Anti-dumping [ADP], Quantitative Restrictions [QR], Safeguards [SG], Sanitary and Phytosanitary [SPS] [Regular, Emergency], Special Safeguards [SSG], Technical Barriers to Trade [TBT]

procedures. It is hoped that the pilot will be a success and other economies will eventually join into the program.

Trading Across Borders Scores 2016

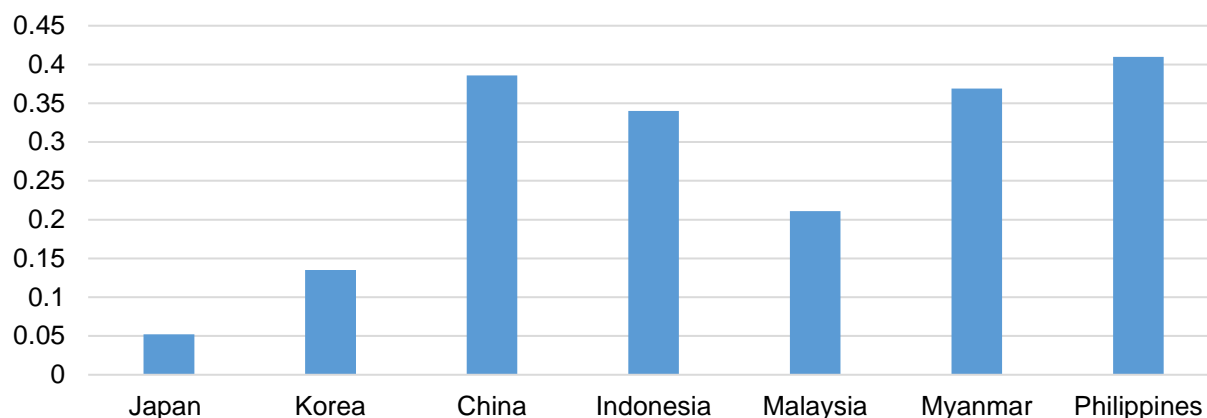


⁷Source: World Bank *Doing Business*

Asian economies looking to further develop and enhance competitiveness should be open and as non-discriminatory as possible to FDI. Economies like Indonesia have long been critiqued for their relatively protectionist foreign investment regime which excludes or limits foreign ownership in a number of sectors. Moreover, these foreign ownership levels are often changing, confusing investors on which sector, for how long, and in what capacity they are allowed to operate. This has stifled investment into the economy as a whole due to lack of certainty while dampening improvements to competitiveness as local companies are protected. While it is understandable that some industries must be regulated, this must be done in a transparent and consistent manner that maintains equality for both foreign and local investors. Openness to FDI can help bring in the investments necessary to support industrial and economic growth while also better linking economies to GVCs.

⁷ *Trading Across Borders* records the time and cost associated with the logistical process of exporting and importing goods. *Doing Business* measures the time and cost (excluding tariffs) associated with three sets of procedures—documentary compliance, border compliance and domestic transport—within the overall process of exporting or importing a shipment of goods. The most recent round of data collection for the project was completed in June 2015.

OECD FDI Regulatory Restrictiveness Index



⁸Source: OECD FDI Regulatory Restrictiveness Index

Note: 0 determines totally open to FDI and 1 not open at all

3.9.2 Free Trade Agreements

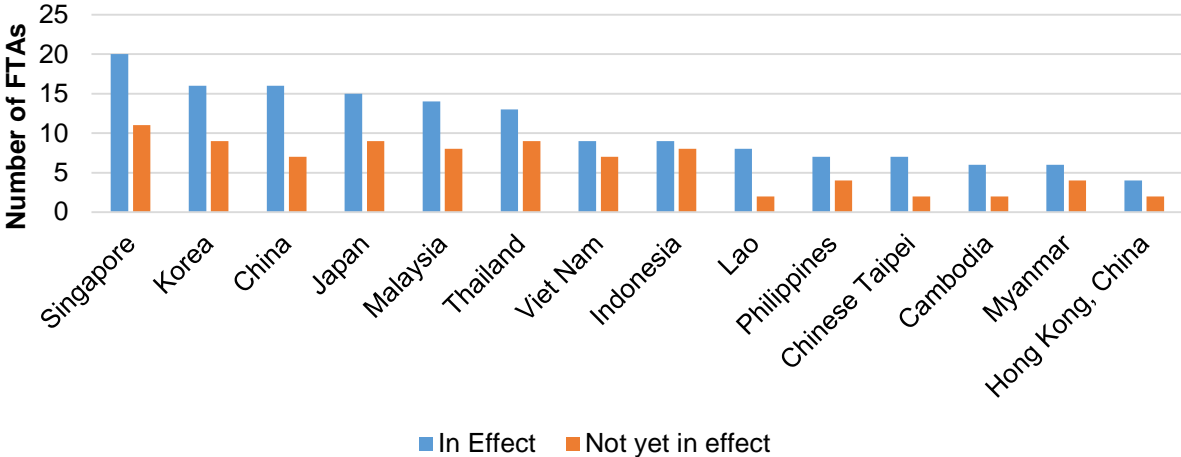
The number of free trade agreements from and between Asia, including bilateral and multilateral agreements, are proliferating rapidly. Today, there are a large number of signed agreements already in effect, with some 150 agreements working and more than 80 more under negotiation within the Asia region of this study (ADB 2016). These preferential trade agreements cover more than just trade in goods, but also a wide range of trade related facilities such as trade in services, investments, technical barriers to trade, intellectual property rights, and sanitary and phytosanitary measures (UNESCAP 2015). These “next generation” agreements, such as RCEP, go beyond WTO commitments and aim to harmonize standards and regulations between trade partners, either bilaterally or in a block of economies. Aside for facilitating trade, FTAs are a diplomatic platform for public sectors to connect commercially and instigate trade and investment. Take for example the Peru-Thailand FTA. Although the two economies have not had a very deep trade relationship in the past, the FTA will stoke interest of respective companies and may potentially support business growth and development between the two emerging economies.

Although FTAs are incorporating an increasing number of Asian economies into the web of GVCs, they can have both positive and negative impacts. FTAs have a variety of complications where agreements may include some items and facilities and exclude others. Moreover, bilateral and multilateral agreements may conflict or overlap with each other, especially in terms of rules of origin designations. This can complicate companies’ understanding of the benefits to utilizing the

⁸ The FDI Index gauges the restrictiveness of an economy’s FDI rules by looking at the four main types of restrictions on FDI: foreign equity limitations, screening or approval mechanisms, restrictions on the employment of foreigners as key personnel, operational restrictions, e.g. restrictions on branching and on capital repatriation or on land ownership

FTA, how to engage a specific FTA, and how public sector employees administer FTA processes throughout the bureaucracy. This was expressed during interviews with private sector stakeholders during the research for this report. Numerous company representatives, especially those from SMEs, stated that they do not utilize respective FTAs either because they did not know of them, the benefits to the FTA were not clear, or the paperwork was too complicated. As such, they traded with international partners as if there was no FTA in place, but was still able to find customers and maintain competitiveness.

Asia Free Trade Agreements (2016)



Source: ADB Asia Regional Integration Center – Free Trade Agreements

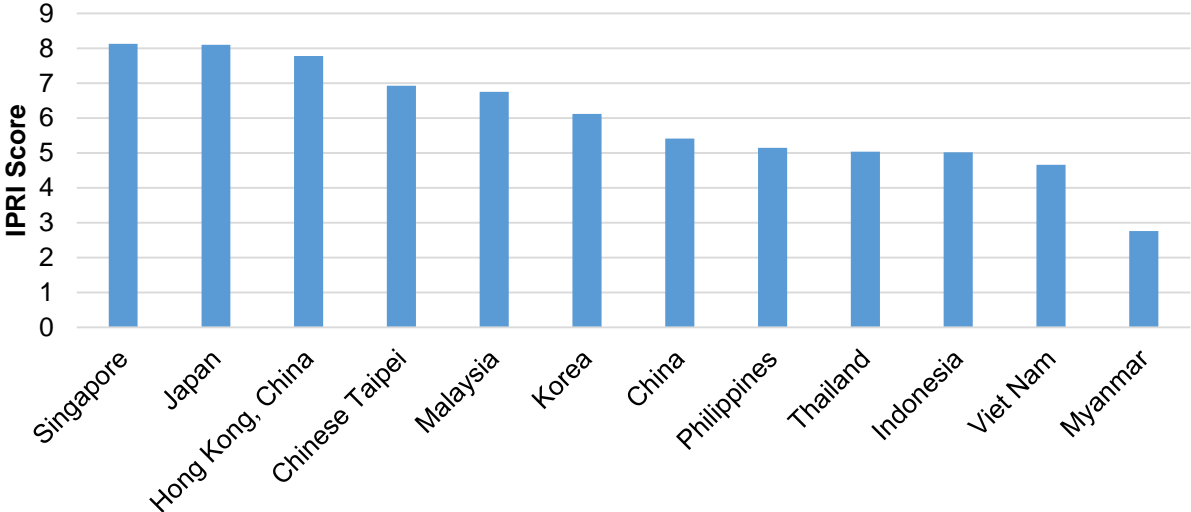
Past research shows that there is no correlation between the number of FTAs an economy may have and the share and expansion of trade under said agreements. There are cases where economies with fewer FTAs have a greater share in economies with the agreements (UNESCAP 2015). This could be due to overall company competitiveness or complications involved with the FTAs themselves. The UNESCAP Asia-Pacific Trade and Investment Report 2015 states “While in many cases the success of a free trade agreement can only be achieved by the efforts of the business sector, other forms of integrated markets require a top-down approach and a firm political commitment to integration, including a willingness to give up some (or much) policymaking autonomy in areas of common interest to all members.” Thus, it is incumbent on the private sector to continue upgrading and innovating to maintain and build global competitiveness while respective public sectors must facilitate a conducive trade environment to not only export domestically produced goods, but also imports the required inputs that go into final products.

3.9.3 Property Rights

Strong property rights are integral to foster innovation and upgrading in the modern global economy. It is necessary to protect the efforts and provide incentive of those conducting R&D and advancing industry. Without incentives, it is unlikely that large numbers would continue to innovate and supply to global markets if protections were not given. Unfortunately, assigning, administering, and enforcing property rights can be quite challenging in practice, especially in less

developed economies with poor institutional development. Knowledge based products and intellectual property, which are ‘non-rival in use,’ are especially prone to property right infringements as they can be used repeatedly and at the same time (IPRI 2016). The globalized world and GVC connectivity makes intellectual property right management more important today than ever before. With the fast and easy transfer of data, social media, hackers, etc., intellectual property can be taken and distributed very quickly. It is incumbent on each economy to not only protect the intellectual property of their own innovators, but also provide reciprocal protection to others to facilitate the GVC of knowledge.

International Property Rights Index



Source: International Property Rights Index 2016

Asia is commonly seen as having less respect for intellectual property (IP) in comparison to Western economies (Reid 2012). There are a large number of IP infringement cases across Asia where China is often seen as one of the most profuse violators of international IP laws. Although China has indeed had numerous IP cases over the years, the lesser developed economies of Southeast Asia infringe on IP rights as well, although with varying capacity to obtain and utilize differing types of IP. Stealing IP can indeed help a few stakeholders generate revenues more quickly and usually for a relatively short period of time, but these thefts dissuade FDI from knowledge based companies and deter local innovation, which can have a greater negative impact on society in comparison to the few that benefit. China, as it works to shift its economy into more added value and knowledge based products, along with the more developed economies of Asia, realizes the importance of IP and have taken steps to protect both domestic companies as well as foreigners supplying products in China. Now, economies such as Hong Kong, China; Japan; and Singapore are ranked at similar levels to the developed Western economies in terms of IP protection. As Asian economies continue to develop and diversify the mix of IP products, they will more heavily enforce IP protections domestically and in the economies they operate.

Harmonization of international IP rights and adequate enforcement will further develop GVC integration. As the level of awareness of IP issues improves as well as trust between trade

partners, companies from across borders will enhance the sharing of knowledge and products, which is in essence GVC integration. Asia, with emerging innovation centers, competitive products, high tech manufacturers, and a diversity of contributing intermediate inputs are critical to fuel modern economic growth and GVC connectivity.

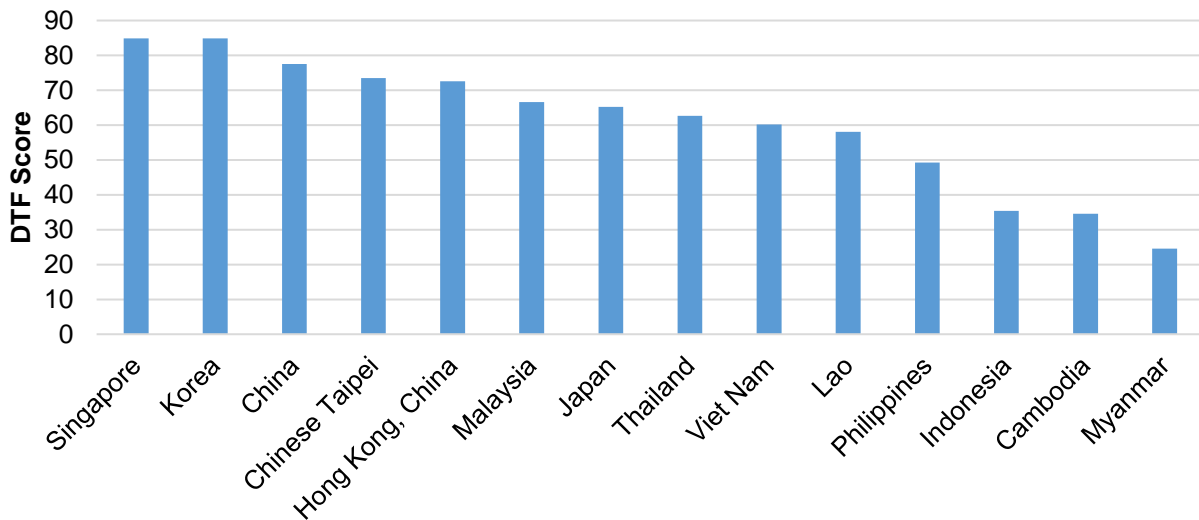
Take the giant Chinese Taipei manufacturing company, Foxconn, for example. Foxconn is a contract manufacturer that specializes in the assembly, and increasingly the design and engineering of numerous electronic products such as phones, projectors, computers, etc. As Foxconn works across products lines and for customers from around the World, it is of incredible importance for Foxconn to maintain the IP of its clients. If Foxconn were to infringe on this incredibly valuable IP, it is likely their entire business model would collapse. That being said, Foxconn is able to see what the challenges and potential improvements can be made to enhance their client products based on their experience across numerous product lines, adding additional value. Today, Foxconn has factories in Asia, Latin America, Europe, and the United States. Foxconn epitomizes a company intimately integrating into GVCs. By specialization, import and utilization of intermediate inputs, and focusing on competitive advantages, Foxconn has grown to be one of the largest manufacturing companies on Earth.

IP is also very important to support SME development. SMEs across Asia are innovating numerous products and services, but are often unsuccessful in commercialization due to lacking IP protections. Often is the case that a small company will come up with an excellent idea or pilot product, only to be snatched up or blocked out by a larger company or individual with significantly more money, power and influence. With improved IP rights in developing Asian economies, entrepreneurs and SMEs would have greater incentive to establish their own businesses and continue innovating as they grow their product and customer base.

3.9.4 Enforcing Contracts

Consistent contracts and the ability to enforce them are critical to economic development, attraction of FDI, and competitiveness to excel in GVCs. Without a firm understanding of what can and cannot be done and directions on how to abide by the law, businesses will not be able to grow to a sufficient level to compete globally. A strong judiciary backed by predictable and accessible rules and regulations support the foundation for businesses to prosper. Economies with better institutions tend to develop more quickly while a stronger judiciary is seen to support the development of SMEs, foster innovation, attract FDI, and garner tax revenues (World Bank 2016). The sanctity of contracts is incredibly important, especially when working with Western investors who place significant trust on contract law. While contracts may not be the norm or seen as binding in some Asian economies, they are indeed critical to better integrate into GVCs.

Enforcing Contracts Score



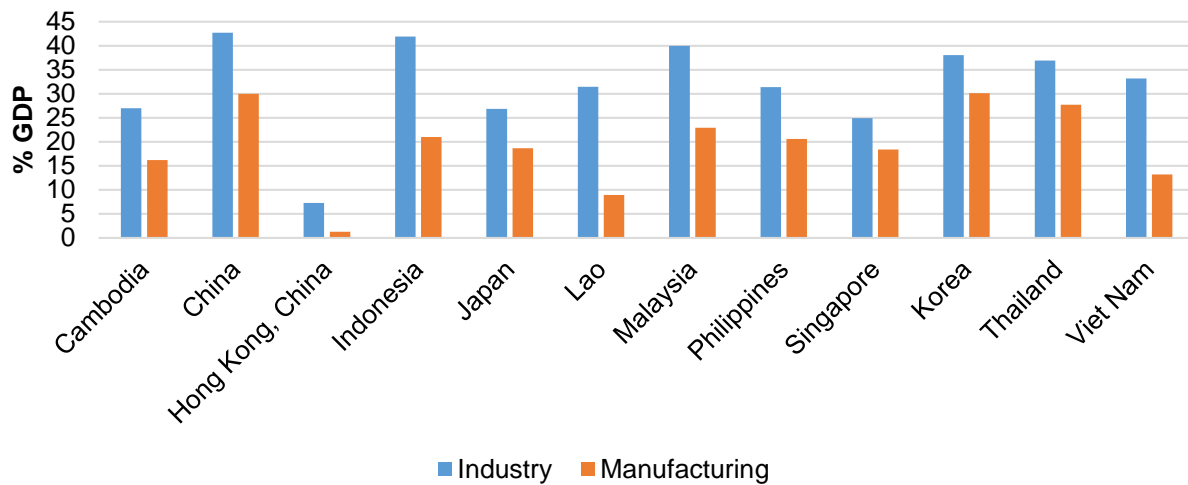
Source: World Bank Doing Business 2016

Asian economies that have stronger contract enforcement tend to be better connected into GVCs and often supply more sophisticated goods and services than those economies with less regard for contractual law. Contracts are necessary to protect intellectual property rights and business transactions. As such, companies in economies with strong contract enforcement hold higher levels of confidence that their business interests will be upheld by the law and not manipulated by outside stakeholders looking to cause conflict. Moreover, contracts can be harmonized across borders with other trade partners to facilitate trade and investment, providing the legal foundation for GVC relationships.

3.10 Industry

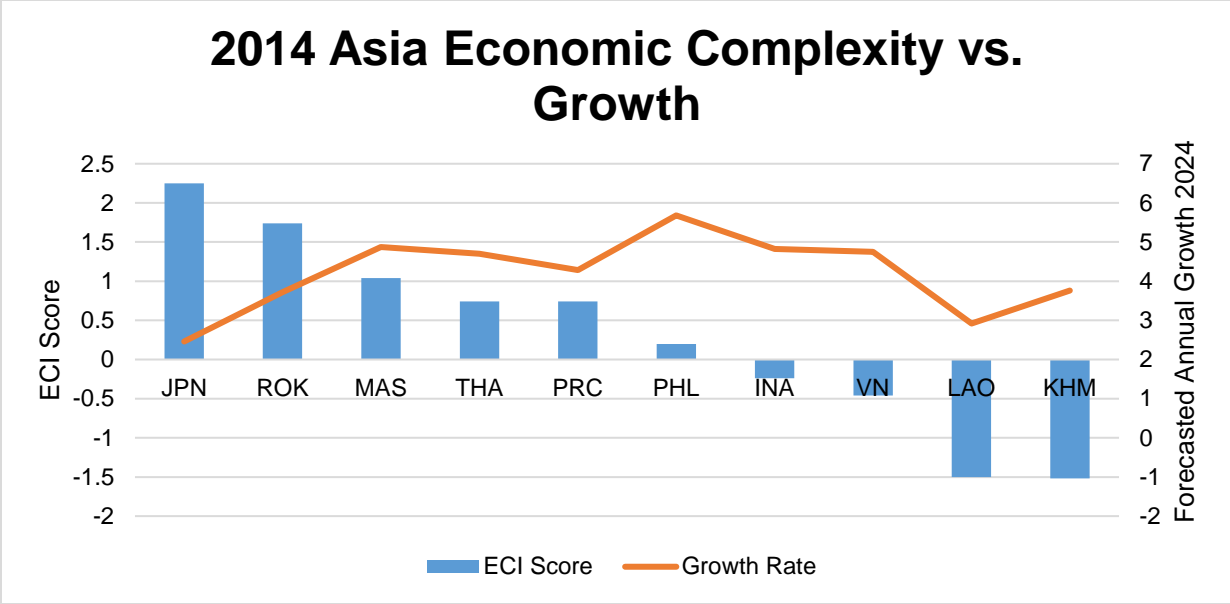
Asian industries are increasingly complex and progressively interconnected. Today, Asia is the manufacturing center of the world, producing a wide range of products from basic goods to advanced technologies. Japan; Korea; and increasingly China supply a large proportion of global added value industrial products such as vehicles and components, electronics, and machinery. Middle income economies such as Malaysia and Thailand, which have industrialized over the past couple of decades and become too expensive for low cost manufacturing, are working to find niche industries to excel in. Both economies now manufacture and supply products such as semiconductors and computer parts along with downstream products stemming from their strong commodity base. The less developed economies are still struggling to industrialize where Lao has very little manufacturing and is dependent on the mining and energy sectors while Cambodian industry is dominated by low value garment manufacturing.

2014 Industry and Manufacturing as a % GDP



Source: World Bank Data, 2014 China data from Tractus calculations based off 2013 manufacturing growth rate of 9.4% reported by National Bureau of Statistics of China

Besides for Japan and Korea, Asian industrialization grew out of GVC connectivity. As explained in the Asia Introduction section, Japanese companies and later Chinese Taipei's and Korean firms invested or outsourced business activities to China and Southeast Asia to generate cost savings, enter new markets, and gain access to commodities. While FDI was flowing into the emerging Asian economies, domestic industry flourished in tandem. While only a small proportion of local companies could work directly with MNCs, the investment inflows and increased internationalization indirectly sparked additional industry and business opportunities. As incomes continue to rise, so does the consumer classes and sophistication of local businesses. Asia region has emerged as a complex industrial powerhouse.



⁹Source: Atlas of Economic Complexity

Economic complexity and sophistication is based on an economy’s ability to hold and combine knowledge which emerges in productive output. The challenge on both ends of the spectrum is that economies with low levels of complexity (Cambodia and Lao) tend to have few opportunities available while the very complex economies (Japan and Korea) tend to have few remaining opportunities because they already engage in a large proportion of production activities that they are competitive in (Hausmann 2011). Economies with intermediate levels of complexity, such as Indonesia; Philippines; Thailand; and Viet Nam, have the most opportunity to become increasingly complex, add value, and grow the overarching economy. Although each economy differs in comparative advantages, natural resource endowments, and level of human capital development, each have room to improve their business environment and overall capabilities to grow.

Asia is so diverse in economic and industrial complexity which offers opportunities for domestic specialization as well as lead economies, such as Japan and increasingly China, to enhance RVCs and third-economy industrialization. Trade and FDI, capital, technology, skills, and new products introduce and often new production hubs in a number of Asian economies as part of GVCs. Through Asian economic cooperation, the region sources commodities and intermediate goods, ships to assemblers, and exports finished goods. By specializing in tasks rather than full production lines, Asia has emerged as the most competitive region with the greatest number of

⁹ The Atlas online is a powerful interactive tool that enables users to visualize a nation/economy’s total trade, track how these dynamics change over time and explore growth opportunities for more than a hundred economies worldwide. The Atlas is used by investors, entrepreneurs, policymakers, students and the general public to better understand the competitive landscape of economies around the globe. For any given economy, The Atlas shows which products are produced and exported; The Atlas can then use this information to suggest products a nation/economy could begin manufacturing in order to fuel economic growth. As a dynamic resource, The Atlas is continually evolving with new data and features to help analyze economic growth and development.

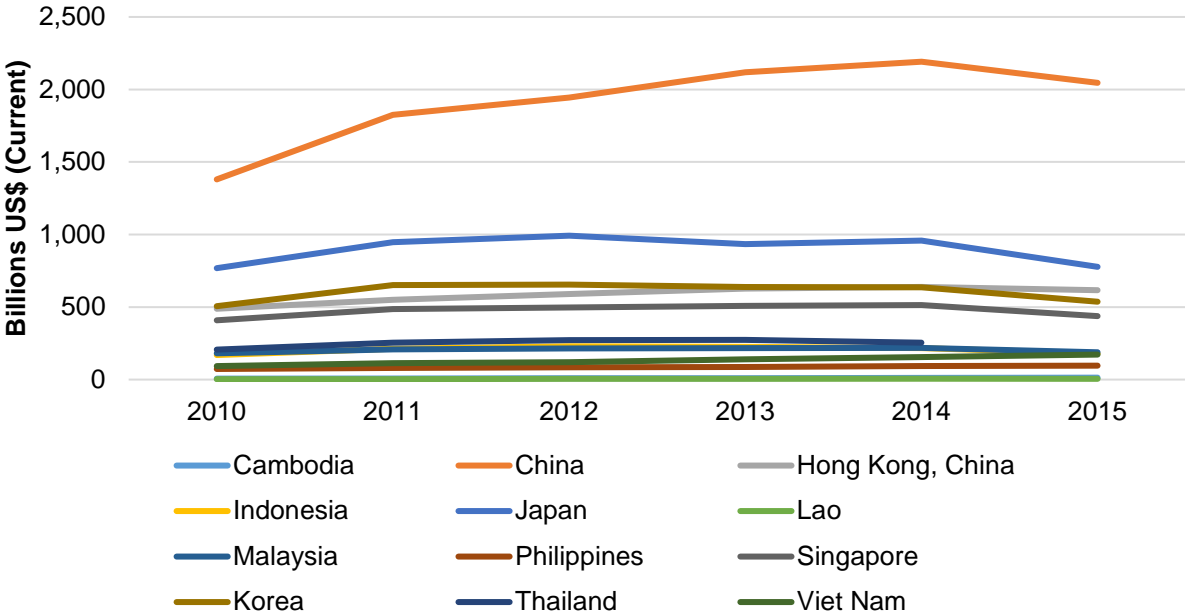
capabilities. The challenge for Asian economies now is on maintaining and/or upgrading to compete in an increasingly competitive and volatile global market place. With the rapid innovation and deployment of new technologies, shifts in demand of commodities, and improved access to global products, economies must foster a conducive business environment to grow industry and opportunities for respective populations.

3.11 Trade and Foreign Direct Investment

3.11.1 Trade

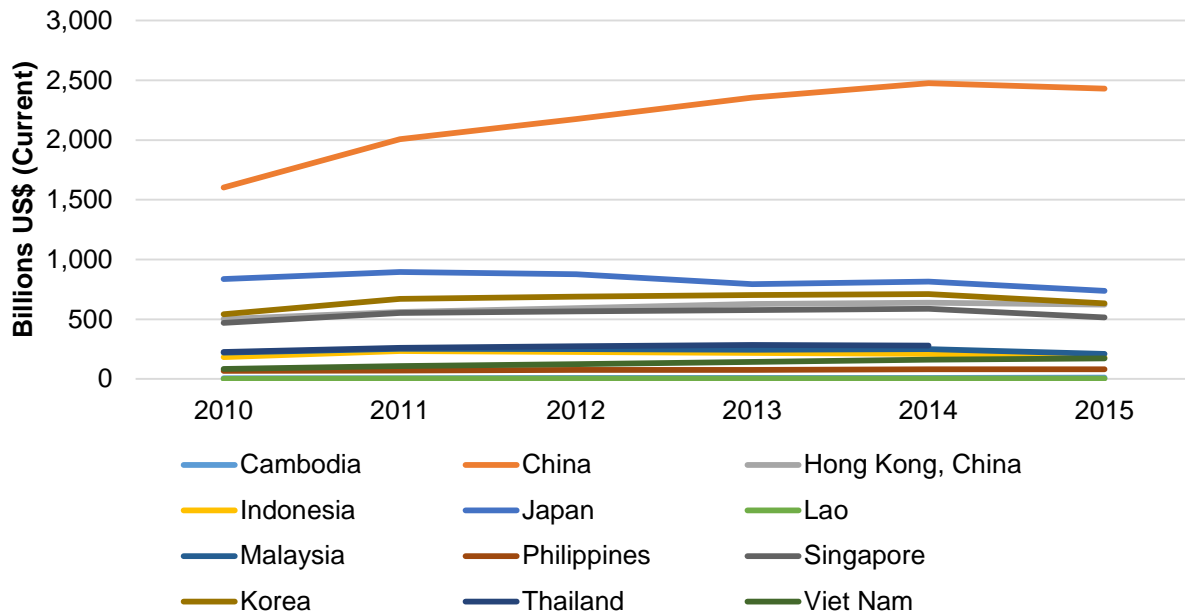
Asian gross imports and exports with the World have grown incredibly over the past thirty years as the region has evolved and increasingly incorporated into GVCs. While trade flows across the World have grown at impressive rates, intra-regional trade is increasingly important. Intra-regional trade now accounts for 35 percent of total global exports and companies are looking primarily at near market expansion rather than growing in traditional western markets. Intra-regional trade has increased by over 100 percent over the past decade where Asian companies from both developing and developed economies are trading, investing and innovating to lift added value and grow competitiveness. Although Asia experienced impressive growth, it has been muted since the 2008 global financial crisis, besides for China, which is facing headwinds now.

2010 - 2015 Asian Imports



Source: World Bank Data

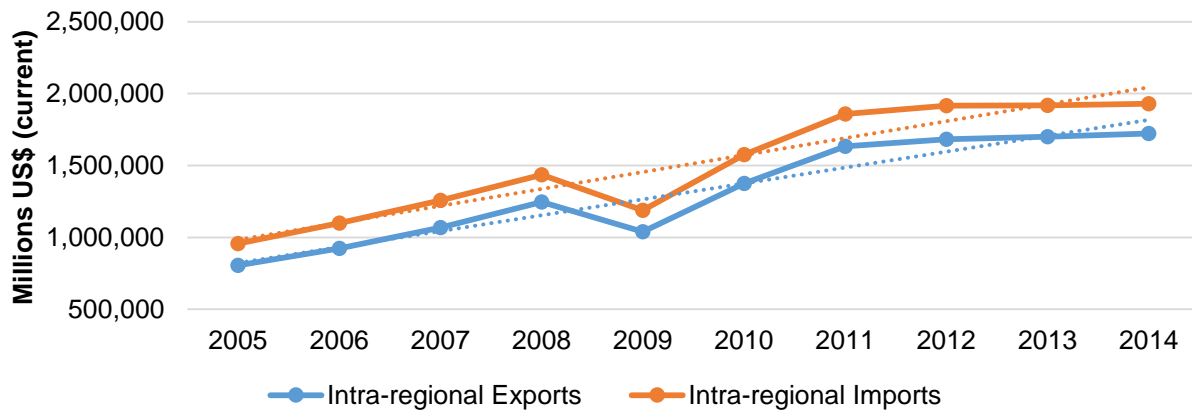
2010 - 2015 Goods and Services Exports



Source: World Bank Data

Although the Chinese economy is not growing as quickly as it was before, Chinese market liberalizations following the opening of the economy sparked a surge in international and regional trade, which has bolstered trade with the rest of Asia as RVCs continue to strengthen. China's incredible demand for all types of commodities as well as intermediate goods for assembly operations supported not only the extractive industries of Asia, but also created opportunities for other manufactures of specialized products to supply to and source from China. As such, most of Asia region grew at impressive levels by incorporating into China's value chain. While China's development over the past twenty years supported Asian economic growth, it is currently posing challenges as the economy slows. Asian economies that were dependent on China commodity imports, such as Indonesia, as well as suppliers of intermediate and finished goods are experiencing reduced demand. Moreover, economic challenges in the European Union and limited growth in the Americas cannot pick up demand for excess supply. Thus, companies will need to find new customers or innovate to enhance product offerings.

ASEAN plus China; Japan; Korea Intra-regional Trade



Source: UNCTADSTAT

Industrialized economies such as Japan and Korea, import a variety of commodities, intermediate products for a range of consumer goods, support local companies' production processes, and then export a diversity of added value and finished goods. Based on the theories of economic complexity, it is more difficult for these advanced economies to find new opportunities as they are at the pinnacle of economic development. Upgrading and product diversification now takes significant R&D or process improvements and then these new products need to be socialized to locals and the World. Moreover, other competitor advanced economies are looking to excel at the same time, making the competitive landscape quite challenging. Thus, it is difficult to increase the number of exports from these high cost, albeit added value, producing economies. While exports from Japan or Korea itself may not be increasing, exports from both Japanese and Korean companies in third economies are on the rise, contributing to these other economies' export figures where some profits are repatriated back home. For example, Toyota and a number of other Japanese automotive companies have large operations in Thailand. Due to Thailand's auto production capabilities from Japanese expertise, the economy has emerged as a significant exporter of one ton pickup trucks, supplying not only the Asia region, but also reaching other geographies such as Latin America.

Commodity rich economies such as Indonesia and Malaysia are the largest global exporters of palm oil, with significant exports of petroleum and other agricultural products. Indonesia is one of the most natural resource abundant economies on Earth, but has not added significant value to their natural resources where most have traditionally been exported in raw form. Aside for palm, Indonesia is a large exporter of lumber, coal, and a diversity of minerals. Due to the China slow down as well as an export ban on unprocessed minerals, Indonesia's exports have declined over the past couple of years. On the import side, Indonesia brings in a wide diversity of goods from agricultural products such as soybeans as well as manufactures such as electronic goods, components, and capital goods as local manufacturing has not kept up with competitor economies. Malaysia, on the other hand, strives to add value to its exports and imports more intermediate goods and higher value consumer goods. As a strong middle income economy,

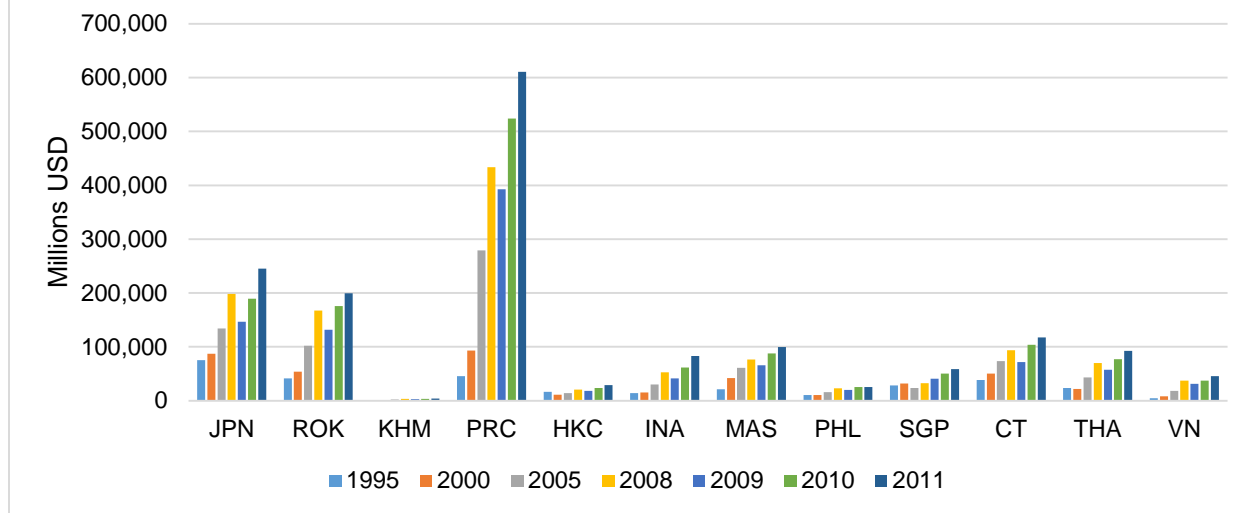
Malaysia is attempting to evolve its economy by going into more high tech industries to export to the region while bringing the components that contribute to these added value industries.

The less developed economies of Asia such as Cambodia, Lao and Myanmar have less complex trade flows. Each economy typically exports raw commodities and light manufactures and imports the range of consumer goods and capital necessary to support growth. In both Cambodia and Lao, a large portion of manufactures are owned and operated by foreign Asian economies. Chinese companies are large investors in Lao while Chinese Taipei's and Korean garment manufactures operate in and export from Cambodia.

Due to the levels of development, diversity of product offerings, and increasing inter-connectivity, economies and companies are becoming more specialized and trading in intermediate products. This intermediate goods trade has been a boon for most Asian economies as manufacturers can import products they do not have a competitive advantage in and focus on respective capabilities. As the figure below shows, intermediate goods trade has grown at impressive rates since 1995 for all Asian economies, but none as much as China.

Although China has grown to be the largest exporter of manufactured goods, this is due to the economy also being the largest importer of intermediate products. China focused in low value manufacturing and assembly operations to spark industrialization and employ large portions of society. As an assembly economy, China needed to bring in all the bits and pieces that contribute to the final goods the economy exported. By relying on other economies' capabilities in intermediate goods and focusing on their competitive advantage in labor (population over 1.3 billion), China was able to grow to become the World's second largest economy and is now attempting to evolve into more added value production processes. Although China is the most profuse importer of intermediate inputs, all other Asian economies have increased their import and utilization of intermediate products to support a diversity of industrial sectors. By engaging RVCs and GVCs, companies are able to effectively trade to source the highest quality or lowest cost goods to supply respective products.

East and Southeast Asia Intermediate Goods Trade



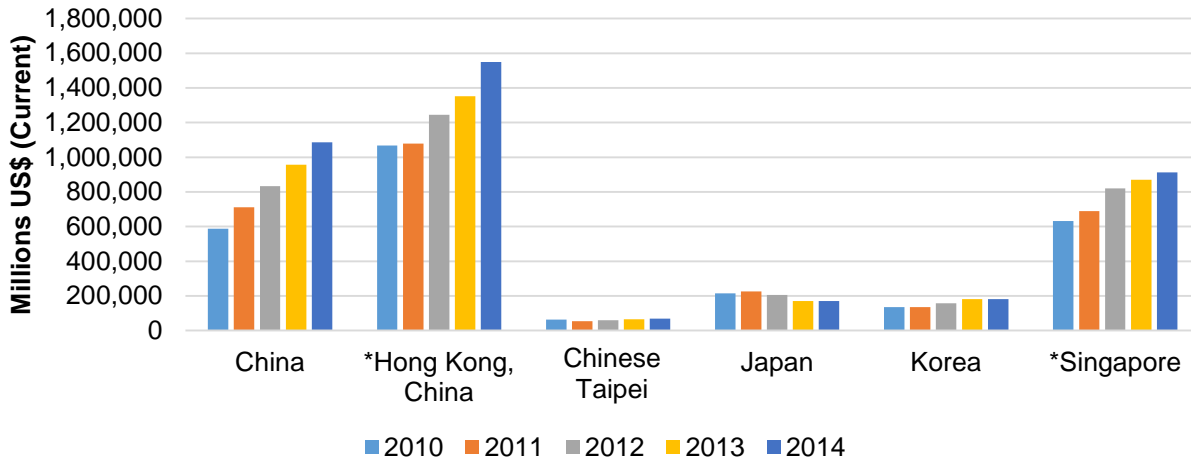
Source: OECD Trade in Value Added (TiVA)

Percent Change 1995-2011: JPN = 226%, KOR = 382%, KHM = 1,018%, CHN = 1,232, HKC = 77%, IDN = 492%, MYS = 144%, PHL = 107%, SGP = 208%, CT = 293%, THA = 956%, VNM 955%

3.11.2 FDI

Investments to Asia region over the past decade surpasses investment into any other region. These investment flows, from both the West and intra-Asia fuel GVC connectivity and economic growth. FDI supports the industrialization of less developed economies, enhances current industries that need capital or technology, offers opportunities for human capital development, creates jobs, and brings a number of indirect benefits. China has been the largest recipient of FDI flows as foreign companies look to access the large and increasingly wealthy population while also seeking cost savings for production processes. Although the data below shows Hong Kong, China FDI outweighing China, this is due to Hong Kong, China being a conduit for investment flows to mainland China and other Asian economies. The same goes for Singapore, where Singaporean FDI inflows surpass investment to even the largest Southeast Asian economy, Indonesia. As Singapore is a relative tax haven with the most sophisticated financial products in the region, gross numbers are inflated as real FDI often flows out to the rest of the region.

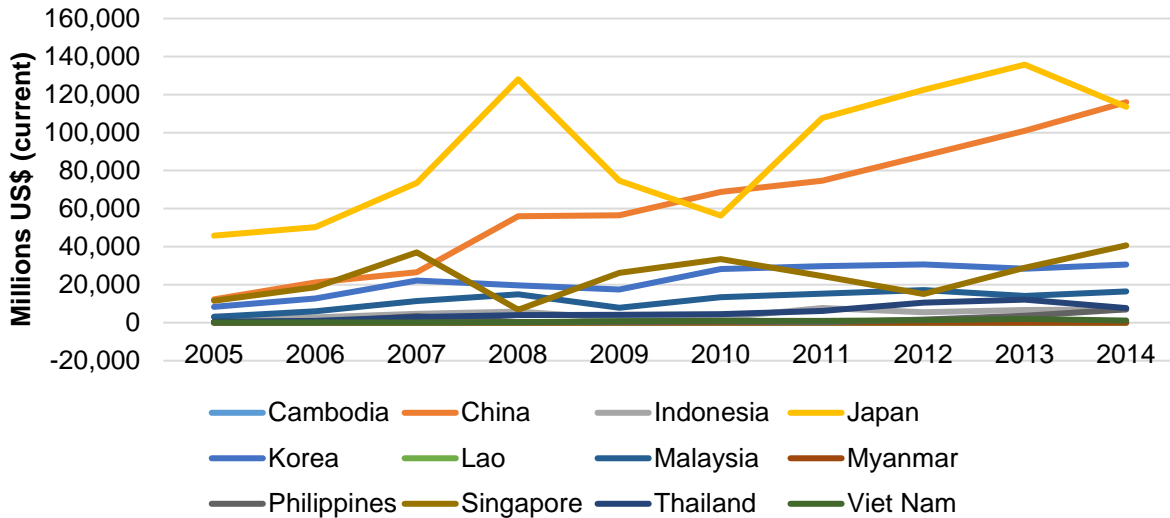
Asian Higher Income FDI Stock



Source: UNCTADSTAT

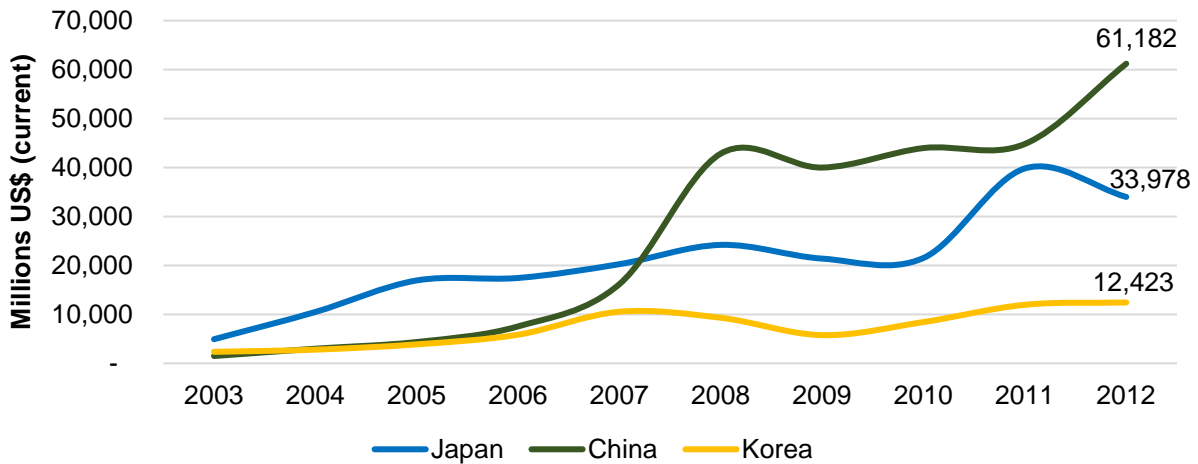
Japan and Korea receive far less FDI than China; Hong Kong, China; and Singapore as both economies are relatively more protectionist to local companies, foreign labor, and are both more expensive than most other Asian economies. Although these two economies receive relatively less investment given the size of their economies, they are both significant outbound investors. Japan has traditionally been the largest investor across Asia while Korea has been increasing regional investments as it emerged as a global economic power. China has also become a large outbound investor, surpassing Japan as the largest global investor across Asia in 2014, but largest investor in Asia in 2008. China’s outbound FDI model is quite different than the Japanese or Korean models that are primarily firm level vertical investments. China, on the other hand, primarily invests horizontally where both economy-owned and private companies invest to access natural resources across the region. By investing in mining, agricultural, and oil and gas resources, China purchases assets to secure present and future growth opportunities. Moreover, economies such as Indonesia; Malaysia; Singapore; and Thailand are increasingly investing abroad. As Asia region is increasingly integrated into GVCs, Asia investors from across the region are looking for new opportunities both inter- and intra-regionally.

Asian OFDI



Source: UNCTADSTAT

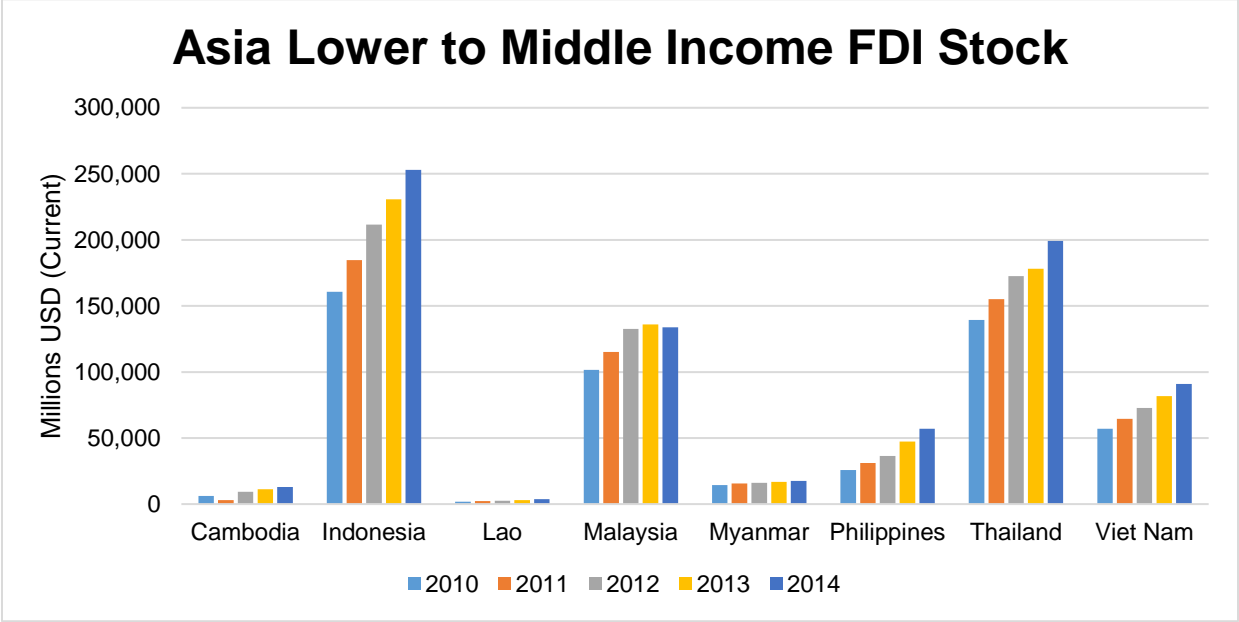
Outbound FDI to other Asia economies



Source: UNCTADSTAT

Southeast Asia also attracts significant FDI. These emerging economies each offer different opportunities and challenges for foreign investors. Indonesia, the largest economy in Southeast Asia, is a popular destination for natural resource investments and fast moving consumer goods. While the archipelago receives the most FDI (other than Singapore), it is also relatively protectionist, inconsistent with regulatory policies, and does not enforce contracts equally or to an international standard. That being said, the economy with over 250 million people and an emerging middle class is considered one of the World's top growth markets. Viet Nam is the leading Southeast Asian destination for low-cost manufacturing. While each of the other

Southeast Asian economies do indeed receive FDI, each of them are facing some level of political volatility in 2016 that could impact further GVC integration and overall economic development.



Source: UNCTADSTAT

The structure of Asian investment has changed significantly in recent years. Previously, Asia attracted most investment into manufacturing for export led growth. Now, FDI is increasingly focused on tapping new markets and providing added value services to the emerging middle classes. Industries such as telecommunications, real estate, logistics, entertainment, and tourism are increasingly popular investment opportunities in Asia that MNCs are looking to grow in. Moreover, the full range of consumer goods, from low-cost every day products such as diapers, to luxury goods such as Lexus cars are increasingly popular. With such a concentration of economic activity and competition between Asian economies and companies, the region will continue to develop and grow, slowly incorporating the less developed economies into fertile markets.

3.12 Challenges and Opportunities for Asian Enhancement of GVCs

After three decades of impressive economic growth, Asia has evolved as a leading region for GVC creation, connectivity, and expansion. Today, most Asian economies are integrated into regional and GVCs, albeit at varying levels. Although respective Asian economies are increasingly integrated into GVCs, economies must work to maintain and build on their overall competitiveness, look to incorporate a greater percentage of the population into GVC activities, and expand their reach to new markets. Companies working along GVCs are incredibly competitive. If the companies themselves do not consistently upgrade and innovate, or if public sectors do not provide a conducive business regime, than competitiveness can be lost. Even some of the most successful companies from the most developed economies can go bankrupt or realize significant losses (Blackberry, Toshiba, Lehman Brothers).

While there are numerous benefits to integrating into GVCs, there are a number of challenges, both endogenous and exogenous, that impact economic growth, local company competitiveness, natural resource management, and other factors. Exogenous factors that can disrupt domestic GVC integration and competitiveness include natural disasters, global/large economic shocks or policy initiatives, technological advancements, war and terrorism, and numerous other factors. While public sectors and companies can work to mitigate exposure to such macro risks, it is not possible to fully protect against their occurrence. Examples such as the United States Federal Reserve monetary policy, China's slowing economy, and countless other global events that third economies cannot control can affect economies and businesses capabilities to effectively integrate into GVCs. Endogenous factors such as political disruptions, local regulatory changes, labor policies, improvements/hindrances to communications, foreign investors crowding out local firms, transportation infrastructure, etc. can all help to integrate or disintegrate GVC connectivity. The military takeover in Thailand, changes in the Indonesian Negative Investment List for foreign company ownership, China's market engagement during the opening period, or expansion of broadband services across developing economies are examples that show how economies themselves can help determine their foundational capacity to engage GVCs.

In order to work through global shocks and challenges while also facilitating a conducive business environment domestically, there are a number of recommendations economies can consider to support GVC integration. High level initiatives such as improvements to education and infrastructure, transparent and consistent rules and regulations, trade cost reductions and trade facilitation, as well as access to finance can support both developing and developed economies connectivity to GVCs. Specific engagements that can be implemented or improved, such a trade repositories for imports and exports, promoting SME products abroad, active trade promotion and investment attraction, institutional upgrading, education focused to employability, engaging international forums, etc. are all opportunities that each and every Asian economy can undergo. A deeper description of these recommendations can be referenced in the "Recommendations" section as these are applicable to both Asia and Latin America.

There are also a number of ongoing initiatives, some of which have been discussed already in this paper, that highlight what Asia, and respective economies are doing to improve connectivity. AEC integration and Greater Mekong Sub-region infrastructure development are better incorporating Southeast Asia for both internal and external trade and investment and connectivity to China. The Asia Infrastructure Investment Bank is providing financing for improved infrastructure across the region. FDI flows and international business partnerships are increasing, not only from East Asia to developing and emerging Asia, but also from emerging markets to both developed and developing economies. International education exchange programs as well as MNC regional job transfers are bringing diverse populations together. Asia is incredibly active in developing both regional and GVCs. Asian inter-connectivity will continue to improve while Asia's value chain will continue to extend deeper into South and Central Asia as well as the America.

4. Latin America

4.1 Introduction

Latin America encompasses 21 economies spanning North, Central and South America where French, Portuguese, Spanish and indigenous languages are spoken while the geography holds a great range of climate, flora and fauna. Economies across Latin America have a history of turbulent growth with varying levels of development. While some economies seem to advance for a period of time, they often slump later or experience significant internal challenges. Brazil is an excellent case when in the early 2000's it was considered an economy with incredible potential, but now the economy suffers from deflationary trends and political fragmentation. Mexico, one of the more developed economies of Latin America, has progressed in multiple industries and improved livelihoods for many by focusing on comparative advantages such as its proximity to the United States and strong labor force. On the other hand, on-going issues with drug-related warfare hinder stability and sustainable growth. Latin America continues to hold incredible potential, especially if value chains and governance improve. The large population and abundance of natural resources supports upstream industries, but it is necessary to consider full economies and the populace's comparative advantages to add value.



Latin America is home to two major trade blocs, Mercosur and the Pacific Alliance. Mercosur includes full member economies of Argentina; Brazil; Chile; Colombia; Paraguay; Uruguay; and Venezuela along with associate members Bolivia; Ecuador; and Peru. Mercosur was established in 1991 with the purpose of promoting free trade and fluid movement of goods, people and currencies across member economies. Today the group promotes itself as a customs union and

trading bloc together with the Andean Community in a continued effort of connecting the Union of South American Unions as a free trade group. The Pacific Alliance, a second major trade bloc in Latin America consists of Chile; Colombia; Mexico; and Peru, was formed in 2012 to further increase trade with Asia and strengthen economic integration. While Mercosur purports intraregional trade and a framework for respective economies to develop links within their own value chains, they have not succeeded in substantially liberalizing internal trade as numerous political and economic catastrophes stymied progress. Pacific Alliance, on the other hand, is incorporating progressive and emerging Latin American economies that are ambitious to strengthen not only their regional connectivity, but GVCs as well.

The structure of Latin American economies are far less diverse, with a tighter range of incomes and product offerings in comparison to Asia. Latin America is not host to any high income economies, but many lower to middle income economies. Nicaragua and Honduras are on the lower end of the spectrum with per capita GDP's just over US\$ 2,000 while Uruguay and Chile are on the high side with over US\$ 15,000 and \$13,000 respectively. While Brazil and Mexico have relatively large economies, Brazil ranked 9th globally with 2015 GDP (current) at US\$ 1.775 trillion, and Mexico ranked 15th with US\$ 1.144 trillion, their overall size is much smaller than China or Japan. Furthermore, neither of these economies have invested heavily in nor trade large volumes with neighboring economies. Brazil's economy is very inward looking while a vast majority of Mexico's economic interests are aligned with North America. As such, the leading economies of Latin America have not driven RVCs while most Latin economies are focused on commodities that are relatively similar to each other. This lack of diversity and size hinders regional trade, investment, and value chain creation.

4.1.1 Regional factors

Regional attribute	Status
Geography	Vast region; roughly 10,500 km from the southernmost to northwestern most point. Vast amount of climates, flora and fauna.
Economy (general)	Last year (2015) was a negative year for most of the region, reaching a regional nominal GDP growth rate of roughly 1% due to declines in demand from foreign markets, increased Federal Reserve Rates and various negative domestic influences.
Significant economies	Brazil is the largest economy in the region (~US\$ 3 trillion nominal GDP). Economies following by nominal GDP are Argentina; Colombia; Mexico; and Peru
Major trading partners	United States, especially for economies located north of the Panama Canal. The European Union and China follow the United States as major trade partners
Main traded goods	Minerals, oil, agricultural goods, automobiles and electronics (components)

Infrastructure	Infrastructure is among the region's main growth constraints, especially for long-term prosperity. Sanitation, telecommunications, transportation and energy are the key infrastructure areas requiring the most significant investment in the region.
Education	Recent World Bank report reveals that regionally, only 9 percent of the population completes tertiary education. Great shortages in skilled labor.
Financial access	Financial access levels in Latin America are often considered to be at similar to Eastern Europe, Central Asia and Southeast Asia, but lagging in comparison to East Asia and most developed economies. Significant issues relate to small and medium-sized enterprises (SMEs), who receive just 15 percent of total lending.
Ability to attract FDI	Regional ability to attract FDI is largely affected by the growth of the domestic markets more than by the behavior of local markets. Local reforms to improve the attractiveness of economies, such as reducing corruption, strengthening the rule of law to protect property rights, improving regulatory quality, etc. have helped some Latin American economies to become more attractive destinations for FDI than others.
Major inbound FDI industries	Services, manufacturing, mining and agriculture
(Trade) standards compliance	The level of trade standards compliance adoption greatly varies on by economy and industry basis. Most economies maintain international compliance standards across a number of sectors (usually their top industries), but not all.
Trade policy	Regional tariffs are considerably higher than those imposed elsewhere in the developing world. Future trade liberation will come from a number of proposed new regional, bilateral and global trade agreements.
Trade procedures	Trade procedures are considered to be inefficient and time consuming across most of Latin America.

Latin America is a vast region with incredible potential where foci on improving value chains could catapult economies up the competitiveness ladder. Public sector mismanagement, violence, illicit trade in narcotics and other goods, poor infrastructure, and relatively low levels of human capital development hamper progress. With a large workforce and abundance of natural resources, Latin America has incredible opportunity to improve efficiencies on policy, economic diversity, and operational bases to develop select industries to compete globally. Chile is enhancing the value added of the agricultural sector to create jobs and increase incomes, Panama employs its strategic geography to support trade and logistics, while Mexico utilizes its abundance of labor and close proximity to the United States for export led manufacturing. With consistency, leadership, and focus, many Latin American economies could enhance most factors that improve domestic and international value chains. While implementing efficiency measures and working through political hierarchies may be challenging, the medium to long term benefits are substantial.

4.2 Latin America and RVCs

Latin America is rich in biodiversity and natural resources where most economies are centered on activities related to these commodities. Regional connectivity, integration and value chains have grown through traditional methods such as close geographical locations, historical connections, and basic comparative advantage. Historically, many Latin American economies were incorporated under one region such as Gran Colombia which consisted of Colombia, Ecuador, Panama and Venezuela, or closely connected economies such as Bolivia and Peru. However, the lack of development in information, communication and transportation infrastructure, utilization of technologies, scarcity of products in certain areas, political challenges, and other factors has limited Latin American economies' ability to enhance RVCs, and much less GVCs. Although Latin American economies do indeed engage in cross border trade and investment, Latin connectivity is much less developed than Asia.

Although Latin America is abundant in resource wealth, most economies have focused for far too long on base level extraction, agriculture, animal husbandry and fisheries, with little value addition. Brazil and Peru have large mineral deposits in commodities such as copper, gold, and nickel, but have not developed significantly large smelting or processing facilities. Argentina and Chile have excellent grapes for wineries, but their brands do not garner premium pricing in comparison to European competitors. Bolivia and Colombia produce quality agricultural products such as coffee and quinoa, but often the added value is generated by the processors, packagers, and brands that source and resell the raw commodities.

Most Latin economies have not added significant value to many products or heavily specialized in intermediate or finished goods. The commodities boom over the past decade concentrated investment and expansion in the natural resources sectors with much less focus on manufacturing. The subsequent commodities bust following the Global Financial Crisis and Chinese economic slowdown has negatively impacted most Latin American economies, especially Brazil and Venezuela. Due to such heavy concentrations in commodities industries, manufacturing has not significantly grown in economies outside of Argentina; Brazil; and Mexico, which account for approximately 80 percent of the region's manufacturing (Garcia-Herrero et al 2014). Moreover, Brazil's current recession is decreasing demand for manufactures, especially in the automotive sector. Brazil's contraction also negatively impacts Argentinian manufacturing as there is some cross border trade between the neighboring economies. Mexico, which is primarily linked to North American value chains, is the only Latin American economy excelling in manufacturing and intermediate goods trade. Unfortunately, not much of Mexico's manufacturing capabilities trickle down to Central or South America as Mexico still abundant in relatively low cost labor while the other economies are lacking in manufacturing competitiveness.

Although Latin America is not as integrated into GVCs as their Asian counterparts, there are a number of "Multilatinas," strong Latin conglomerates that have dominated domestic industry in a number of sectors and proliferated across the region. Companies such as Mexican Cemex, a global leader in cement products, Embraer (Brazil), one of the few Latin aerospace companies, Falabella (Chile), a large retailer, and AJE, a Peruvian beverage maker, are just a few of the large Latin companies that have successfully expanded to a number of Latin markets while also

instigating operations or trade to other regions, including Asia. The challenge for Latin America GVC connectivity will be incorporating the small and less productive SMEs into Multilatina operations for mutual growth. If domestic and RVCs can take hold and wealth and capabilities are shared, there is significant potential for Latin growth.

For Latin America to better incorporate into GVCs, the region and respective economies will need to take a hard look internally at what their competitive advantages are, what near or related products they can start adding value to, and where their populations can excel and compete in a global marketplace that demands enhanced skills. While Latin American economies can improve internally, there is an opportunity to attract investment from abroad to support local industry and GVC connectivity. While the United States and European economies were traditionally the largest investors in Latin America, Asia is increasingly investing in Central and South America to open into new markets and access raw commodities. As Asia has excelled at engaging GVCs in recent history, Asian companies can bring their companies, capabilities, and experience to Latin America for mutual benefit. By linking to Asian value chains, Latin America can directly connect to the “Factory of the World” and drive regional economic growth.

4.3 Geographic Location

Latin American economies’ geographic location and abundances of natural resources have heavily impacted how the region has developed over the years. Mexico has grown into a manufacturing hub following the signing of the North America Free Trade Agreement (NAFTA) and attraction of investments into the manufacturing industry for companies looking to generate cost savings. Panama is the logistics hub of Latin America as it hosts the Panama Canal that allows ships to pass from the Pacific to the Atlantic quickly and easily. Chile has emerged as a strong player in agricultural and fisheries markets based on its temperate environment and long coast lines. Landlocked economies such as Bolivia and Paraguay have not developed significant industries outside of agricultural and energy commodities as it is more difficult to transport products to and from markets.

Latin America’s regional and global integration is certainly impacted by geography. The economies of Central America share a common geography and are blessed with fertile volcanic soils, long coast lines, and reasonable levels of mineral and petroleum resources. Although Central America is lush and fertile with an abundance of natural resources, the region has long been controlled by strong elite classes where the benefits of natural resource exploitation has not been spread to the general public. Moreover, most Central American economies have gone through serious conflicts or civil wars since the late 1970’s and 1980’s putting back the region’s ability to develop. The region is still plagued by violence, often instigated by organized crime involved in the drug trade, but there are not any current wars underway. It is hoped that the region can stabilize with more equitable usage of its natural resources to progress economic development and regional connectivity. Considering the relatively low levels of industrialization across Central America, it is of no surprise that the largest economy of Central America and the most integrated into GVCs, Mexico, focuses most economic activities towards North America rather than expanding down to its Southern neighbors. Although there is some GVC connectivity in the developing economies of Central America, a majority is geared towards the garment and

textiles sector. Although foreign investors may look to tap the United States market at relatively low costs and close proximity, there has been little value addition at the local level while Asia region is still more competitive, diverse, and integrated into garment GVCs.

South America has a range of climates and is also abundant in natural resources. The region is separated by the Andes Mountains and Amazon forest which has challenged infrastructure development across borders. Although the region has incredible potential, similar to Central America, South America has been embattled by political conflicts or varying levels and economic mismanagement. Rebel conflict (Colombia), financial indebtedness (Argentina), recent political scandals (Brazil), and a complete collapse of private sector engagement (Venezuela) has fragmented the region and stifled value chain connectivity and harmony in institutions. As such, South American economies are far less connected to regional or GVCs in comparison to their Asian counterparts at similar per capita GDP levels. As such, most South American economies depend heavily on their wealth of natural resources and base levels services trade. With Brazil and Argentina, the two largest economies of South America, in recession and Venezuela in economic chaos, it will be difficult to develop RVCs. Although RVCs will take additional time to develop, Pacific Alliance economies, Chile; Colombia; and Peru, are working to better integrate into GVCs by improving institutions, promoting trade, and trying to attract FDI.

4.4 Natural Resource Endowment

Natural resource exploitation accounts for a vast majority of Latin American industry where agricultural, mineral, petroleum, animals and fish commodities are primary exports for most Latin economies aside for Mexico. Chile and Peru are some of the world's largest exporters of copper, while Brazil is ranked second in iron ore production. Oil & gas accounts for large portions of numerous Latin economies such as Brazil; Bolivia; Ecuador; Mexico; Venezuela; and others. Although minerals and petroleum products are the big capital extractive resources, agriculture, fisheries and animal husbandry employ a majority of workers across Latin America and account for large portions of economies' exports. Brazil and Argentina are some of the World's largest producers and exporters of soybean and beef products while soy and beef account for over 50 percent of Paraguay's exports. Chile and Peru have strong fishery industries where Peru exports a large amount of muscles and crustaceans while Chile is one of the World's largest exporters of Salmon. A number of Central American economies such as Honduras and Nicaragua have developed large coffee industries.

Natural resources are indeed valuable commodities, but a heavy focus on resource extraction and lagging investments to upgrading and diversifying an economy leads to risks, underutilization of human capital, and stagnation in overall competitiveness and value chain integration. This is evident in Latin America, especially South America where the commodity boom of the 2000's led to a concentration of industrial activity geared towards raw natural resource exploitation and export where output in other sectors, such as manufacturing, decreased as a percentage of GDP. While many Latin American economies received FDI, a majority of this FDI was horizontal, with investments aimed at securing access to natural resources and not necessarily upgrading processes or gaining competitiveness. As commodity prices are volatile, changes in supply or demand can have a dramatic impact on economies focused on extractive activities. Brazil and

Venezuela are fantastic examples of the resource curse in action. Because both economies were heavily focused in oil & gas and minerals, the World's, especially China's, declining demand reduced the volume and value of exports, and thus on tax collection and economic growth. Now, both Brazil and Venezuela are in recession with challenging political situations.

Natural resource management and strategies to add value to abundant commodities should be a priority to most Latin American economies to adequately utilize their comparative advantages. Investments into mineral processing technologies and design engineering not only add value to the work already being done domestically, but it also builds efficiencies, can improve environmental management, and offers opportunities for exports. Chile is building on its mining capabilities by establishing centers of excellence. By working with international mining companies, Chilean and private sector cooperation is producing world class engineers for both domestic industry as well as service exports (Blyde 2014). Improving utilization of agricultural commodities such as sugar cane and soybeans also adds to diversified production, improved agricultural productivity, and a longer value chain for base level products. Brazil is now a leader in sugar cane based biofuels which reduces dependence of petroleum energy. As Brazil is incredibly productive in sugar cane, the economy uses its capabilities for not only sugar and derivative products, but also transportation in the form of biofuels. Many Latin American economies are strong in commodity production and thus should look for ways to improve overall utilization. While trade barriers may exist to some added value products, negotiating through these barriers should be economies' priorities so the economies can do what they do best.

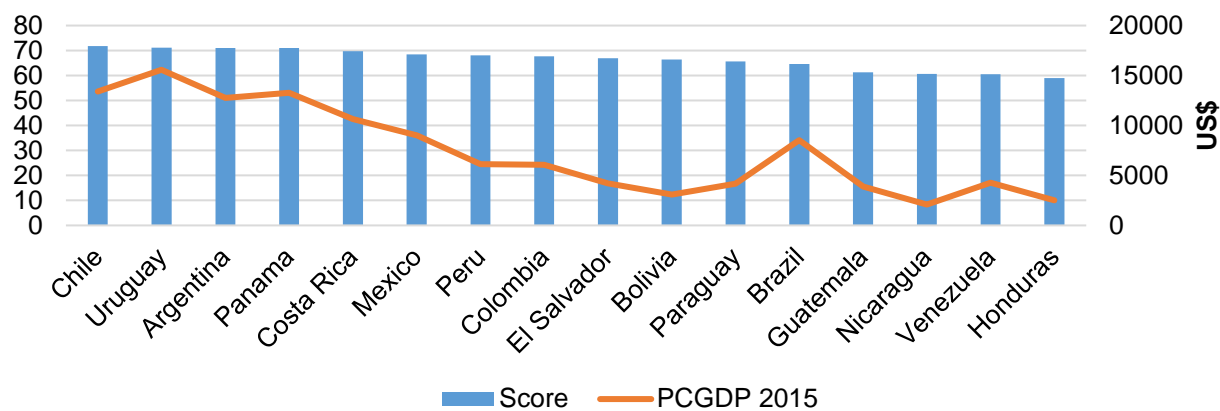
4.5 Population and Human Resources Development

According to the World Population Prospect in 2015, the Latin America population was estimated at more than 626 million. Although Latin America is still incredibly diverse in terms of ethnicities, the region is more homogenous in terms of languages where European languages, especially Spanish and Portuguese, dominate South American language. Moreover, Latin economies are overwhelmingly Catholic and Christian where cultures converge to a reasonable level of understanding between each other. This is vastly different than Asia, where the sheer diversity of languages and cultures complicate cross boarder communications. While close language and cultural affinities are supposed to be a boon to regional and GVC creation, Latin America still lags far behind Asia in terms of global connectivity. This report alludes to some of the more structural reasons why the region isn't better integrated, such as a dearth in infrastructure, internal political conflicts, and relative similarities to productive capabilities, it should be easier for Latin economies to connect.

Latin American economies hold a range of levels of human capital development. The World Economic Forum rates Chile; Uruguay; Argentina; and Costa Rica globally as 45th, 47th, 48th, and 49th respectively. Honduras; Venezuela; and Nicaragua rank towards the bottom at 96th, 91st, and 90th respectively. Similar to per capita GDPs, the region's band of human capital development is tighter than Asia's where overarching capabilities do not vary that extensively across economies. Most economies are ranked medium to lower levels of human capital development which translates into the complexity and diversification of respective economies, which is expanded upon in sections below. In contrast to Asia, where higher levels of human capital development

related with levels of GVC integration, this differs slightly in Latin America. While Chile is considered one of the most highly integrated economies with a comparatively higher HCI rank, Brazil and Mexico, which are arguably the most connected economies in Latin America (on a gross basis), rank lower in terms of human capital development.

WEF Human Capital Index 2015 vs. Per Capita GDP



Source: World Economic Forum Human Capital Index and World Bank Data

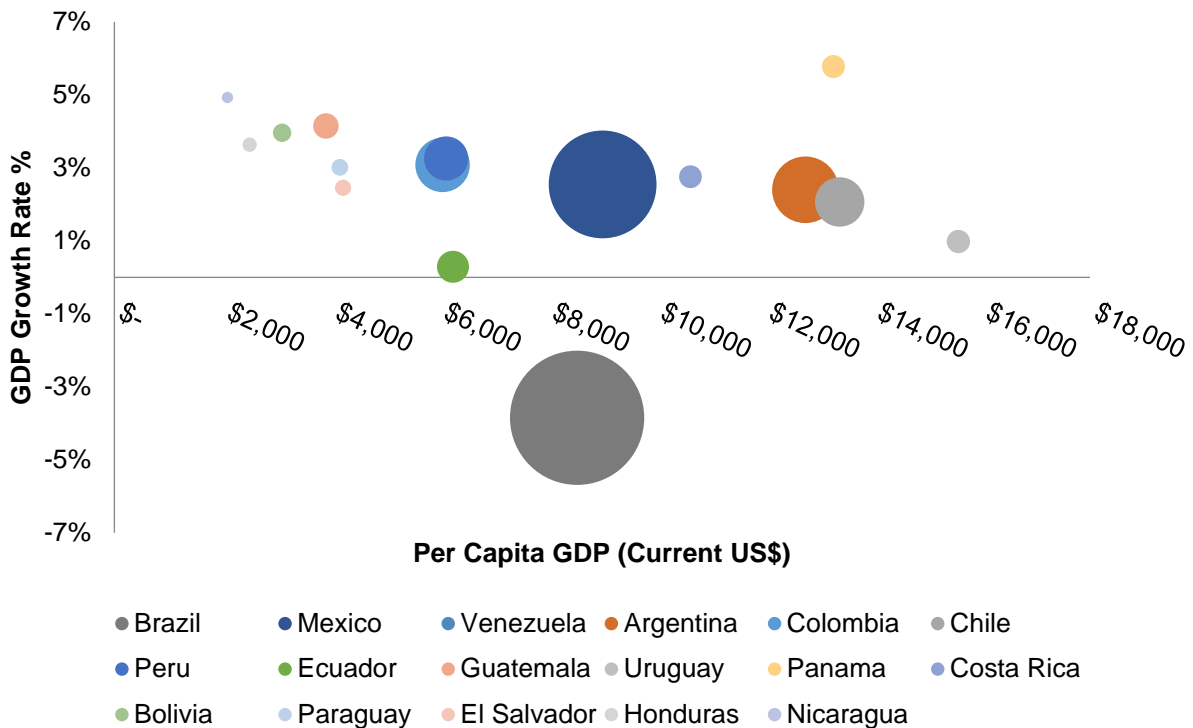
While these modest levels of human capital development have not sparked substantial GVC integration and overwhelming formal employment, the structures of Latin economies have fostered significant entrepreneurialism where 60 percent of Latin Americans have their own business or work for MSMEs. Furthermore, having fewer options to obtain a formal position, the young generations are increasingly following this trend where over the past four years, 19 percent of new businesses in Latin America and the Caribbean were founded by someone under the age of 35 (Maso 2016). Although entrepreneurialism is strong, spending on R&D as a share of GDP is less than half that to developed economies while Latin America has one-seventh the number of researchers per 1,000 workers. While Asia registered some 1.5 million patents in 2014, Latin America registered just over 60,200, with Brazil accounting for approximately 50 percent of patent registrations (WIPO 2015). University and corporate cooperation as well as innovation tax breaks could bridge the gap to guide these entrepreneurs into higher added value services (Economist 2014).

To better utilize these entrepreneurs and better connect to GVCs, each Latin American economy should look to improve levels of human capital development. Initiatives, such as the Chilean mining centers of excellence and other training programs geared at securing formal employment or utilizing improved technologies could go a long way in supporting Latin economies. While there is no one economy dominating educational attainment and human capital development in the region, this is another opportunity for an economy to take the lead and supply Latin based quality education and training institutions for the region and beyond. By taking a tenant of GVC theory of specialization, and in this case in education, improved education initiatives could support regional and GVC connectivity in the long run.

4.6 Economy

Latin America grew at an annual rate of 4.2 percent from 2004 to 2013, lifting millions of people from poverty (Deloitte 2015). This economic growth was driven by the commodity boom and a number of economies' economic reforms to provide for society and better connect to GVCs. Unfortunately, the region contracted in 2015 and is expected to contract more in 2016. Furthermore, economic and political volatility will set back further development in the near term and could have longer lasting impacts on the region as a whole. Now, with a stronger middle class and access to international media outlets, the populace is harder to appease and demands more from public sector bodies (World Bank 2016). As such, Latin American economies will need to continue improving infrastructure to open up domestic and international connectivity, further human capital development, retrench the manufacturing sector, and add value to the diversity of commodities. While an economic downturn is challenging, poor conditions often spark good policy making. As public sectors realize the importance of international connectivity and GVC integration, it is hoped that a number of Latin economies will improve on a number of the indicators described below.

2015 GDP Growth vs. Per Capita GDP



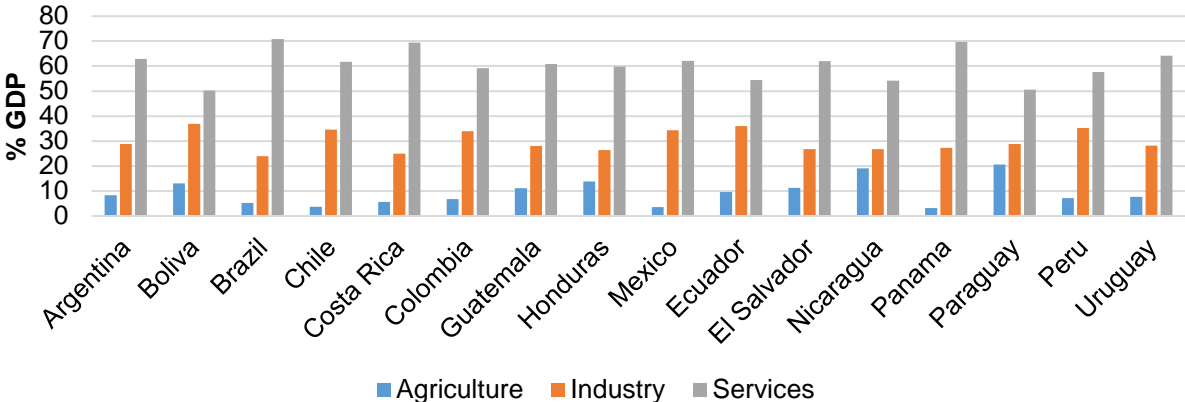
Source: World Bank Data

Note: Size of bubble delineates size of economy

While a number of Latin American economies are comparable to Asia in terms of size and levels of economic development, the region operates in a tighter band where there are no high income economies. Uruguay and Chile have the highest per capita GDPs, but are relatively small economies while Nicaragua and Honduras are the smallest with the lowest per capita GDP. Argentina; Brazil; and Mexico are the largest economies in Latin America, but are all considered

middle income where poverty still impacts large portions of society. Moreover, Latin America does not have any lead economies driving FDI, finance, or services trade like Asia. In Asia, economies such as Hong Kong, China and Singapore act as regional business and logistics hubs while China and Japan drive FDI across Asia. Although some Latin economies such as Brazil and Chile do indeed have investments in other American and Asian economies, the number and volume of FDI projects are small in comparison to Asia.

Latin American 2014 Structure of Economy (added value, % GDP)



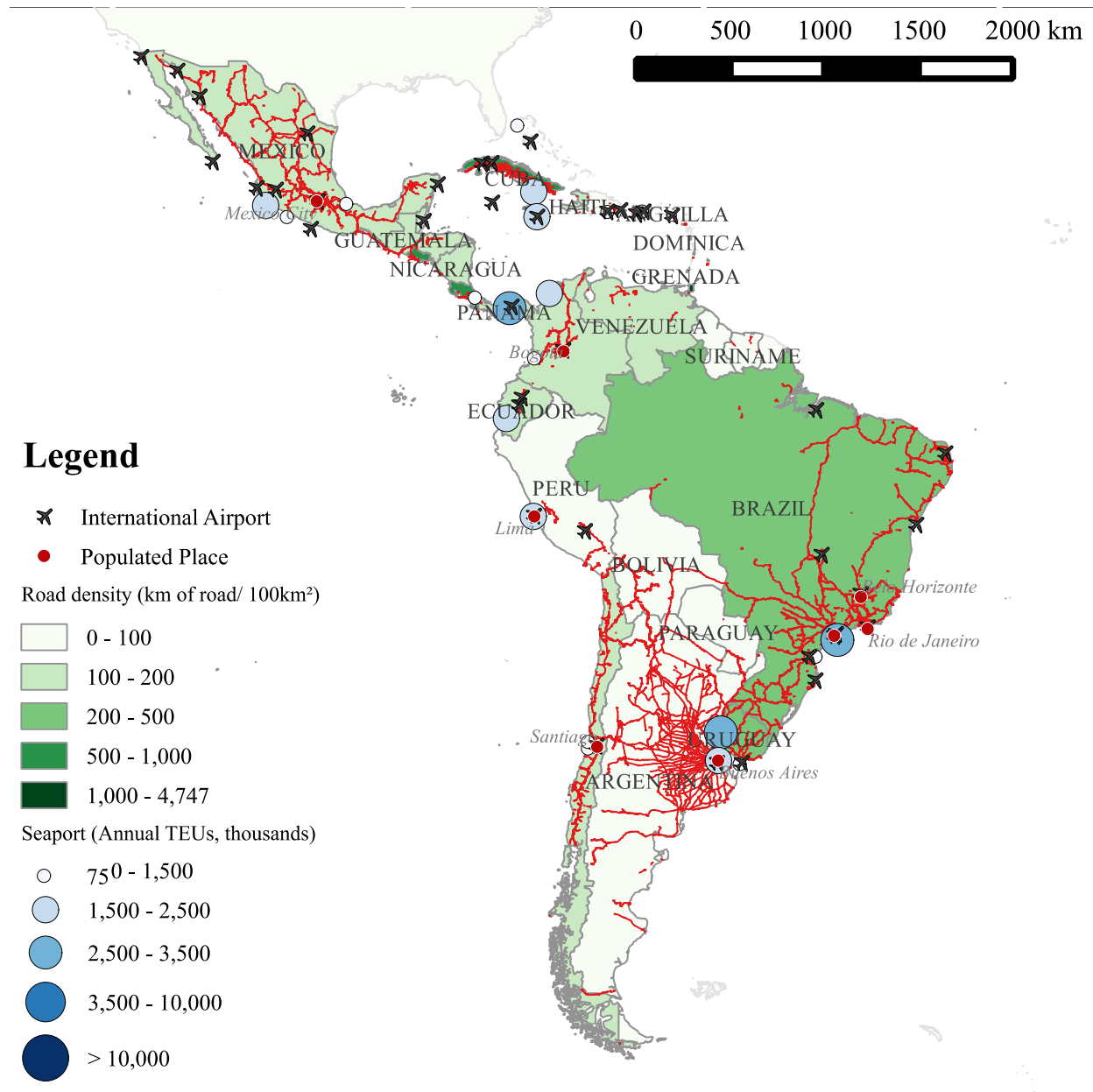
Source: World Bank Data

Agriculture is still important to most Latin American economies, but the services sector dominates the structure of most economies. Fueled by domestic demand and appreciating exchange rates, many Latin American economies shifted from manufactures to services, which now account for 50 percent or more of added value as a percent of GDP in each Latin economy. “Services” is an incredibly broad economic section where services contribute to all industries and trades. As such, some of this growth in services is a shift from industry where industrial firms outsourced services such as transportation, security, and specialist services such as engineering to third parties. Thus, these services are no longer considered as “industry,” although the contribution is still towards industrial productivity. Moreover, the number of high skilled services company has increased over the past decade where more than 50 percent of those employed in services have at least a secondary education and 20 percent with a tertiary degree (Yeyati 2014). As Latin America continues to develop, it is expected that services will continue to be the largest contributors to GDP.

Industry, although it does not account for the largest portion of GDP, is the driver of Latin American economic growth (or decline in times of low commodity pricing) and exports. Moreover, much of the services sector is geared towards supporting commodity markets. Thus, the commodities sectors are of primary importance to most Latin economies, while manufacturing has declined besides for Mexico. This strong concentration in raw commodity exploitation and intermediate processing may explain why Latin America has not developed strong RVCs or heavily integrated into GVCs. Although economies such as Mexico do indeed manufacture a number of intermediate

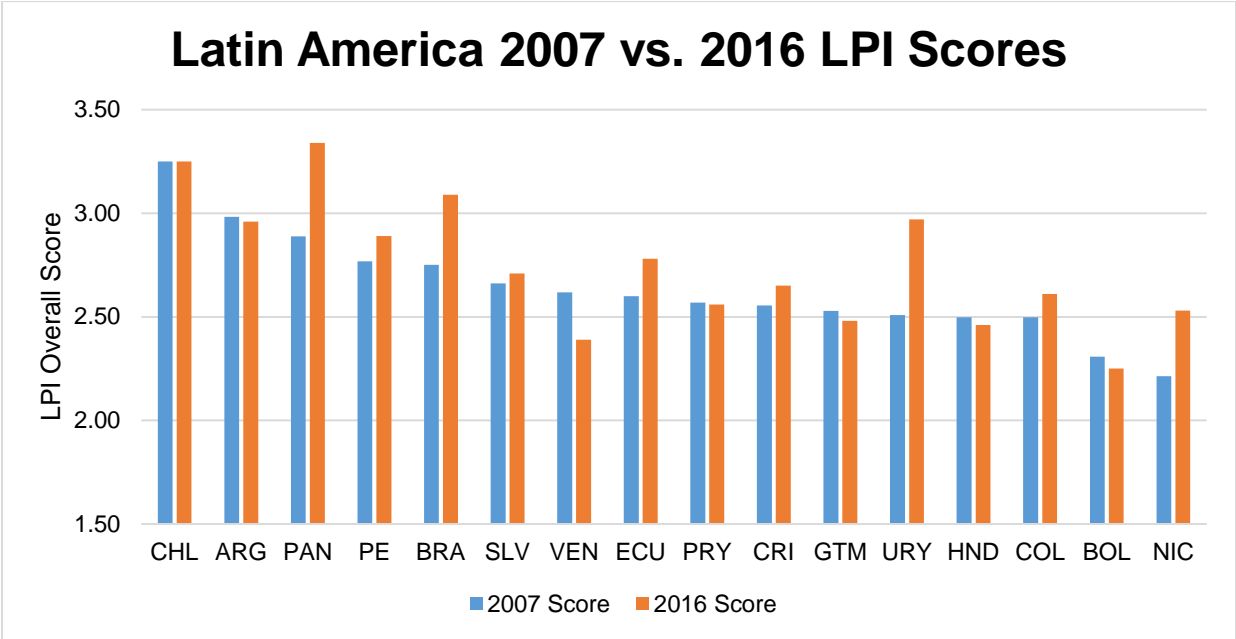
goods and services, Latin economies supply similar goods and products as their neighbors or do not process the commodities to a level demanded for end users. Without sufficient processing of raw commodities, which would be augmented into an intermediate good, RVCs will be hard to grow. As such, adding value and the manufacture of commodity derivatives can drive the next Latin industrial revolution. More on Latin industry is described in the “Industry” section.

4.7 Infrastructure



Blyde, in his study entitled “Synchronized Factories,” concludes that economies with better logistics infrastructure attract more vertical investments, especially in economies that are dependent on logistics services. However, as a region, Latin America lags behind many other regions in terms of investments into transportation, communications, energy and sanitation. As

Latin American industry is geared towards commodity markets, they indeed do depend on logistics, energy and connectivity. With respect to maritime and air infrastructure, Latin America has improved over the past decade (Blyde 2014), improving freight connectivity for imports and exports. For intra-regional road connectivity, Latin American economies are connected with the Pan American Highway. This road spans approximately 48,000 kilometers and links most mainland American economies. While it serves Latin America in terms of length and cross boarder connectivity, there are numerous portions that are poorly maintained causing countless traffic accidents. Although there is some intra-regional and international infrastructure connectivity, Latin America has some challenging terrain in the form of dense jungle and the Andes Mountains. Moreover, there have not been sufficient investments into infrastructure to reduce transportation costs. Going forward, it is in the best interests of all Latin economies to continue improving all types of infrastructure to better connect RVCs and GVCs.

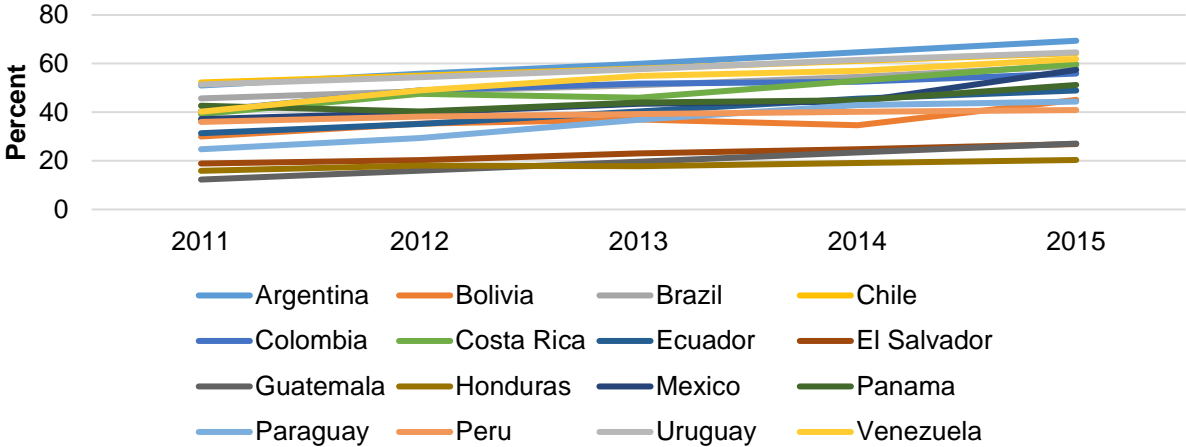


Source: World Bank Logistics Performance Index 2016

Although Latin America is not as connected to the internet as Asia, all Latin economies have extended access to reach a growing number of the populace. Economies such as Chile; Costa Rica; and Mexico are increasingly wired which will support growing industries and GVC connectivity. Chile is increasingly integrated into GVCs and better connects with global customers for their commodity and retail products. Mexico is the most prolific supplier of intermediate inputs in Latin America better communicates with trade partners, while Costa Rica continues to improve its technology industry in cooperation with global tech companies such as Intel. Improved access to the internet will also be a boon for agricultural economies such as Paraguay where farmers can access regional and global commodity pricing quickly and easily while SMEs can look for customers of their niche products abroad. Finally, access to internet will facilitate GVC connectivity by reducing the cost to communicate with distant regions, identify competitor products and provide access to an abundance of information stored online. As technology

continues to evolve, Latin economies that are less connected to GVCs can leapfrog technologies by utilizing the latest, and often free or affordable technologies to excel.

Percent of Population with Access to Internet



Source: International Telegraph Union

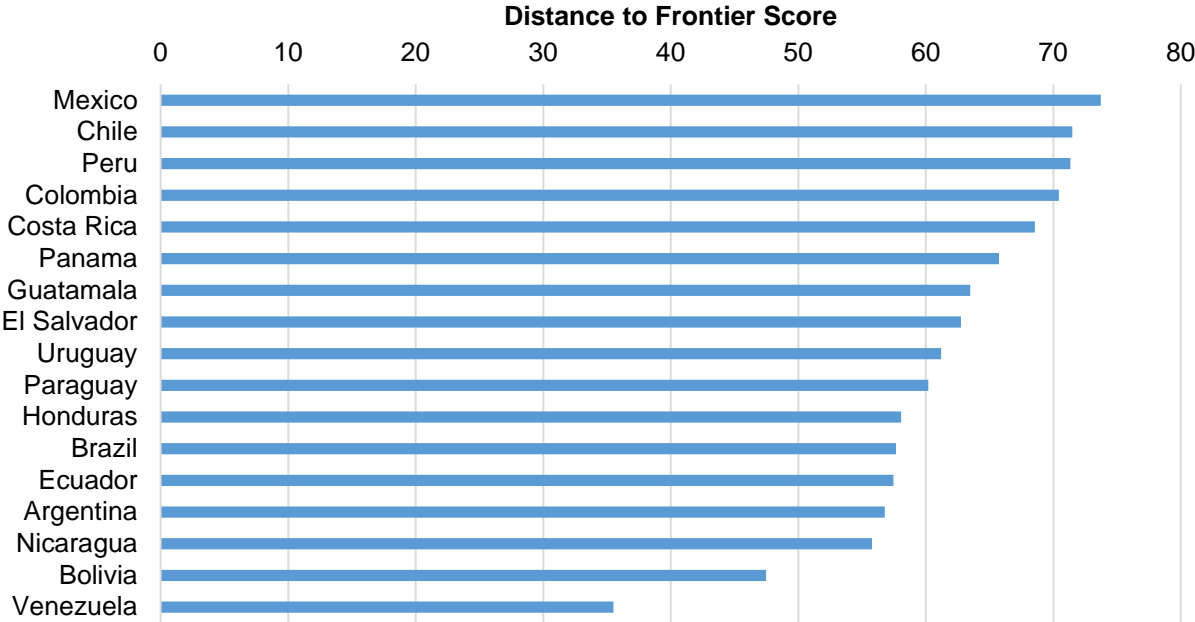
4.8 Institutions and Policies

Similar to Asia, South America is diverse in terms of political and institutional development. Due to the strong correlation between quality institutions and per capita GDP, Latin economies should work to improve levels of governance and institutions both for business and overall society. While a number of economies are making progress improving institutions, such as Colombia and Peru, economic and political turbulence in places such as Brazil and Venezuela will hinder regional improvements. Quality institutions, especially in terms of absence of corruption, rule of law, regulatory quality, and public sector effectiveness also support GVC connectivity. Volumes of trade and investment are dependent not only on the types of products and services supplied, but also on the bureaucratic systems that attract FDI and facilitate trade. Thus, any improvements to local institutions benefit both local society and efficiencies as well as international business.

Regarding the ease of doing business in Latin America, the region hosts one of the most challenging places on Earth to do business in, Venezuela, which is ranked 186 out of 189 economies, while the easiest economy to do business in Latin America is Mexico, ranked 38th. This contrasts with Asia, where five Asian economies rank in the top twenty economies in terms of ease of doing business. As Venezuelan public sector took over most industrial activity, the economy effectively kicked out all foreign investors placing the economy in the hands of the public sector, making it quite difficult to operate a business domestically. Central American economies, such as Costa Rica and El Salvador now have improved access to credit, while Costa Rica has improved an impressive 21 spots, also making it easier to pay taxes. If Latin America wants to stand out and attract FDI to better incorporate GVCs, there will need to be a substantial amount of additional business policy reform to ease the process of starting and maintaining a business.

In a globalized World, FDI investors can pick and choose the economies that can best accommodate their activities. Asia, with larger populations, faster economic growth, and often times a more conducive business environment, outweighs Latin America in terms of investment attractiveness. Although Asia may attract more of the Western and Asian investors, there is indeed an opportunity to work with Asian partners, who are also experienced with operating in challenging business environments, to help expand grow Latin American economies, at least for those economies interested in integrating into GVCs.

Latin America Ease of Doing Business 2016

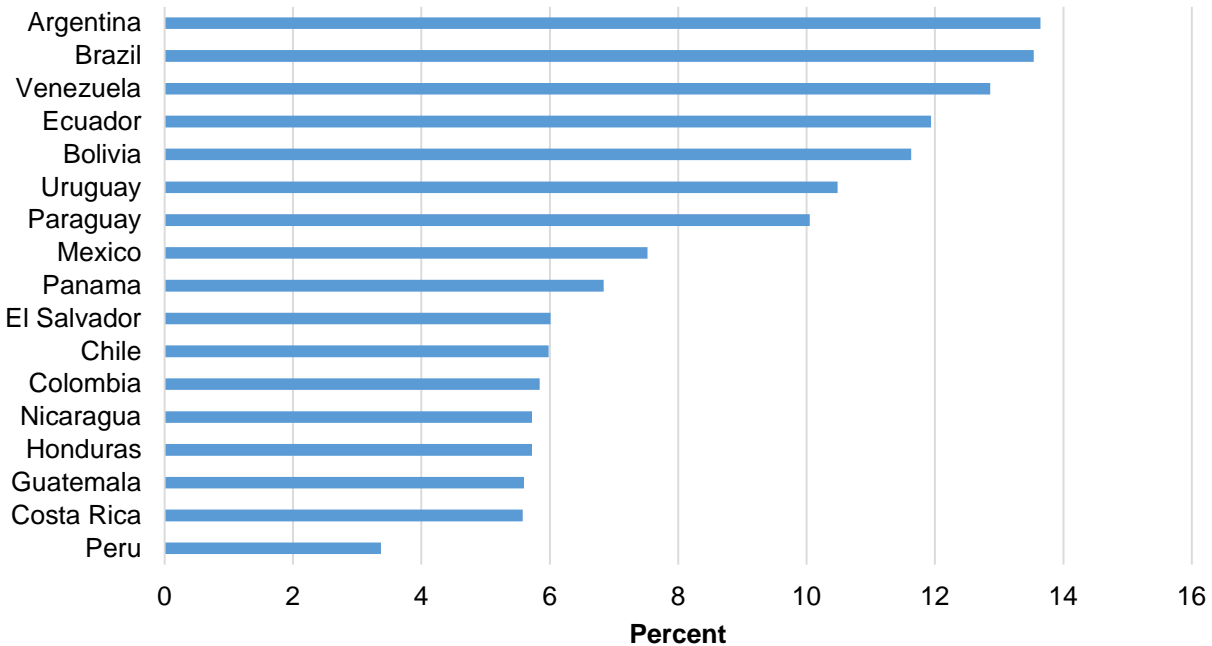


Source: World Bank Doing Business

4.8.1 Openness to Trade and Investment

Although Latin America, as a region, is generally open to trade and FDI (besides for economies such as Venezuela), the region has not integrated into GVCs as much as Asia. On average, tariffs have reduced across most economies due to the increase in preferential trade agreements and trade liberalization. Today, most economies have tariffs on imports below ten percent, besides for a number of more protectionist economies such as Argentina, Brazil and Venezuela. That being said, Latin American tariff levels are still higher than most of East and emerging Asia, making it more expensive to engage in intermediate goods trade in comparison to Asia (UNCTADSTAT 2015). Moreover, the abundance of preferential trade agreements across Latin America have caused confusion as differing standards and product characterizations complicate trade across borders (more on FTAs in the FTA section). This also creates trade diversion where Latin companies may not source from the most efficient global company for a particular product, but rather from companies included in regional or bilateral trade agreements.

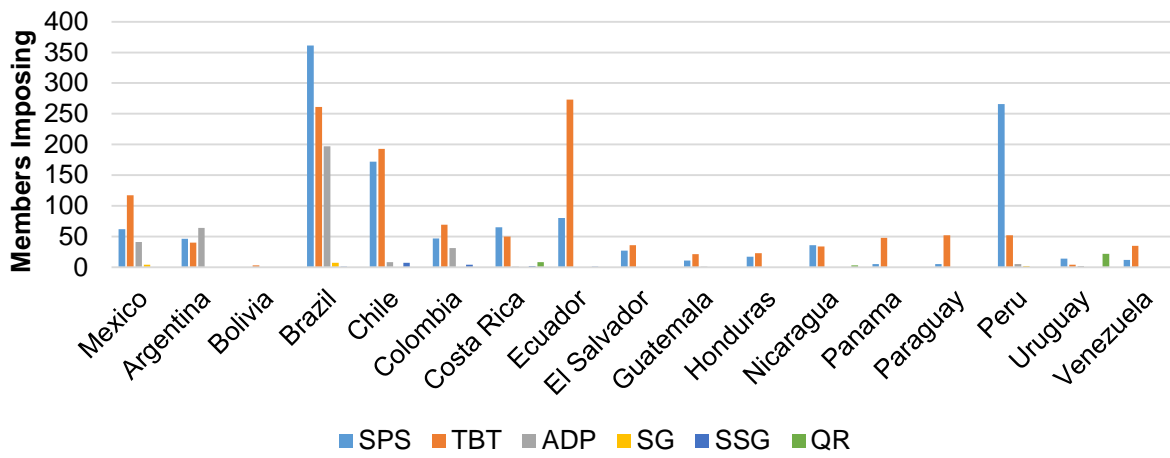
Latin America Simple Average Applied MFN Tariff



Source: WTO International Trade and Market Access Data

As explained earlier in this report, NTBs complicate trade between economies. Because Latin American economies are, on average, less dynamic than those of Asia, trading in a tighter range of products focused on commodities, the region has not had as many NTBs or trade disputes as Asia. Brazil, the largest economy in Latin America which is relatively protectionist in terms of trade and investment, has the greatest numbers of NTB disputes. Other economies such as Ecuador have a number of technical barriers to trade (TBT) and Peru with sanitary and phytosanitary (SPS) trade restrictions. Most other Latin economies have not had too many trade disputes brought to the WTO. While setting standards and looking to protect consumers from unsafe or inappropriate products is important, maintaining relatively low NTBs, and if implementing NTBs, at least being transparent and harmonized with international standards and trade agreements, can reduce the challenges of international trade and support GVC connectivity.

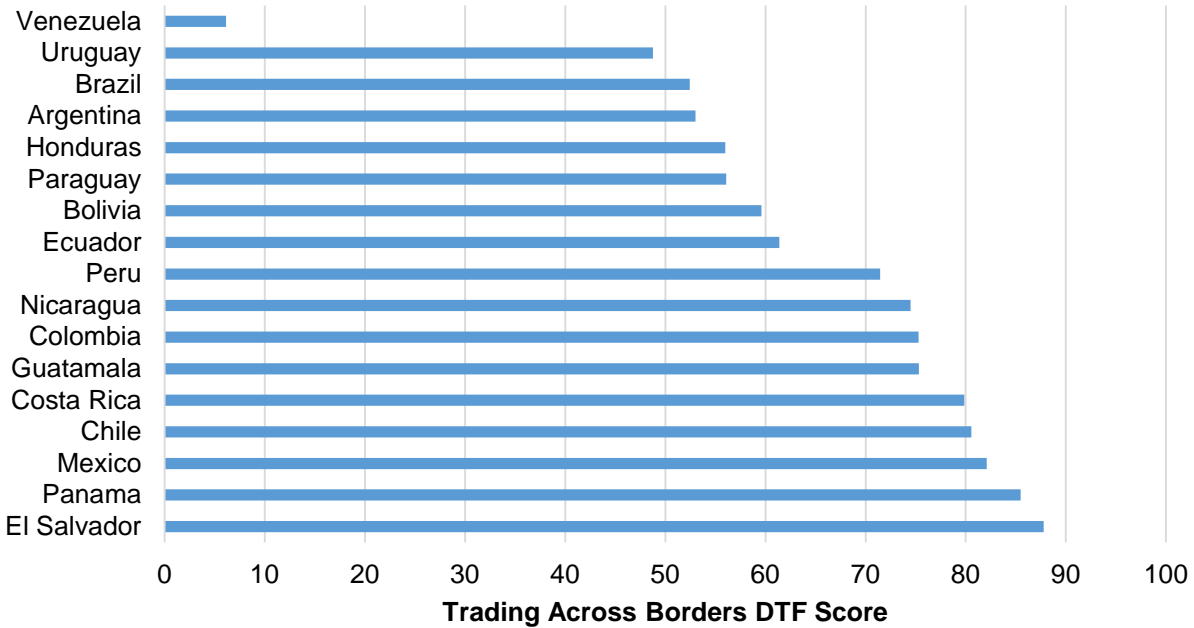
Latin America Non-tariff Trade Barriers 2011 - 2015



Source: World Trade Organization Integrated Trade Intelligence Portal

Even though tariffs and NTBs are not substantially high across Latin America, trade across borders is challenged by a dearth in quality infrastructure, differences in preferential trade agreements, and security issues. Mexico and Panama, both of which have substantial international trade, Mexico for its concentration in manufacturing and substantial trade with North America and Panama for utilizing its strategic location with the Panama Canal for logistics trade, have reasonably high Trading Across Borders scores, but are still ranked 59th and 54th respectively. Venezuela, on the other hand, is ranked the worst economy on Earth for trade across borders due to the nationalization of economy and political challenges. Now, Venezuelans have an undersupply of most products including base goods such as bread and milk. In order to enhance both regional and GVCs, Latin American economies must continue to improve infrastructure and trade related institutions. By better connecting economies, the region, and trade support facilities, the region will become increasingly competitive with higher concentrations of trade and investment to fuel growth.

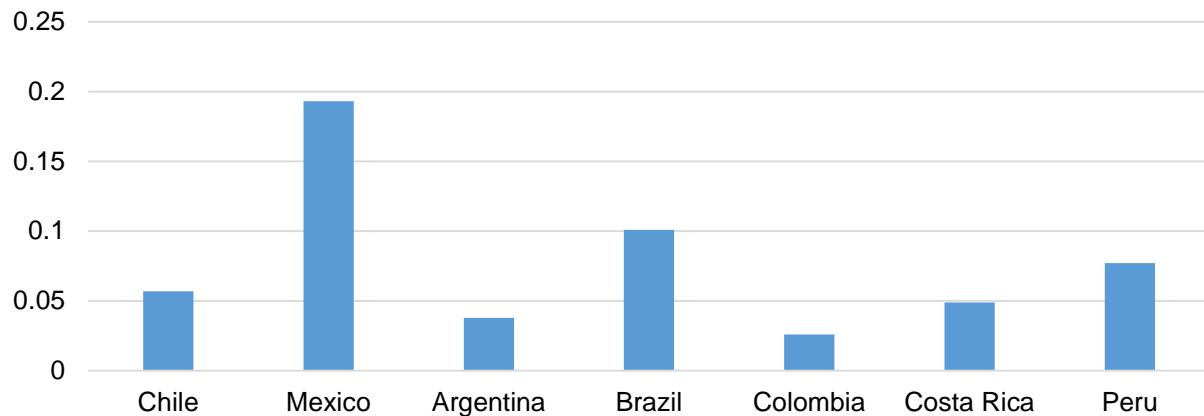
Trading Across Borders 2016



Source: World Bank Doing Business 2016

FDI is also very important to helping Latin American industrialization and GVC incorporation. Prior to the recent commodities bust, Latin America enjoyed impressive growth in FDI (more in Trade and FDI section). While the numbers were impressive, a vast majority of this FDI went into the commodities sectors. In 2014, these FDI flows decreased by 16 percent, greater than the 7 percent global contraction of other economies (OECD 2016). It is of primary importance for Latin American economies to better diversify industry, attract investments into downstream industries, and seek added value for natural resources. On an average basis, Latin America is quite open to FDI, but there is room for further liberalizations in economies such as Brazil and Mexico in a number of sectors. Moreover, improved investment attraction and trade promotion strategies could attract investors into prioritized sectors to help GVC connectivity, increased productivity, and lower prices (OECD 2016).

OECD FDI Regulatory Restrictiveness Index



Source: OECD FDI Regulatory Restrictiveness Index 2014

Note: Data available for 7 Latin economies only

Increased trade and investment to Latin America will facilitate GVC integration and provide better access to a diversity of products and spark trade in intermediate goods. As Latin America is generally less connected to GVCs and lags in terms of global competitiveness, improving public sector institutions, expanding infrastructure, and reducing barriers to trade can build momentum to add value to industry and incorporate into GVCs. Asian companies may hold opportunity to contribute to Latin development as they have recently evolved their own economies, have cost and quality competitiveness, and experience developing downstream industries.

4.8.2 Free Trade Agreements

The number of FTAs and/or preferential trade agreements (PTAs) have increased across Latin America. Today, there are more than 65 PTAs with at least one Latin economy and 32 intra-regional agreements, including larger agreements such as Mercosur and Pacific Alliance (OECD 2016). Additionally, multilateral agreements such as Pacific Alliance could further harmonize Latin trade standards and cooperation. Although there are a relatively large number of FTAs and PTAs incorporating Latin America, the agreements often overlap or conflict with each other, making cross border trade and utilization of said agreements complicated. This web of agreements is often referred to as the “Spaghetti Bowl Effect” as the agreements intertwine product flows in a haphazard manner. To improve FTA/PTA utilization, a consolidation and harmonization of bilateral, regional, and multilateral trade agreements would improve efficiencies. Interviews with Latin stakeholders highlighted that Pacific Alliance is making progress on harmonizing trade agreements, but this only incorporates three Latin economies at the moment.

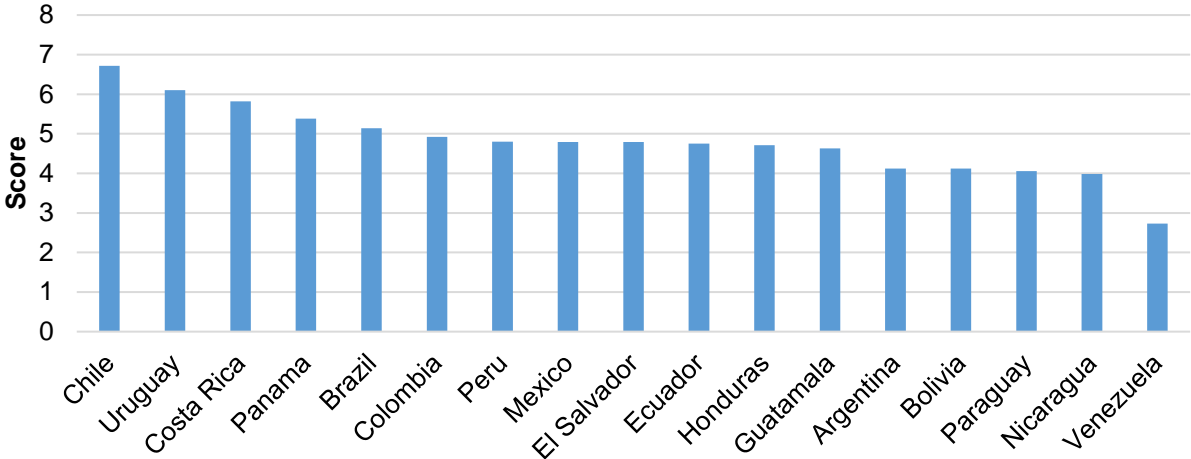
Blythe’s Synchronized factories shows that trade agreements do indeed improve vertical integration and the establishment of subsidiaries, but do not have a significant impact on cross-border production sharing. Although these trade agreements have indeed improved trade relations with signatories, there is risk of trade aversion, where companies are sourcing from

these preferred trade partners rather than the best or most efficient supplier of relevant goods and services. Moreover, rules of origin issues, changes in other economies' trade policies, and superior production of products and services from other economies can augment optimal trade flows. Trade liberalization through FTAs and PTAs can be useful, but can also create complications. As such, wider, multilateral trade liberalization can facilitate wider GVC integration.

4.8.3 Property Rights

The previous sections of this report explain the importance of property rights to fostering competitiveness and GVC integration. Latin American economies have intermediate levels of property rights protections, although on average, less than Asia. For economies such as Brazil; Chile; Costa Rica; and Mexico, that are increasingly integrated into GVCs and looking to attract FDI, property rights will be important. Moreover, as such a large portion of Latin businesses are SMEs, improved IP rights will have a greater impact on supporting competitive companies capable of engaging international markets rather than allowing companies to infringe on IP to garner short term gains. The less developed Latin economies that currently rank poorly in international property rights have less dynamic economies and lower levels of technology utilization with relatively less industrialization and manufacturing. If these economies want to attract more FDI to quicken industrialization and downstream industry, it will be important to improve public sector institutions (as described in the institutions section) and instill property rights with adequate enforcement to provide a conducive business environment.

International Property Rights Index



Source: International Property Rights Index 2016

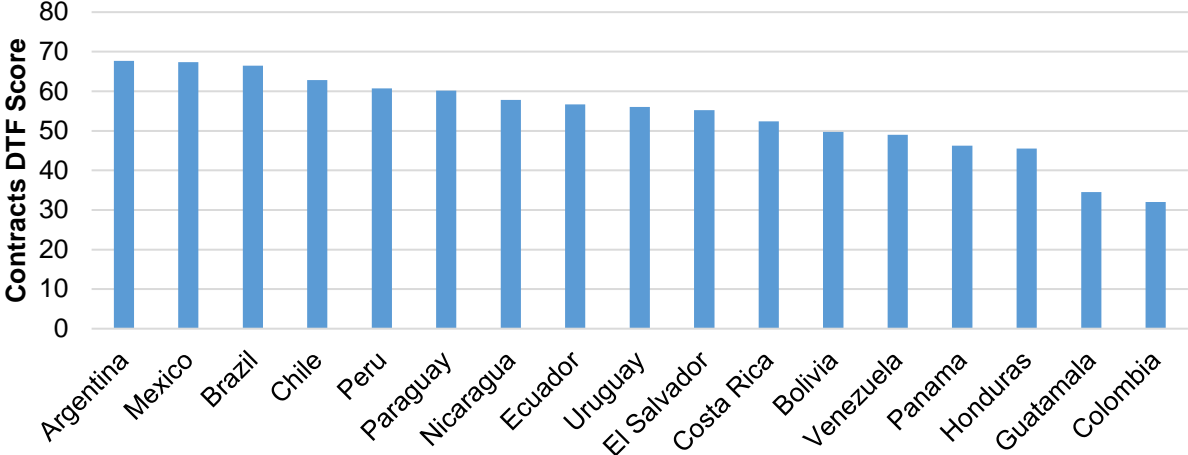
4.8.4 Enforcing Contracts

Contracts and transparent enforcement are incredibly important to engaging GVCs as long distances and a lack of understanding between business partners creates uncertainties in payment or product delivery. If a customer or supplier reneges on a contractual agreement, company reputation and trust decreases where it is unlikely there could be a longer term business relationship. On the one side, suppliers will lose future customers for not living up to a contract,

while end users that renege will need to source elsewhere and have inconsistencies in product supply due to the need to source from numerous outlets. Even in the case an MNC establishes a wholly owned or joint venture subsidiary, there are still often contract disputes and transaction challenges (Blythe 2014). Poor institutional development combined with low levels of contract enforcement will dissuade FDI and continued business cooperation, making GVC integration challenging.

Overall, Latin America region ranks lower in terms of contract enforcement in comparison to Asia. It takes substantially longer to go through the court proceedings to gain a determination on a contractual dispute. Due to the relatively lower levels of competitiveness as well as the challenges in enforcing contracts, Latin American economies will need to advance contractual facilities to better engage GVCs. Without sufficient levels of trust or legal institutions to protect foreign traders and investors, it will be incredibly difficult for the region to better engage GVCs, especially outside of commodity markets.

Enforcing Contracts Score 2016



Source: World Bank Doing Business 2016

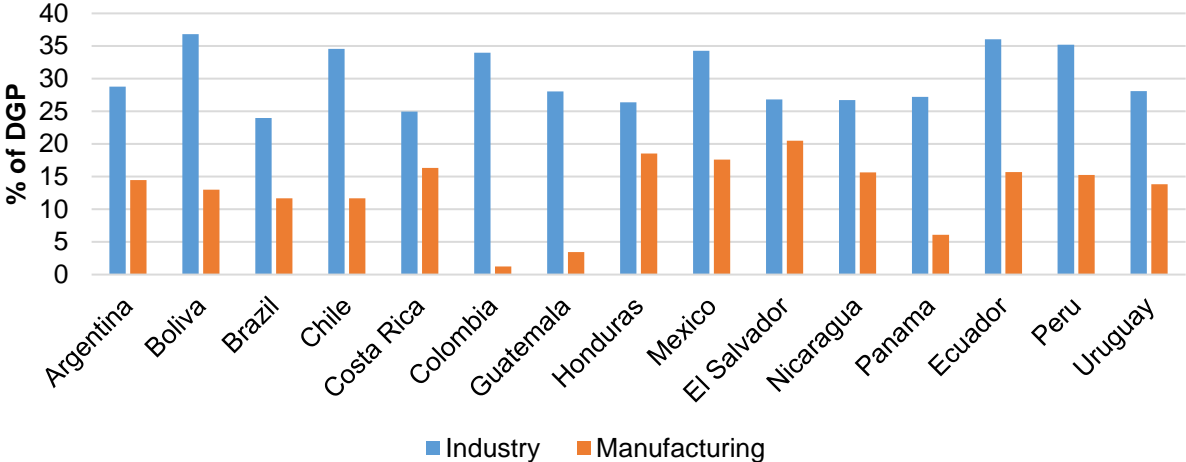
4.9 Industry

Although the services sectors contribute more than 50 percent to GDP of most Latin American economies, industry, especially the commodities sectors, plays an important role to development and exports. Over the past decade, Latin American industrial development has focused heavily on natural resource extraction where manufacturing as a percent of GDP has declined across most Latin economies besides for Mexico. Due to the lack of industrial diversification and value addition to the commodities sectors, most Latin economies are currently experiencing low growth and others recession stemming from commodity price volatility and lagging in overall economic competitiveness.

While Latin America has improved in terms of factor accumulation in both human and physical capital, productivity is still low in comparison to Asia (IDB 2014). One of the main challenges faced

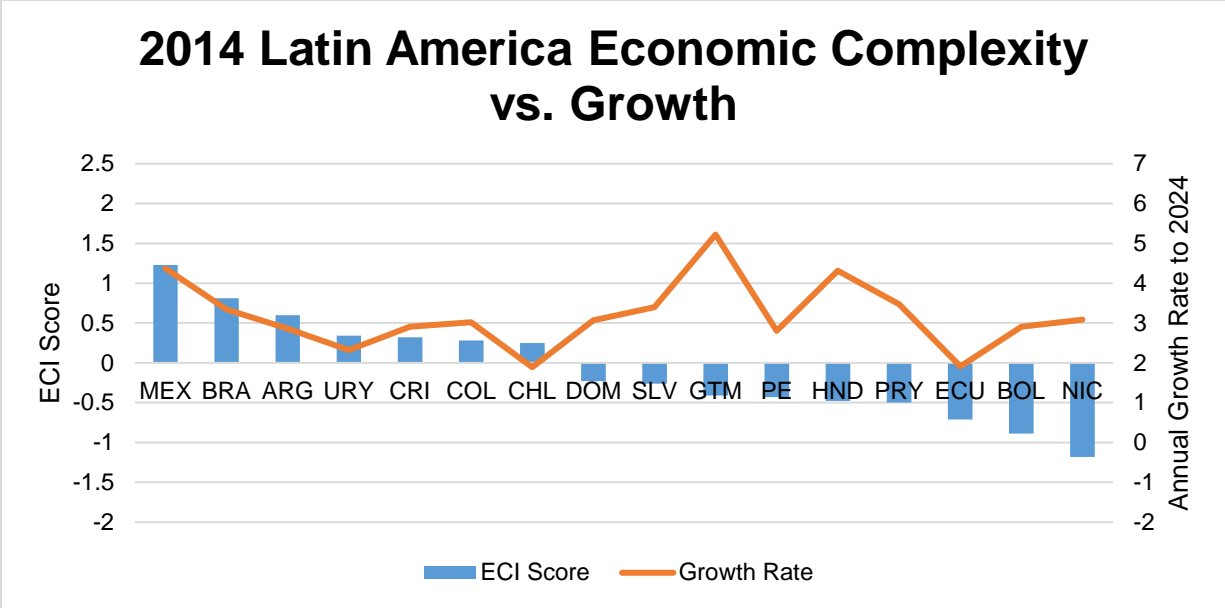
by Latin industrialization is that many economies implemented import substitution policies rather than comparative advantages. By not focusing on what they do best and trying to develop less productive industries in comparison to the competition, many Latin companies were not able to compete or expand outside of their home economy, which heavily protected respective industries. Moreover, when resource rich companies excelled during the commodities boom, many companies focused on the lower value extractive activities rather than adding value through processing, refining, and finishing goods. As such, there is a dearth in Latin GVC integration, intermediate goods trade, and upgrading in productive processes.

2014 Industry and Manufacturing % of GDP



Source: World Bank Data

Aside for Brazil and Mexico, and to some extent Argentina and Costa Rica, most Latin economies have relatively low or basic levels of manufacturing. Economies such as El Salvador and Honduras have comparatively high levels of manufacturing as a percent of GDP in comparison to most neighboring economies, but a majority of this is focused on lower value activities such as cut, make and trim in the garments sector. Colombia and Guatemala, which both have strong proportions of industry to GDP have very low levels of manufacturing, meaning that very little value added or advanced job creation is happening outside of resource extraction. To better incorporate into GVCs, Latin economies will indeed need to re-focus on adding value and move away from or diversify within commodity exploitation. By doing so, the region can produce a greater number of products and specialize in various processes to compete globally. While public sector intervention is often discouraged for “picking favorites” within industries, there are industrial policies that can support industry growth in sectors deemed of primary importance for their growth, job creation, or commodity utilization efficiency. For example, Costa Rica actively sought to create a medical device industry. While the economy was successful in manufacturing some basic products, it was more difficult to evolve into more advanced production. As such, a new focus emerged to establish a sterilization industry. By combining medical device production with sterilization, a number of foreign investors entered the market and now, Costa Rica exports a relatively large number of therapeutics and medical instruments abroad (IDB 2014).



Source: Atlas of Economic Complexity 2014

The chart above highlights that Latin American economies are not as comparatively complex as Asia. That being said, the theory of economic complexity states that those economies of medium level complexity have the most potential to improve and grow, which most Latin economies are of intermediate levels of complexity. A current challenge in Latin America in terms of economic complexity across economies is that many economies produce similar or substitute goods without substantial value addition. This limits the regions desire/need to trade intra-regionally. Moreover, Latin America is without a strong lead economy to invest in and drive competitiveness in other economies. While Mexico is considered the most complex economy in the region, productive processes are heavily focused towards North America. Brazil is indeed the largest economy in Latin America, but unfortunately their economy and companies are typically internally focused and currently stuck in recession and political volatility. Given the structure of Latin economies, this brings an opportunity for the region to attract investment from abroad to bring new capabilities and productive activities to help the region evolve. Asia should be one of these target regions to spur further industrialization and GVC integration.

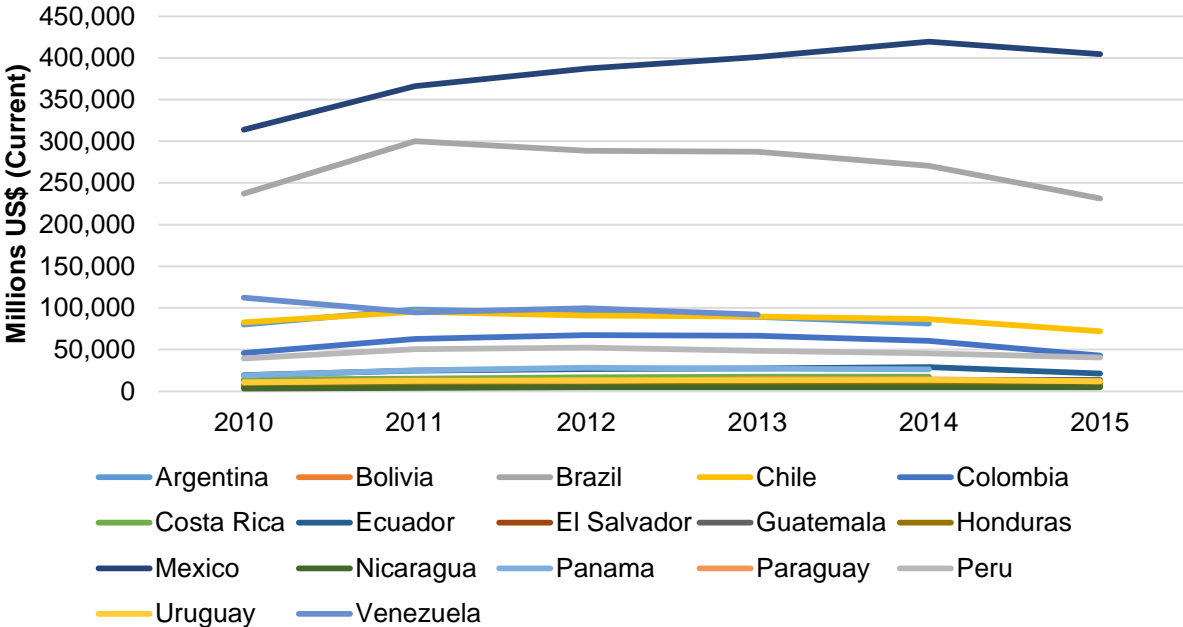
4.10 Trade and Foreign Direct Investment

4.10.1 Trade

International trade with Latin America has been turbulent over the past decade. During the commodities boom, the region experienced reasonable trade growth from 2003 to 2008 until the global financial crisis which rocked both imports and exports. Following the drop, trade increased for another two years where in 2012 the region experienced significant declines in terms of value in both imports and exports, which has lasted for almost four years. ECLAC reported in 2015 that the “fall in export values for three consecutive years has not been seen since the great depression.” This highlights the significance of the post financial crisis shocks combined with exposure to China’s slowing economic growth and reduced demand for raw commodities.

A primary challenge for Latin international trade is that production and exports are relatively undiversified and too heavily focused on natural resources, low-technology goods, and limited added value (Rosales 2014). Moreover, there are comparatively few Latin American companies exporting at all. In 2011, it is estimated that there were 113,000 export companies across the fourteen largest Latin economies (ECLAC 2015). There has been little specialization or upgradation by Latin firms to excel in terms of or intermediate goods trade. This long time focus on raw commodities is hindering the region’s ability to combat price volatility which has put a number of economies into recession with most Latin economies growing at a slow pace. Although the region as a whole is facing trade challenges, there are differences between Central and South America. Central America economies are relatively better integrated into GVCs (especially Mexico), capitalizing off their proximity to the United States. As such, Central American economies have a larger proportion of manufacturing to their exports than commodity focused South America. Thus, Central America should be looking to upgrade its manufactures and utilization of natural resources to diversify the structure of economy and improve added value.

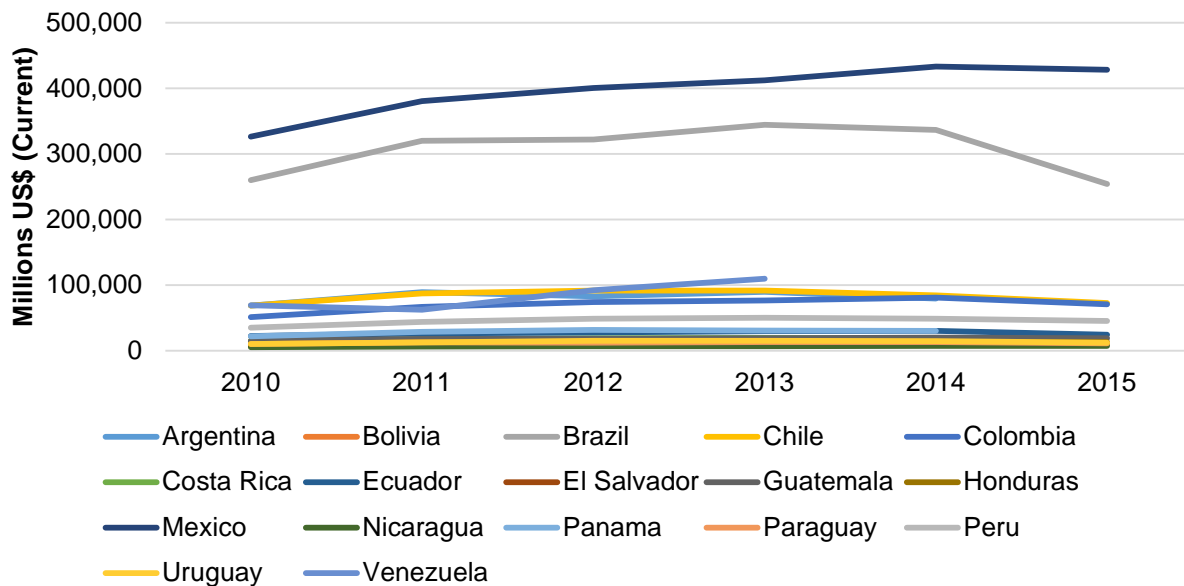
2010 - 2015 Latin American Exports



Source: World Bank Data

Unfortunately, South American exports were dominated by commodities, most of which have experienced significant price drops. Major agricultural exports such as soybeans (down 24 percent in 2015), coffee, and sugar as well as abundant minerals iron (down 43 percent in 2015) and copper (down 20 percent in 2015) are all down. (Giordano 2016). This price volatility is proving incredibly challenging to a number of South American economies, especially Brazil and Venezuela where political stability is deteriorating in tandem with economic problems. While export volumes have increased, price decreases have not eroded the value of the increased exports. Prices are stabilizing somewhat in 2016, but it is expected that export values will still be lower than 2015 by year end.

2010 - 2015 Latin American Imports

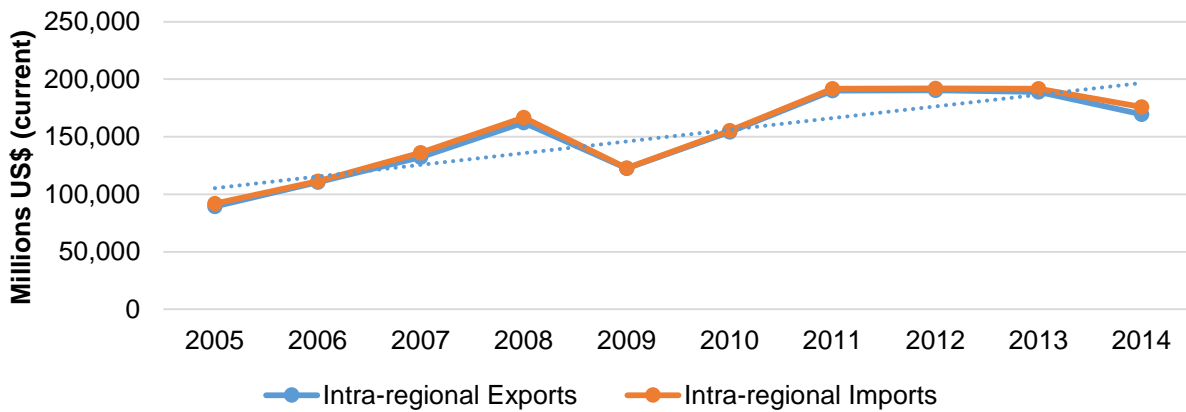


Source: World Bank Data

Imports are also expected to decrease due to deteriorating economic activity, albeit less than exports. The commodity boom indeed raised incomes and excess capital that supported a growing middle class fueling consumption. As Latin America imports a large amount of consumer and finished goods from abroad, strong domestic demand for goods and services is expected to outpace export growth (Rosales 2014). Although import substitution strategies are often frowned upon as they do not support competitiveness, initiatives to excel in added value activities to specific domestic competitive advantages could bolster exports and support growth in product lines that can be used locally as well. Downstream investments could also spark trade in intermediate goods and services, that although it may increase the gross number of imports, companies can add value and re-export to recoup the trade balance.

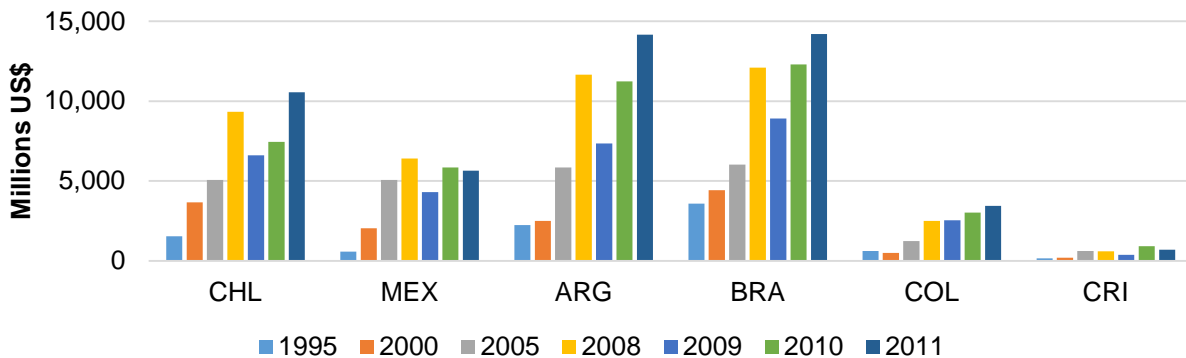
While intra-regional trade grew during positive economic times, Latin trade flows contract during downturns. As stated before, Latin economies supply relatively similar products and commodities where manufacturing, specialization, and intermediate goods trade has not grown substantially. Economies such as Argentina; Brazil; Chile; and Mexico have indeed realized intermediate goods trade, but gross figures pale in comparison to that of Asia. Due to the dearth in diversified products and processes, this gives an opportunity to institute industries that supply locally demanded products. Whether these companies originate domestically or through MNC FDI, there are opportunities to instigate businesses to support economic growth and trade development.

Central and South American Intra-regional Trade



Source: UNCTADSTAT

Central and South America Intra-regional Intermediate Goods Trade

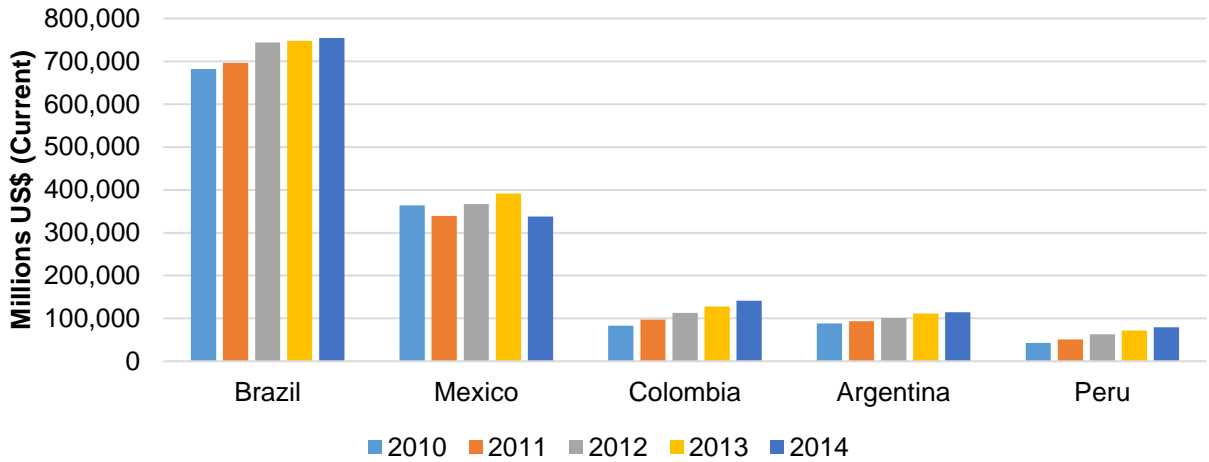


Source: OECD Trade in Value Added

4.10.2 Foreign Direct Investment

Global FDI flows increased 36 percent in 2015, reaching the highest levels since 2007. Although FDI stock has been growing across most of Latin America, both FDI inflows and outflows have been slowing since 2012 where stock witnessed its first decrease in 2015. 2016 continues to realize declines in FDI due to a challenging global economy, reductions in commodity prices, and lack of overall competitiveness. As such, 2015 FDI inflows to Latin America, including the Caribbean, decreased 9.1 percent. Brazil continues to be the primary investment destination in Latin America, but the BRIC economy realized a year on year reduction in FDI flows of 23 percent in 2015, accounting for a majority of the FDI deterioration in Latin America. On the other hand, Mexico, the Latin economy most integrated into GVCs, received 18 percent more FDI in 2015 in comparison to 2014 while the rest of Central America grew by 6 percent (ECLAC 2016).

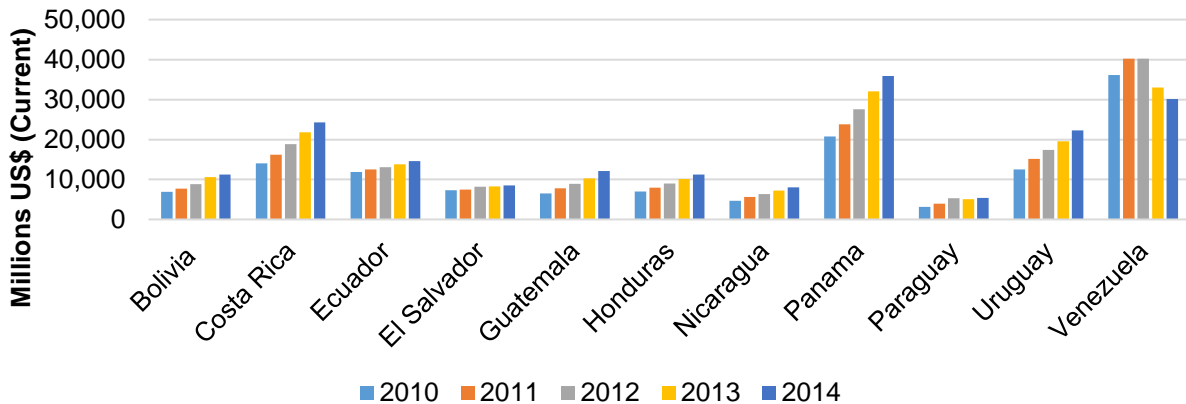
Latin America Middle Income FDI Stock



Source: UNCTADSTAT

The United States, the Netherlands, and Spain were the most significant investors in Latin America in 2015. The services sector continues to receive the most FDI while investment into the natural resources sector has declined. Investments continue to flow into the manufacturing sector, but a vast majority of Latin manufacturing investment is into the automotive sector geared towards Brazil and Mexico. The continued declines in South American FDI and growth in Latin America should highlight the importance of diversifying an economy, adding value to productive processes and better integrating into GVCs. GVC theory states that FDI is an incredibly important mechanism to integrate into GVCs, but without sufficient institutions, efforts to add value, and challenges to business operations, foreign investors can take their money to other economies with more potential. As such, it is critical for Latin America to consider each of the factors presented in this report to find areas to reinvigorate FDI and domestic productivity growth.

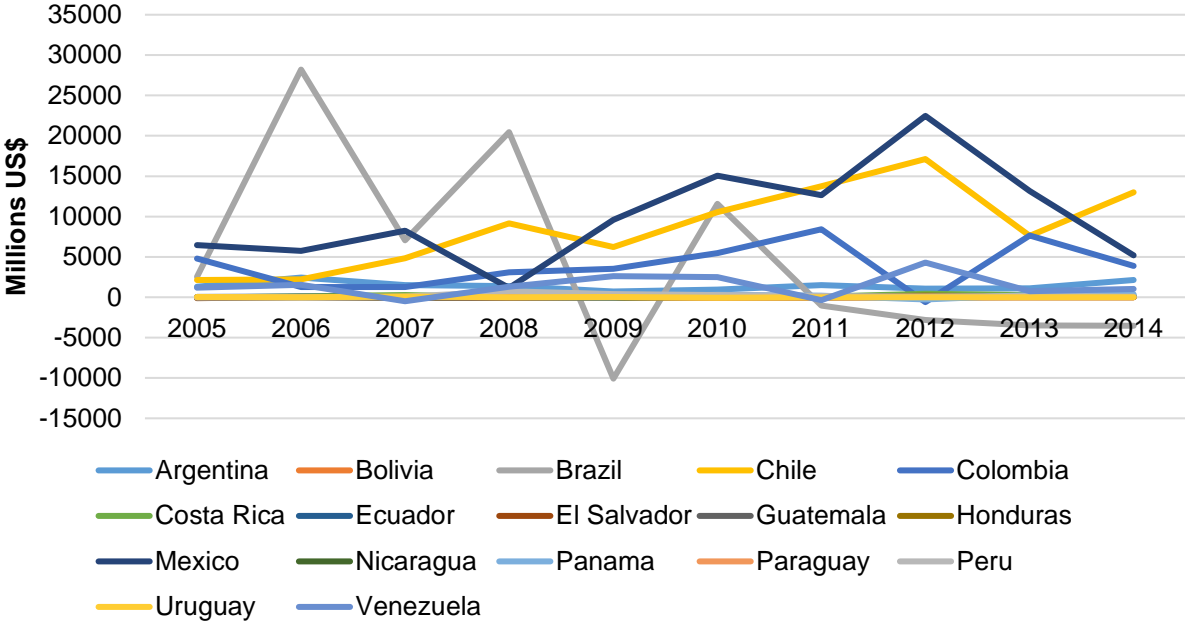
Latin America Lower to Mid Income FDI Stock



Source: UNCTADSTAT

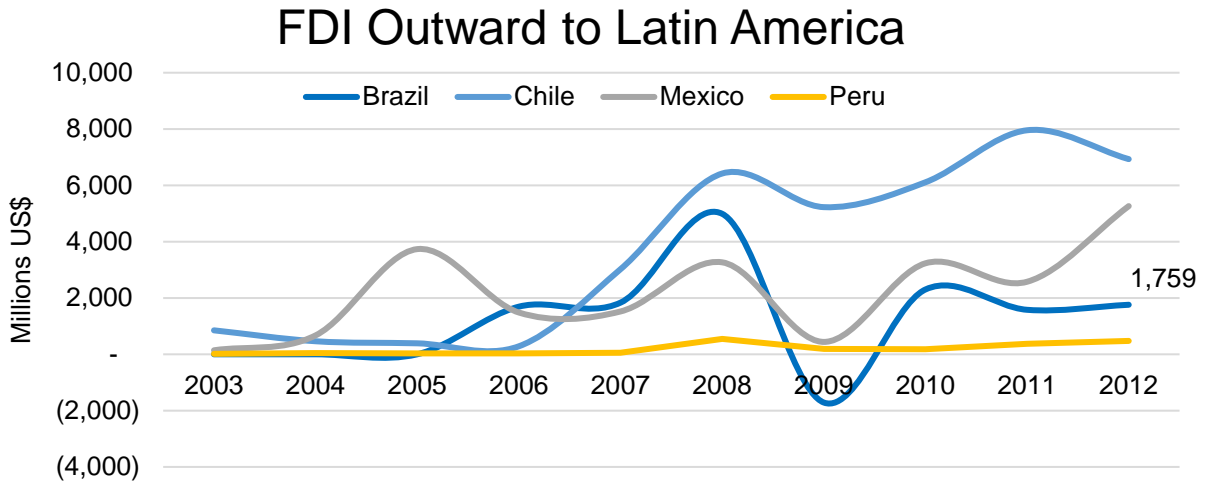
In comparison to other regions, Latin American economies are not heavy outbound investors. Out of all Latin America; only Brazil; Chile; Colombia; Mexico, and to a lesser extent, Argentina, invest abroad. Moreover, these investment flows are quite volatile. While Brazil was the top outbound investment economy in 2006, the economy seems to be more on a repatriation trend rather than increasing investments. For Chile; Colombia; and Mexico, OFDI is still positive, although these investments pale in comparison to the investments Asian economies such as China; Japan and Korea, instigate abroad.

Latin American OFDI



Source: UNCTADSTAT

Latin OFDI in Latin America itself is still less than other regions, including Asia. Outbound FDI from Latin America was down 15 percent from 2014 as Multilatinas retrench. Chile continues to be the largest outbound investor into the region with solid investments into the retail sector while Brazilian investments abroad are declining. Mexico is also taking a more proactive role in the region, where FDI flows increased by 62 percent from 2014. Colombia and Peru are also now investing in the region, Peru mostly in South America and Colombia making headway in Central America (ECLAC 2016). While there are some outbound investments to other regions such as Asia, these figures are comparatively small to Asian or more developed economies. Moreover, the Latin investments outside of the region tend to be horizontal and led by large Latin conglomerates that have the capital to grow abroad. Although gross outbound FDI figures are less than 2014, the intra-regional investments are slowly building both regional and GVCs.



Source: UNCTADSTAT

4.11 Challenges and Opportunities for Enhancement of GVCs

The above analysis highlights the challenges Latin America faces when trying to incorporate into GVCs. Under-diversified economies and relatively similar product offerings across economies, exposure to volatile commodity pricing, dearth in infrastructure, socio-political challenges, inefficient institutions, lack of R&D spending and company/product upgrading, etc. hamper the region's ability to better connect within Latin America and abroad.

While there are substantial challenges, Latin America has incredible opportunity to improve. With a wealth of natural resources, public sectors and businesses can invest in downstream activities that better utilize the comparative advantage in commodities. Infrastructure can be improved and extended to open domestic markets to improve accessibility to wider portions of society, connect to neighboring economies, and facilitate international trade and investment. Partnerships between universities, companies and public sectors can be made to focus research initiatives and train students so they can be prepared for full time jobs. The public sector can look internally and improve institutions to provide quality, efficient, and transparent public services. Domestically, each economy can stimulate change to not only enhance their own socio-economic standing, but also overall attractiveness to foreign investors.

Latin America can also seek assistance from abroad to better integrate into GVCs. Global markets offer an abundance of technologies, financing, goods, and services that can be utilized to leapfrog anachronistic ways of doing business to catapult into modern industry. With relatively close proximity to North America, Latin economies can look to attract investments into more labor intensive industries based on the relatively lower wages and create employment opportunities and enhanced industrialization. Europe will continue to be a significant trade and investment partner in Latin America, providing added value goods and services as well as technologies to enhance operations. Finally, although Asia is a distant region with differing cultures and languages, Asia's impressive growth and industrialization over the past three decades can help connect Latin America into GVCs. Asian companies from Japan; China; and even some of the

emerging Asian economies are already investing in and trading with Latin America. Japanese automotive companies are bringing in the technology and knowhow to supply quality vehicles, provide training, and localize product offerings. Chinese commodity companies are investing in the region and can be tapped to develop downstream industries. Emerging Asian markets, which have a similar level of development as many Latin economies, can trade unique products and share knowledge on how to excel in various industries. While it may take a long time to get from Latin America to Asia, enhanced connectivity will benefit both regions and open the great potential of Latin America.

Although Latin America is in a depressed state economically with challenging socio-political issues, there is great opportunity to improve in the medium term. It is incumbent upon each economy to seek stability and efficiency improvements to better integrate into GVCs. Preferential trade agreements such as Pacific Alliance can enhance interest to signatory economies and expand cooperative prospects. International forums such as APEC can bring economies together to discuss how economies can better cooperate. Educational and cultural exchange programs, tourists, and economic migrants will improve the understanding of and about regions and populations. As time goes along and economies give their commitment and efforts to improvement, Latin America will become increasingly integrated into GVCs while also enhancing economic activities.

5. Case Studies

5.1 Chilean Salmon in the GVC

The salmon sector is a good example of how an economy can not only integrate into GVCs but also reach a leading position in the global markets for a specific commodity. This case study intends to illustrate how Chile became a global leader in the Salmon value chain, what factors enabled the development, the current challenges and future opportunities to further enhance the benefits for the economy and how Chile plays a key role in Asian markets.

5.1.1 Introduction

Salmon is the common name for several species of fish of the family Salmonidae (e.g. Atlantic salmon, Pacific salmon), while other species in the family are called trout (e.g. brown trout, seawater trout). Several of these species are available from both wild and farmed sources. Salmon live in the Atlantic and Pacific Oceans as well as the Great Lakes (North America) and other land-locked lakes. Typically, salmon are anadromous: they are born in fresh water, migrate to the ocean, then return to fresh water to reproduce. Approximately 75 percent of all salmon supplied to the fish industry comes from a farmed source. Atlantic salmon are the main variety of farmed salmon. Salmon demand is increasing in popularity driven by its positive health qualities because its high content of protein and Omega-3 fatty acids as well as being a good source of minerals and vitamins.

The main production areas for Salmon are within certain latitude bands on the Northern and Southern Hemisphere that meet very specific natural conditions of water temperature ranging from zero to 18-20 Celsius and water currents. Such conditions are typically found in waters sheltered by archipelagos and fjords. These conditions are prohibitive for several coastlines. Other biological parameters required to support efficient production vary significantly within the adopted areas with other areas facing constraints. With these natural constraints the world supply of farmed salmon production is largely based in Norway (53 percent of world output), Chile (24 percent), the United Kingdom (mainly Scotland – 9 percent) and Canada (6 percent). Other economies in the world with potentially favorable natural conditions include New Zealand and Russia, which only have small scale production facilities.

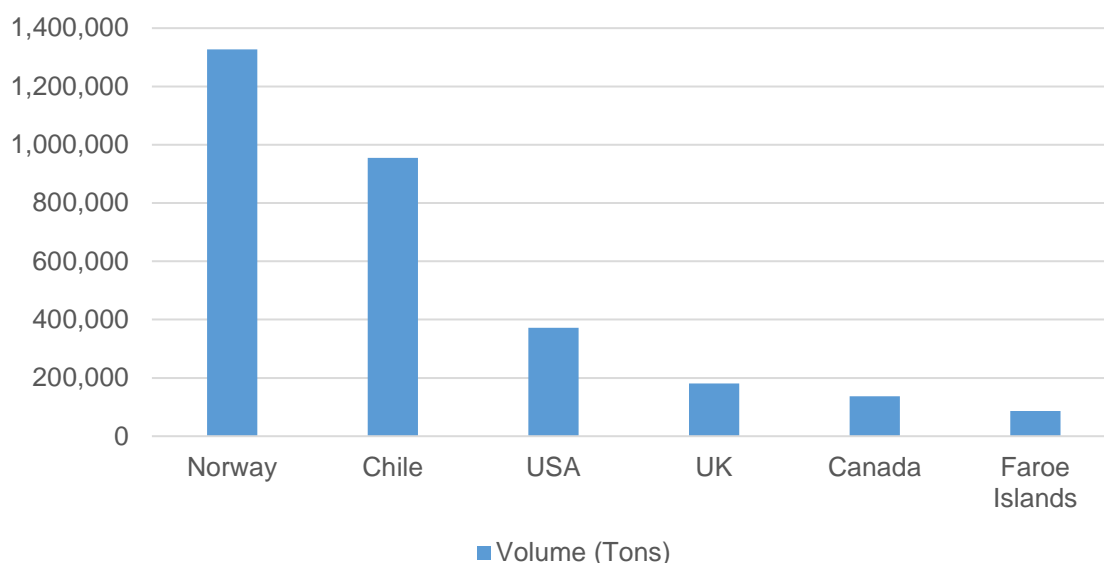
5.1.2 Production and Trade Value

Current supply of farmed Atlantic salmon stands around 2.2 million tons per year. The supply of Atlantic salmon has increased by 428 percent since 1994 (annual growth of 9 percent). Though annual growth has slowed in recent years, the sector still grew at an annual average of 6 percent in the period 2004-2014. Growth is expected to diminish further going forward and is projected at 3 percent annual growth from 2014 to 2020 according to Kontali Analyse.

The background for this trend is that the industry has reached a production level where biological boundaries are being pushed. It is therefore expected that future growth can no longer be driven by industry/regulators decisions alone, but rather be subject to implementation of means to reduce

the industry's biological footprint. This requires progress in technology, development of improved pharmaceutical products, implementation of non-pharmaceutical techniques, improved industry regulations and intercompany cooperation. Therefore, in addition to the natural conditions, political willingness to allow for salmon farming and to regulate the industry is also required as uncontrolled salmon farming is found to have negative biological and social impacts.

Top Production in the World, 2014



Source: FAO Global Production Statistics

5.1.3 Markets

Due to geographical factors, the principal markets for farmed salmon differ depending on the production regions. Specifically, Europe and Russia are the markets for Norwegian-farmed salmon and North America, South America and Japan are the main markets for salmon from Chile. The United States' and Canadian farmed salmon typically are sold locally in North America. Scotland salmon is sold mainly in the UK with limited exports.

Each producing region has historically focused on developing nearby markets. As salmon was primarily marketed as a fresh product, time and cost of transportation has driven this trend. A relatively high price differential is therefore required to justify trade across the Atlantic as this requires the cost of airfreight. Such trade varies from period to period and depends on arbitrage opportunities arising from short term shortage and excess volume from the various producing economies. The Asian market is generally shared by all the producing regions as the transportation cost is quite similar from all origins. The degrees of freedom with respect to distribution of frozen salmon is obviously much greater. Europe (incl. Russia) and North America are by far the largest markets for Atlantic salmon. However, emerging markets are growing at significantly higher rates than these traditional markets. The market for Atlantic salmon has, on

average, increased by 6.3 percent in all markets the last ten years and by 8.7 percent the last twenty years.

5.1.4 Value chain in Salmon Industry

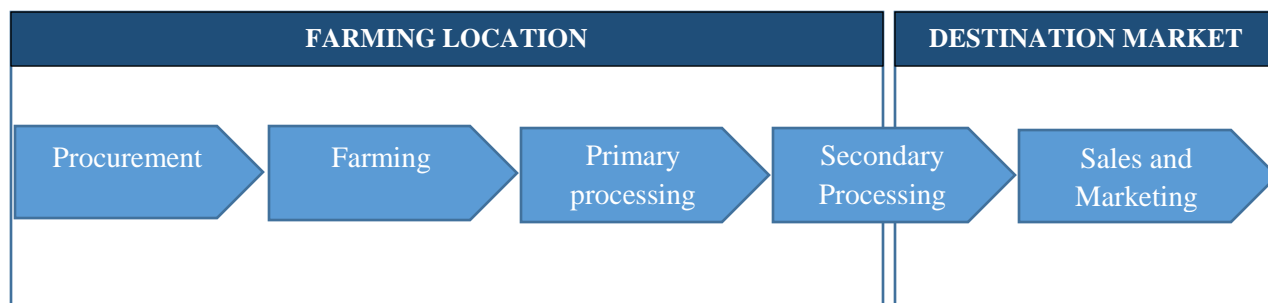
The salmon value chain cycle is about three years and is divided in three different stages from farming, processing, and marketing and retail. The farming involves the fertilization of the eggs, initial smolt development in controlled freshwater environment and the growth of the salmon in seawater during a period of 14-24 months. This process takes place in the producing locations like Chile or Norway as production is very dependent on the natural environment, water temperature and conditions. The second stage in the value chain includes the primary processing slaughtering and gutting as well as the secondary processing when the fish is prepared in its final consumption format like filleting, fillet trimming, and portioning, different cuttings like cutlets, smoking, ready-made meal or packing. While primary processing is done in the farming locations, the secondary processing can be done either in the production economy or closer to the final markets. The third stage includes the marketing activities that connect producers and buyers and bring the products to the final consumer like retailers, restaurant or wholesalers depending on the distribution channel.

In stage one, key requirements are the natural conditions. Salmon cannot be commercially bred anywhere and, as previously mentioned, specific latitudes in the north and southern hemisphere and special water conditions are necessary limiting the number of locations where Salmon can be farmed. Secondly, salmon farming requires advanced breeding techniques and technical knowledge that have been developed over years of research. This know-how has been developed in the leading locations like Norway, however, Chile has also developed these capabilities in cooperation with local and MNC stakeholders. Today, foreign companies contribute their technical expertise and fuel new developments for growth and improvement. Moreover, these MNCs often cooperate with domestic companies by using local products and services.

The second stage in the value chain, product processing, takes place in locations driven by labor costs and/or proximity to the final markets. Thus, some companies will import semi-processed frozen salmon that are processed to the final products by filleting, fillet trimming, portioning, different cuttings like cutlets, smoking, making ready meal or packing for example in Japan or United States. The case of Thailand is a good example of processing imported salmon and trout that is cleaned, cut and canned for export to the world. Similarly Norwegian salmon destined to Europe is processed in Poland that offers labor costs much lower than in Norway and immediate access to Europe market.

Sales and marketing includes the activities that brings producers and buyers together. These include developing product branding, sales efforts, establishing partnerships with buyers, long term supply contracts, etc. The level of effort on these activates significantly varies from one company to another. While big multinational companies are involved in the whole value chain from production to retail, such as Marine Harvest, Nissui, and Mitsubishi, they have management control over the whole process and can capture value out of the marketing activities most of the smaller producers do not participate in. Smaller companies typically only supply commoditized

products at prices fixed in global markets beyond their control or influence with importers capturing most of the added value.



5.1.5 Chilean Salmon Industry

The origins

Until a few decades ago, no salmon could be found in Chile. Salmon originally lived only in the northern hemisphere. Japan began to participate in an initiative of the Chilean public sector to develop a salmon farming industry, launching the “Japan Chile Salmon Project” in 1969. Cooperation between the two economies ensured decades of collaboration between Japan International Cooperation Agency (JICA) and Chile’s Ministry of Agriculture (SERNAP) and Institute for Promotion of Fisheries (IFOP), providing critical initial technology and infrastructure inputs to establish the viability of the new sector (IDB 2016). The public sector of Chile aspired to improve the living conditions of the population and diversify the economy by developing a salmon farming industry.

The following year, JICA dispatched specialists to Chile and delivered Masou salmon eggs from Hokkaido that were released in Chilean rivers in 1973. The Japanese specialists introduced chum and pink salmon and switched from stocking to marine aquaculture. They also decided to cultivate salmon eggs locally instead of importing from Japan. The efforts of the local staff and JICA specialists finally paid off. Fundación Chile, a semi-governmental organization that functioned as an industrial and technology development body, acquired Domsea Pesquera in 1981, established Salmones Antártica in 1982, and proved the commercial viability of large-scale farming, breeding and production of salmon. The rapid growth of Salmones Antártica stimulated private interest and led to the expansion of the industry (UNCTAD 2006).

From 1987 onward, the focus of assistance shifted from transplantation of salmon to full-fledged aquaculture. As Chilean salmon farming moved from the experimental phase to a viable industry, Japan moved to transfer the technologies needed for aquaculture, including systems for fish disease control and the development of high quality formula feed. Local private enterprises joined the bandwagon, and by the conclusion of JICA’s assistance, Chile boasted a robust salmon industry and Japan had become the largest importer of Chilean salmon. The JICA assistance program ran its full course and produced a successful outcome. To this day, the Chilean technicians who had engaged in the project continue to contribute their skills to support the industry.

Experimental < 1985	Commercial production start 1985-1990	Fast growth market penetration 1990-2000	Consolidation 2000-2010
<ul style="list-style-type: none"> • Technology Transfer 	<ul style="list-style-type: none"> • First commercial scale production • Association • Specialization starts 	<ul style="list-style-type: none"> • Production increase • Market penetration • R & D 	<ul style="list-style-type: none"> • Comprehensive regulation • Private/Public Cooperation • Vigilance programs • SIGES

Source: Evolution phases of the Chilean salmon industry, adapted from Alvial, 2011

The Chilean salmon industry exceeded 10,000 tons production in 1991. However, by 2005, Chile was the fastest-growing salmon producer in the world, having overtaken Scotland (in 2000) as the second largest producer of Atlantic salmon in the world and was on a course to overtake Norway as the number one producer. Currently Chilean salmon exports account for 5.12 percent of Chilean total exports and salmon has become one of the most important drivers in Chile's export growth over the past 20 years. The industry directly employs more than 60,000 people and indirectly another 100,000 involved in supplying the goods and services to the salmon industry and the people in the production regions.

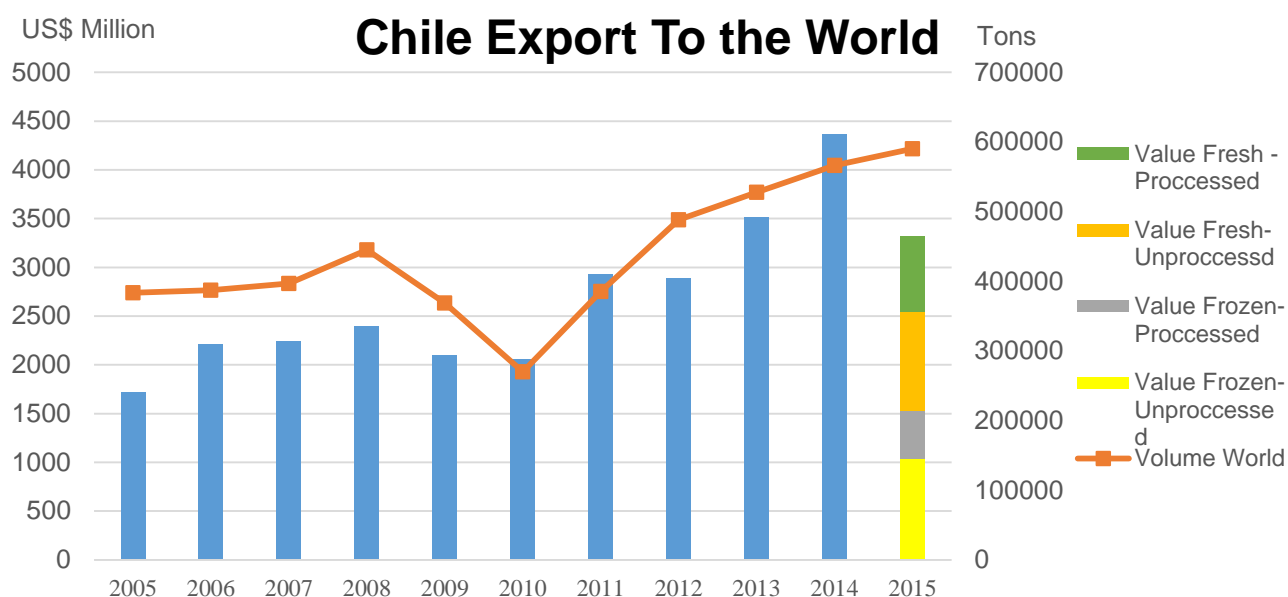
5.1.6 Production structure and FDI

There are more than 1,000 commercial licenses in Chile for the production of Atlantic salmon, but only around 300 are in operation. The twenty largest license- holding companies represent 87 percent of the market (Marine Harvest, 2016). The top ten companies account for approximately 78 percent (416,000 tons) of the total production (531,000 tons).

Foreign investment plays an important role in the Chilean salmon industry. This is evidenced by the fact that companies with foreign ownership account for almost 40 percent of Chilean production. Especially significant is the case of Japanese involvement in the Chilean salmon sector with multinational companies having direct or indirect control in Chilean companies. Japanese giant Mitsubishi has been involved in the Chilean salmon industry since 2011 through its affiliate Southern Cross Seafoods that owned Salmones Humboldt and acquired Norwegian global salmon producer, Cermaq. This consolidation and international cooperation created the world's second largest salmon company and bolsters Chile's international economic connectivity. Japanese marine product company Nissui has also been working in Chile since 1988 through Salmones Antartica, producing mainly trout and coho salmon. Another recent example of Japanese investment in Chile is the case of Japanese trading giant Mitsui that has taken a US\$ 100 million stake in Chilean salmon producer Salmones Multiexport.

5.1.6 Chilean Salmon Value Chain in Asia

Chile salmon farming industry supplies more than 70 international markets. In 2015, salmon exports reached 590,000 tons with a value of US\$ 3.5 billion. Major export markets include Brazil; Japan; and the United States. Asia is the biggest export market for Chile accounting for 35 percent of total Salmon exports in volume (177,000 tons) followed by North America (130,000 tons). However, when considering the export value to NAFTA (Canada; Mexico; and the United States), it is the leading region with 30 percent, followed by Asia in second place with 25 percent. Both in terms of volume and value, the regions geographically closer to Chile such as NAFTA and South America account for almost half of Chilean exports evidencing the importance of proximity and ease of logistics and transportation.

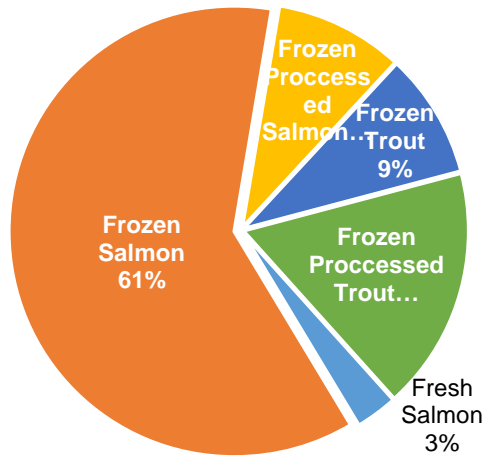


Source: International Trade Centre Trademap

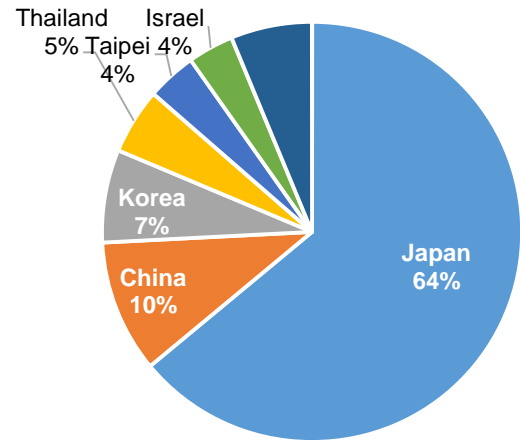
Fresh salmon, either processed as fillets or unprocessed (bled and gutted), accounts for 53 percent of exports and are primarily sold to North and South America markets while frozen products are destined for Asia. The main reasons behind this is because Asian is so far away and logistics constrains add risk of product spoilage and loss. Chilled products are transported by air to Brazil and North America where direct air connections with short transit times are available. The long distance from Chile to Japan and the lack of direct connections make it more risky to transport chilled products to Asia.

Asia imports frozen products from Chile where Japan accounts for 64 percent of total imports, mainly frozen Pacific salmon and trout. Other importers in Asia include China; Korea; Thailand; and Chinese Taipei. Thailand is a unique example of value chain participation as salmon is imported not only for local consumption, but also for processing and re-exports to Asia and other economies in the world as evidenced by trade statistics for processed salmon products showing Thailand as the third supplier to Asia after Norway and Chile.

**Chile Salmon Export to Asia 2015
Breakdown by product**

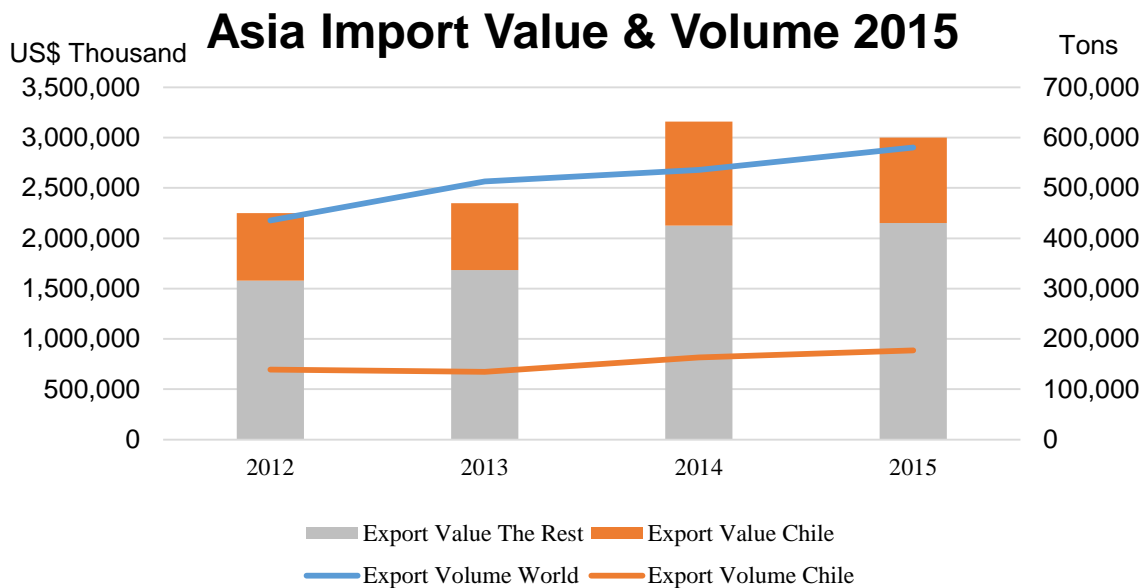


**Chile Export Salmon to Asia
2015, break down by destination**



Source: International Trade Centre Trademap

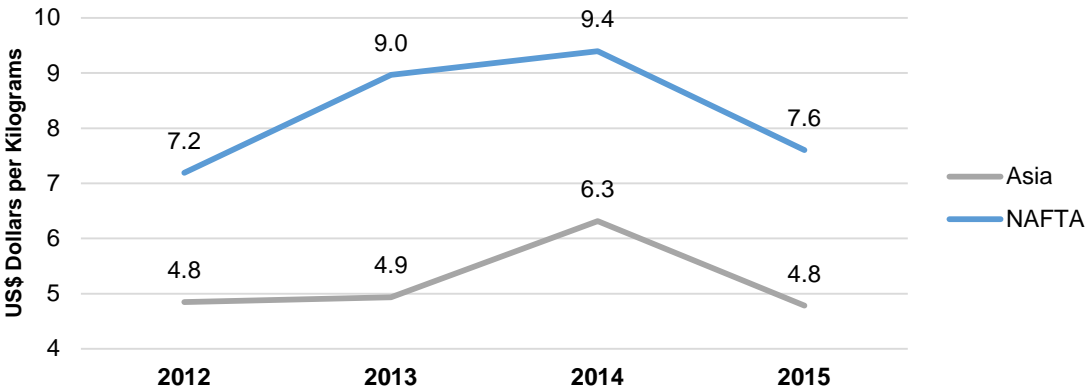
An analysis of the supply of salmon from an Asian perspective reveals that Chile accounts for 39 percent of Asian import volume but only 31 percent of the value. The rest of world, on the other hand, supplies 61 percent of the volume but captures 69 percent of the value based on fresh added value and efficient cold chain storage and transportation. Most Asian salmon imports corresponds to unprocessed (gutted without head) products, 76 percent versus processed 24 percent, and frozen 59 percent versus fresh 41 percent. Chilean exports value to Asia have grown by 26 percent in the 2012-2015 period while export volume have been slightly higher at 28 percent, representing averages annual growth rates of around 6 percent.



Source: International Trade Centre Trademap

The main Asian market, Japan, imports mainly unprocessed salmon that are converted into final products for retail. Japanese consumers have a preference for fresh products that are prepared for consumption by small processors, retailers and in the hotels and restaurants. Norway is the main supplier to Asia in three product categories including fresh processed, fresh unprocessed and frozen processed salmon while Chile is the clear leader for frozen unprocessed. This product specialization by economy responds to two main factors, fresh products are perceived as higher quality and Norwegian origin has a better consumer recognition resulting in higher value per kg. Due to logistics constraints, fresh salmon is supplied mainly by Norway while frozen products come from Chile. Frozen salmon can be used both for consumption or to manufacture salmon derivatives. Other direct competitors with Chilean frozen unprocessed salmon includes the United States and to a lesser extent Russia.

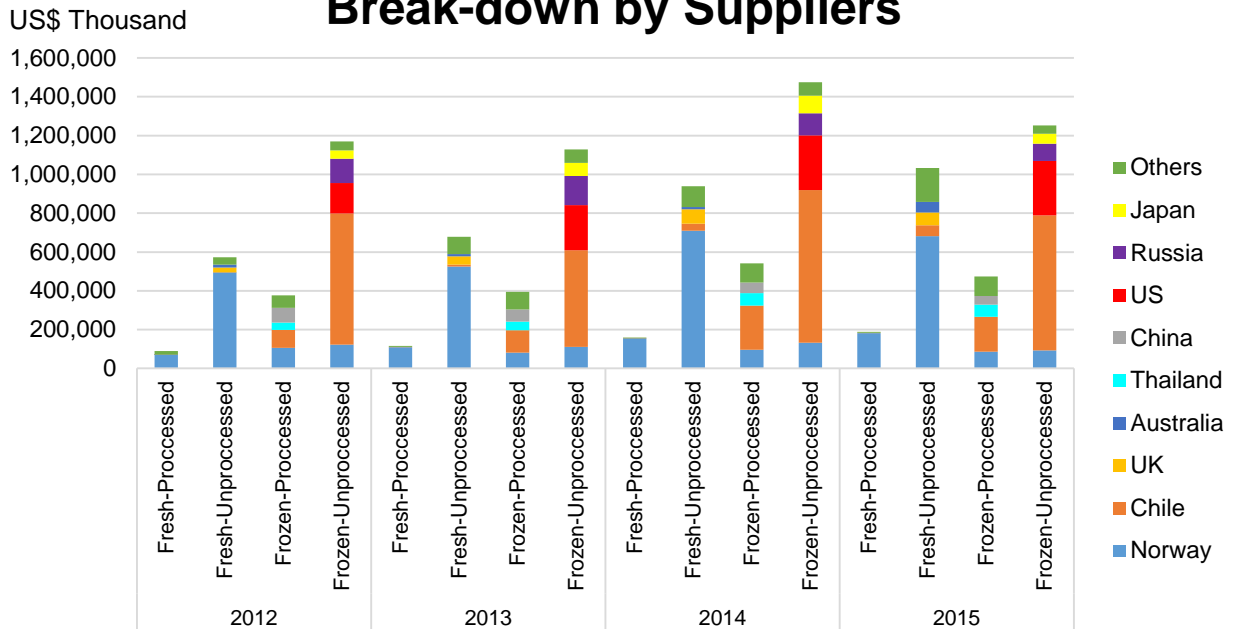
Chile Regional Exports of Salmon



Source: International Trade Centre Trademap

The previous figure shows a higher average price per kg of exports to NAFTA versus average price per kilo exports to Asia. Chilean salmon exported to NAFTA is dominated by fresh products that accounts for higher value than frozen products exported to Asia. The conclusion is that Chile plays a key role in supplying Asia, especially Japan, and has a high market share but is supplying the lower value products constrained by logistics as well as branding factors.

Asia Salmon Import Value (2012-2015), Break-down by Suppliers



Source: International Trade Centre Trademap

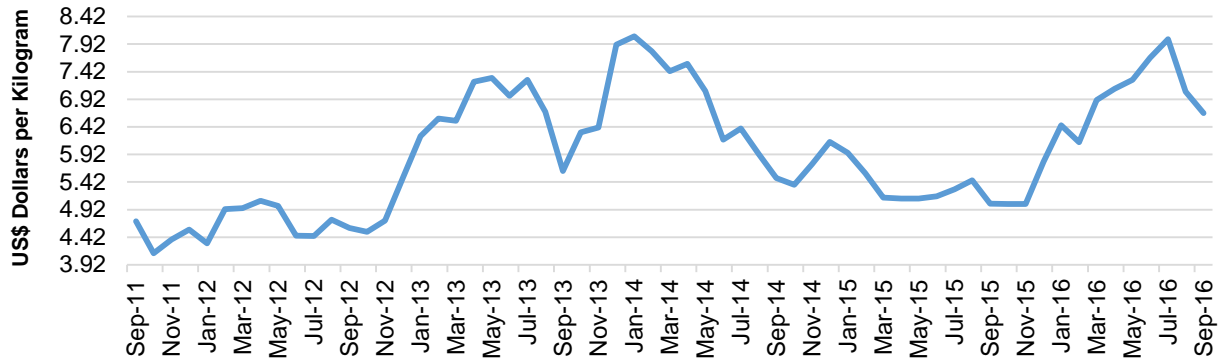
5.1.7 Factors Affecting the Salmon Value Chain

The salmon farming industry is capital intensive and volatile due to a long production cycle, a fragmented industry, market conditions and a biological production process. Participation in the GVC is conditioned by many exogenous factors that affect the global markets and the economies and companies competitiveness.

The main factors affecting market price for Atlantic salmon include supply and demand (absolute and seasonal variations), globalization of the market (arbitrage opportunities between regional markets), presence of sales contracts reducing quantity availability for the spot market flexibility of market channels, quality, disease outbreaks, food scares and economies' regulations.

Salmon prices are formed at a global scale and companies on an individual basis have very limited influence on price. Price volatility can be volatile over short periods of time with direct impacts not only on the producers' profitability but also on demand. During the last year, salmon prices have changed from around 3 US\$/lb. and by the end of 2015, to 5.2 US\$/lb (Urner Barry 2016). This represents a 73 percent price change over a six month period. This price change was the result of a disease outbreak in Chile that due to high mortality rates resulted in a significant drop in the world salmon supply.

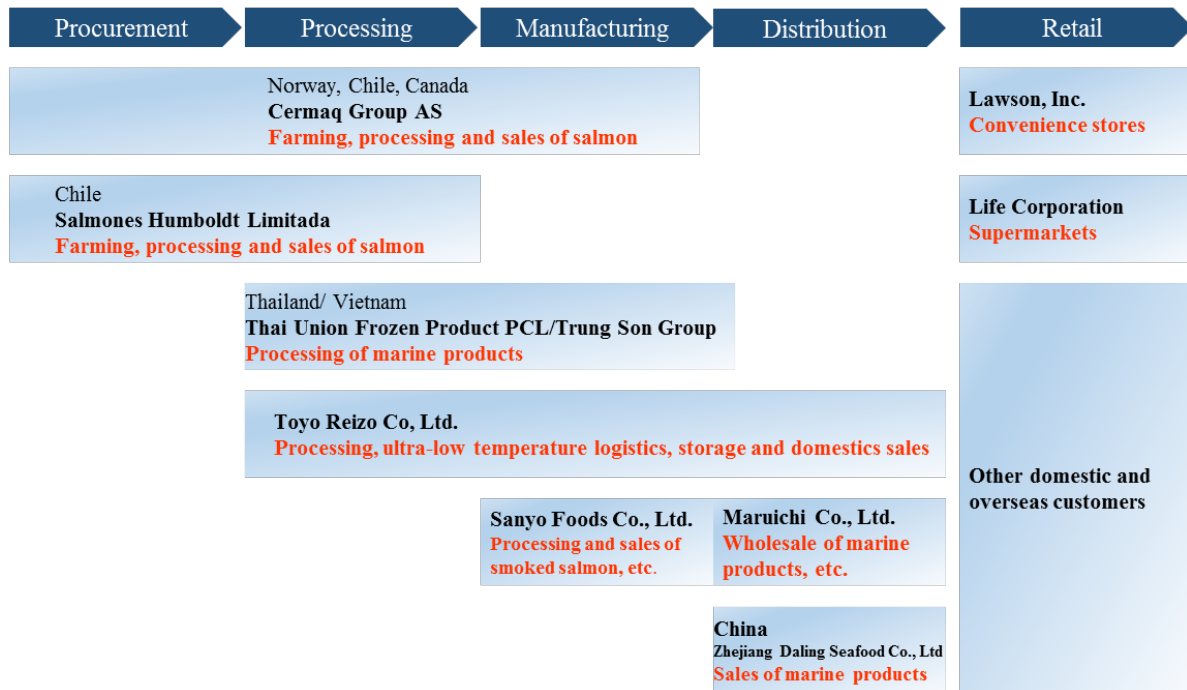
International Salmon Prices



Source: *IndexMundi.com*

Vertical integration is used by MNCs to capture added value and reduce risks. The level of integration varies from one company to another. While smaller local companies will sell commoditized products through international traders, multinational integrated companies are focusing on maintaining global governance of the value chain and being involved in all stages. Product and market diversification offer risk reduction opportunities. In the case of Chile export markets, sales are diversified and distributed across different regions, but products are focused on Atlantic salmon and small amounts of trout and Coho. Also, value added processing is a common strategy among the biggest companies. Multinational companies and producers like Nissui are focusing on moving from supplying salmon as a commodity to supplying as value added products in the form of fillets, smoked products, surimi, etc. Nissui produces Salmon and trout in Chile through its affiliate Salmenes Antartica, imports directly into Japan or to their processing plant in Thailand, where they develop and produce value added products that are sold in Japan and other economies. Mitsubishi is involved in the whole supply chain from farming to retail and distribution through subsidiaries around the world.

Salmon Farming Business Value Chain



Source. Mitsubishi Corporation Integrated Report 2015

Another potential strategy to encourage connectivity that requires less integration and scale to reduce profit volatility is to establish closer partnerships with counterparts in destination markets and focus on long term supply relationships with supply contracts where quantities and prices are agreed by both parties. These require long term vision and strategies rather than short term contracts as companies have to give up potential near term revenues in exchange for long term stability. While these strategies reduce the risk from the revenue side, they require very strong management of the production costs. Companies are trying to come closer to consumer markets. Even smaller producers in Chile have sales offices in the destination markets in Asia and United States. These companies develop partnerships with the final buyers like big retail chains or processors rather than relying on traders, and securing direct supply lines.

The second key factor affecting the salmon business is feed costs, supply and sustainability. Feed is the largest cost component for the production of salmon accounting for around half of the production costs depending on the location. Historically, the two most important ingredients in fish feed have been fish meal and fish oil. The use of these two marine raw materials in feed production has been reduced and replaced by agricultural commodities such as soy, sunflower, wheat, corn, beans, peas, poultry by-products (Canada and Chile) and rape seed oil. This substitution is mainly done because of heavy constraints on availability of fish meal and fish oil and for cost optimization. Most of the feed used in farming of Atlantic salmon is produced close to where the salmon is farmed. Norway produced 45 percent of the global feed directed towards the Atlantic salmon segment in 2014 and Chile produced 33 percent. Although animal feed can be imported from the production sources, local processing will positively contribute to cost

reductions as feed and feeding strategies aim at growing a healthy fish fast at the lowest possible cost. In all cases, the raw material commodities are traded internationally and are subject to global market price fluctuations. Additionally, natural limitation or changes in the marine resources can lead to global shortages of fish meal and fish oil. Natural phenomena like El Nino in the Pacific Ocean causes an increase in seawater temperatures along the coasts of Chile and Peru, altering the locations and types of species as well as their reproductive cycles resulting in decreases of anchovies the main raw material for fish meal production. The feed producers have historically operated on cost-plus contracts, leaving the exposure of raw material prices with the aquaculture companies, thus variation in the feed input costs have direct impact in the farming costs.

Feed cost is dependent on the feed conversion ratio which is the amount of kilogram feed used to produce one kilogram of fish. Achieving efficiency in the use of feed is a key driver for profitability and competitiveness of farming operations and thus research and development of feed products and how are they used is essential. Companies need to develop knowledge and techniques in cooperation with the feed producers so financial strength can support the overarching industry and further economies of scale achieved by the bigger MNC, which are difficult for small producers to develop.

Together with market risk, biological risks have the largest impact on salmon industry profitability. Biological risks include factors such as infectious and non-infectious diseases, environmental conditions (such as algae blooms, low dissolved oxygen levels, and fluctuations in sea water temperatures), as well as challenges related to parasites such as sea lice. Salmon farming has historically experienced episodes of extensive epidemic outbreaks that resulted in significant losses for the industry players. In 2008 in Chile, after years of rapid growth, the economy experienced a serious outbreak of infectious salmon anemia virus (ISA) causing losses of around US\$ 2 billion. The Chilean industry saw its production of Atlantic salmon destroyed by two thirds through 2009 and 2010 causing tens of thousands of workers to lose their jobs and it took years to recover to the 2007 production levels. In early 2016, an algae bloom starting causing severe losses to the industry in Chile and the year-end production is expected to drop in the 20-25 percent range. Biological risk are a threat to production stability and limit opportunities for Chilean producers to engage in long term supply agreements.

According to Chile's fisheries managing agency (Sernapesca) the Chilean salmon industry reached the highest level of antibiotics use in 2015, mainly for the prevention of Salmonid Rickettsial Septicaemia (SRS), a bacterial disease responsible for 78.9 percent of disease-related mortalities in Chile. Chilean producers of antibiotics use is far more than their more direct competitors in Norway, a practice that in addition to highest production costs have a negative impact on the quality perception of Chilean products.

5.1.8 Conclusions and Recommendations

The salmon farming industry is a global business directly affected by numerous factors both at local and international levels that can create opportunities or pose significant risks to the companies and the participants in the value chain. Further integration of the salmon GVC is dependent on factors controlled by the companies through their business strategies, producing

economy public sectors responsible for the regulations that manage the industry, and natural risks that are beyond the control of the participants, but can be limited.

Chile has achieved a significant market share in the global salmon market over the last 20 years taking advantage of favorable geographical and natural conditions and initial technology and know-how transfer that has been continued through FDI participation in the industry

Public sector initiatives and regulations play a key role in the industry development and competitiveness. In the case of Chile, initial public sector driven efforts in cooperation with Japanese technology transfer enabled the development of the salmon industry from non-existence in the eighties to becoming the second largest producer in the world. In the early stages of development, the lack of regulations facilitated company investments in farms and deployment of technologies that led to profitable businesses and attracted additional investments. However, this impressive technical and commercial success was not accompanied by matching research, monitoring and regulation to guard against biological risks. This imbalance impaired the industry's ability to avert and control an outbreak of ISA in 2007 (Alvial 2012). Regulatory authorities nowadays must find the right balance between enabling the industry development and competitiveness and ensuring environmental safety and sustainability.

Regulations are not just a local matter. In a global industry such as salmon, Chilean producers have to compete with companies operating in other jurisdictions. Regulations that are very restrictive can constrain the development and have a direct impact on the cost structure and productivity of the companies. On the other hand, lack of regulations can have very negative impacts as evidenced by the 2008 ISA outbreak. For example farming licenses, restrictions on the farms locations and medicament use rules are typical regulatory factors that impact the industry and need to be addressed by the industry and the regulatory bodies.

International regulations and trade agreements also play a crucial role facilitating access to foreign markets and removing trade restrictions and in the case of food products like salmon ensuring that international phytosanitary and quality requirements are met. Should these agreement not exist, Chilean products could not competitively access extremely demanding markets like Japan or the United States.

Foreign invested companies are essential to the industry as they contribute capital, know-how and access to markets. Multinational companies are typically financially stronger and can access global sources of finance projects or acquisitions. In Chile, foreign companies acquired existing operations rather than starting their own from scratch. Industry consolidation and size matter as it achieves economies of scale in all the activities of the salmon industry; research and development were more resources can be used, farming and sales and marketing. Currently around 50 percent of Chilean production is linked somehow to MNCs. Japanese relevance as a market to Chilean salmon is directly related to the involvement of Japanese MNCs in the value chain.

Vertical integration offers the opportunity to reduce exposure to factors affecting production costs as well as sales prices. Companies engaging in the three stages of the value chain of production,

processing and sales and marketing not only can capture higher added value but are less exposed to exogenous factors.

Research and development activities play an important role in key areas of expertise like fish health, nutrition and breeding techniques. These have direct impacts on production costs through efficient feed use, reducing risks of losses due to biological hazards and ensuring long term supply stability.

Finally joint efforts between the producers as a group in cooperation with public sector initiatives to promote and market the Chile brand and do generic marketing can expand the markets as well as contribute to Chilean salmon recognition and the premium added value associated to it. This requires long term vision and cooperation between the stakeholders.

Further participation of Chile in Asia will require improving industry competitiveness that can be achieved through regulations that help to reduce biological risk and technical capacities that allow to reduce the use of medicaments. Chile needs to improve its reputation as a reliable, stable and trusted supplier supplying products with consistent high quality, ensuring supply sustainability improving logistics and transportation capabilities and working on consumer perception of Chile as a quality producer of salmon through coordinated marketing efforts.

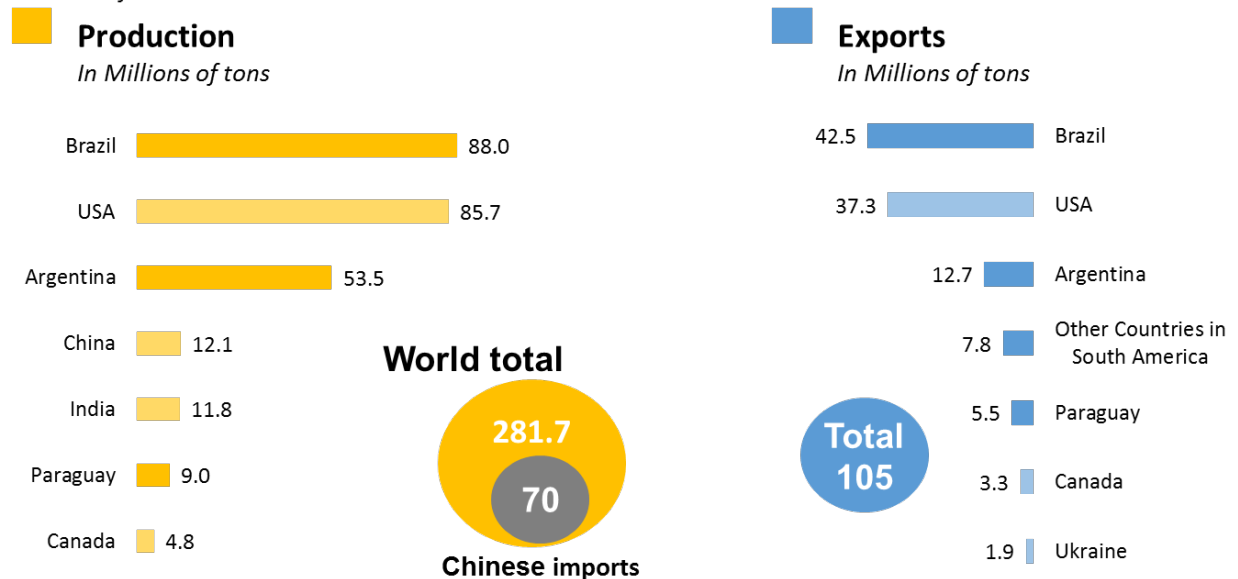
5.2 Soybeans in the GVC

5.2.1 Introduction

Soybeans are a species of legume, originated in Eastern Asia in the 11th Century BC and then introduced to Southeast Asian economies in 15th century, North America in the 1800s and Latin America in 1865. Only after World War II did interest in soybeans increase due to food shortages. Soybeans contain approximately 40 percent protein, 20 percent oil and other minerals and vitamins, making it a robust protein source. Soybeans are primarily used as a source of edible products such as soy sauces or cooking oil, livestock feed and further refined for use in chemical and pharmaceutical products (WWF, 2014). Currently, soybean production is concentrated in Argentina; Brazil; and the United States.

GLOBAL CORRELATION BETWEEN SOYBEAN PRODUCTION AND EXPORT

Estimates for the 2013-2014 season



Source: USDA

Source: USDA (2013)

Soybean production has increased rapidly over the last few decades. Global output grew by 61 percent, from 206 million metric tons in 2004 to 330 million metric tons in 2015 and is expected to reach 514 million metric tons by 2050 (USDA 2015). The area of soybean cultivation land also rose from less than 30 million ha in 1970 to more than 100 million ha in 2012 (WWF 2014). There are five economies producing a majority of global supply. These economies include Argentina; Brazil; China; India; and the United States, where Brazil and the United States account for more than 90 percent of global soybean output. The reason for this incredible industry growth is due to growth in world population, awareness of soy health benefits and its versatile uses, improvements to technology and soybean tariff tax reduction. Also, an increase in demand of two main consumption markets: Asia (China; Japan; and Southeast Asian economies) and EU economies

(Germany, Netherlands and Spain) have been driving forces behind the expansion of soybean production (WWF 2014).

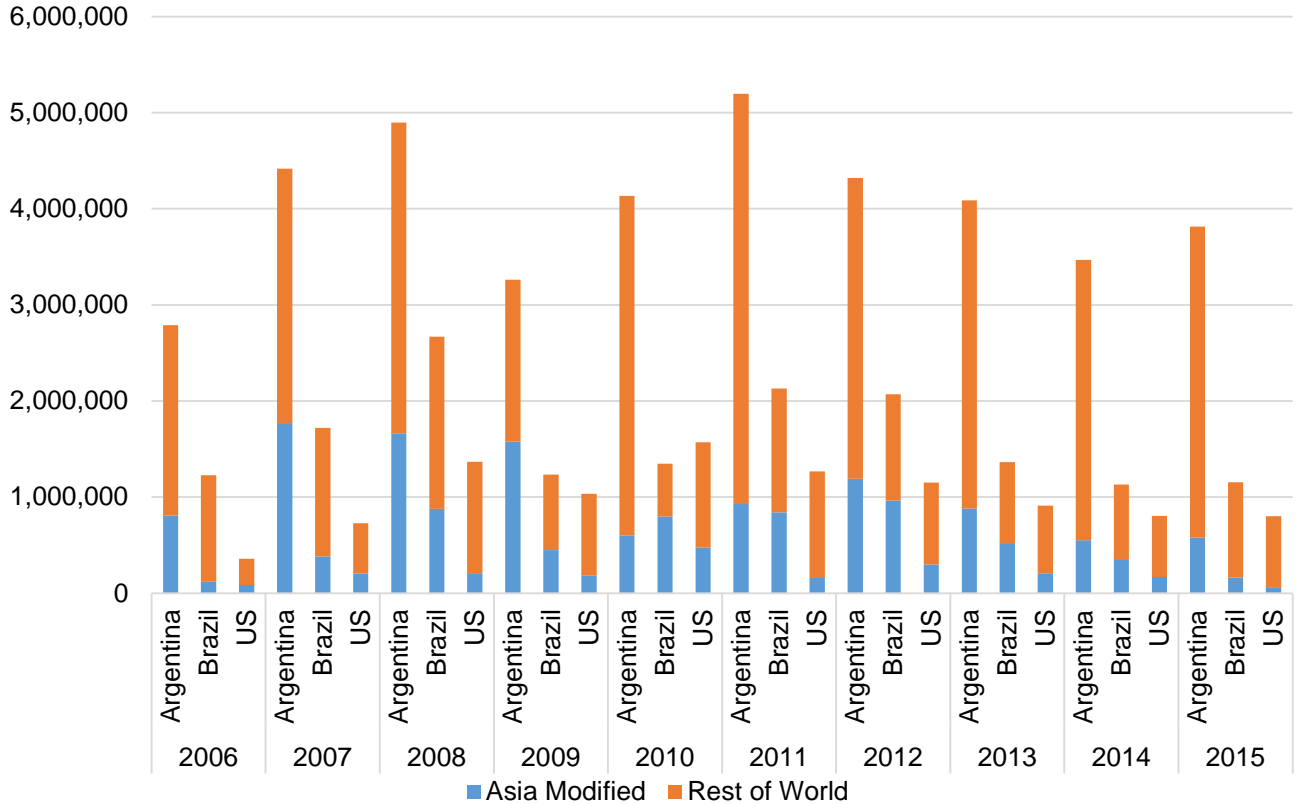
Soybeans can be grown on a wide range of soil and are relatively resistant to temperature fluctuations. This resiliency explains how the product originated in Eastern Asian, but current expansion lies in South America. However, optimum soil is well- drained type with pH from 6 to 6.5 and temperature falls in the range of 18 degrees Celsius to 35 degrees Celsius. It takes around 50 to 150 days from germination to harvest. Such conditions, which can be found in Midwest-United States, South and Center-West (Brazil) or Buenos Aires (Argentina). This climate encourages rapid moisture absorption, successful rate of germination and highest yield. Other important biological factors such as crop rotation, planting date and depth, varieties of seed and seeding rate can be adapted to different areas producing soybean (McFarlane 2014).

With favorable natural conditions and huge agricultural land, South American economies, particularly Argentina and Brazil, produce soybeans as well as derivative products for both local consumption and exports. Even though the United States was a strong player in the market, Brazil has surpassed the United States to become the largest soybean exporter to the global market in 2013. Proven by the production and import value, China has become the world's largest soybean consumption economy over the past decade, using 70 million tons in 2013 (USDA 2013).

5.2.2 Market

Soybeans are classified into three intermediate products which are soy beans, soybean oil and soybean meal. Regardless of soybean products, Asia and EU are the biggest markets for exporting economies such as Canada; the United States; and Latin America. Soybeans are strongly preferred by Asian markets for human consumption, particularly China. The export value of soybeans from Latin America and North America to China accounts for respectively 80 percent and 74 percent of their total soybean exports (Trademap 2016). EU economies, on the other hand, gain more interest in soybean oil and soybean meals, purchasing 50 percent of soybean oil and 62 percent of soybean meal of global exports, mostly for industrial usage (WWF, 2014). Although Brazil dominates soybean export markets, Argentina is a leading soy oil and soy meal exporter due to improvements in public sector policies, crushing capacities and favorable transportation infrastructure. Argentina has shifted its exports away from the EU to other Asian economies, which is illustrated by the fact that 50 percent of soybean oil of Argentina goes to Asia where China and India are the main markets. Some other destinations are Bangladesh; Egypt; Iran; Peru; and Venezuela. In terms of soybean meals, there has been a stable trend of South American economies exporting to smaller markets such as Algeria; Chile; Indonesia; Japan; Malaysia; Mexico; Peru; and Viet Nam.

US\$ Thousand **Top 3 Soybean Oil Exporters to Asia**



Source: International Trade Center Trademap

More than 80 percent of Asia’s soybean consumption is dependent on imports from the United States and Latin America (40.8 percent comes from Brazil, 32 percent from the United States and 8 percent from Argentina in 2015). In 2015, China imported 81.7 million tons of soybeans that accounted for 87.8 percent of domestic demand. 49 percent of Chinese imports comes from Brazil (Trademap 2016). Increasing populations coupled with polluted agricultural land has made China reliant on soybean imports. In terms of soybean oil, China has the second largest demand supplied by Latin American economies. However, China’s import values are slightly decreasing as the economy is attempting to bolster its domestic industry and reduce exports, or add value to processed product. China has significantly developed a crushing industry providing moderate amounts for domestic uses. Interestingly, half of total Southeast Asian soybean oil imports originate from Argentina which stresses the importance of Argentina soybean oil to Asia’s market.

Increased demand for soybean meal has made Southeast Asian economies newly emerging import markets. Indonesia and Viet Nam are both increasingly importing soybeans and meals, where growth in these markets surpass that of the EU. Over the next 10 years, these economies are projected to increase consumption of soybean meals to 6.7 million tons by 2025/26, accounting for nearly 50 percent of the increase in global soybean meal imports (WWF 2014).

5.2.3 Value chain in the soybean industry

Input supply plays a crucial role in soybean farming stages due to the direct impact on production efficiency, costs and end user needs. This results in reliance on technology development, R&D activities, an increase in public funding, and collaboration between companies and economies. It was proven by collaboration between Marubeni Corporation (Japan) and Amaggi (Brazil) on joint production of non-genetically modified (GM) soybeans have added value for certain markets. Since the Japanese market requires higher quality of soybean which conventional GM seeds are not qualified, the joint production, utilizing Japan's technology in non-GMO seed technology, financial capacity, and Brazil's accessibility to farm management and non GMO soybean exclusive area, now provides a volume of up to 1 million tons per year. This collaboration highlights the importance of input supply in farming stage which enables the production firms to meet the end user needs, foster GVCs, and improve collaboration between Latin America and Asian economies.

In the second stage, the farmer can choose to sell soybeans to either intermediaries or crushing/processing plants. Increasingly, farmers are eliminating the middleman, thus selling directly to buyers in the international markets. Local intermediaries facilitate both local and international trading processes in the next stages.

The third stage takes place when the soybeans are exported to international markets. Since soybeans have virtually no retail demand, soybeans collected directly from farmers or intermediaries will be processed/crushed in the destination market. In the case that soybeans have already been crushed and exported in the form of soybean meal or soybean oil, it goes to further refining to produce consumer products. Exporting soybean oil and soybean meal illustrates that soybean value chain has been upgraded. However, the dependence on single markets diminishes the potential for upgrading. It is exemplified in a bilateral trade between Argentina and China. China is the second largest trading partner of Argentina with 80 percent of this economy's agricultural product exported to China, 64 percent of which is soybeans. However, in recent years, Argentina can mostly export raw soybeans instead of soybean oil as before due to China's crushing capacity improvement. This results in Argentina's significant loss of exporting value and unbalanced pattern of development.

Some other Asian economies started to take part into global soybean value chain as well. TVO, which is a largest soybean oilseed processor in Southeast Asia, imports from Argentina and Brazil, and distributes their cooking oil in Thailand, Viet Nam and Asian markets, has proven this trend.

Uncrushed soybean export is strongly preferred by the importers as it can be used in human food production such as soy milk, soy sauce, and other products, or crushed into soybean oil and soybean meal in destination markets. Multinational corporations have had a huge influence on soybean value chains are more likely to operate crushing plants and refinery manufactures in exporting economies. Firstly, crushing/refining processes are considered as high value added activities. Tariffs on soybean are generally lower compared to soybean oil and soybean meals. Secondly, by opening processing plants in destination markets, corporations are able to utilize

their capability to respond to changing demand, easily access to marketing, distribution channel, diversify their products to variety of end users and expand market into neighbor economies.

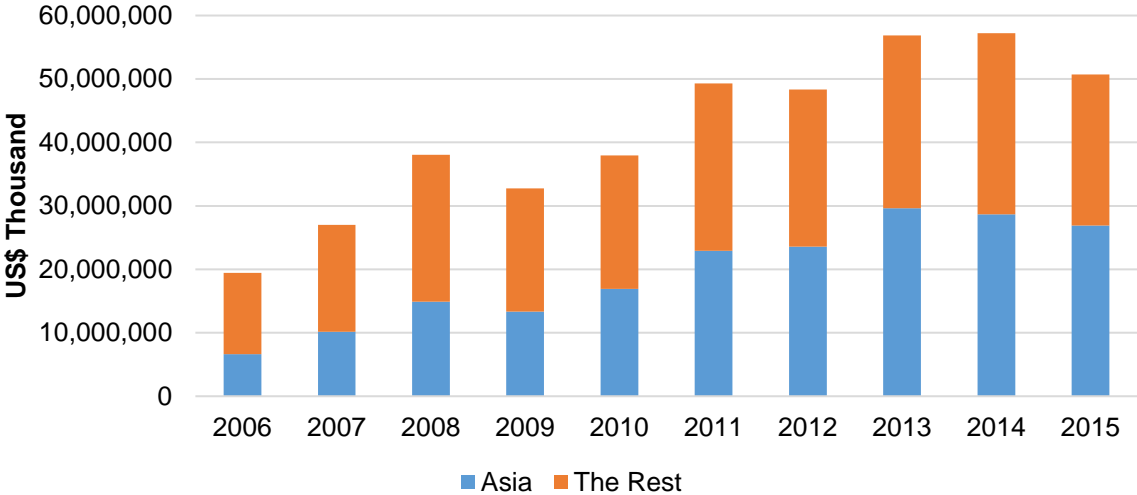
Soybean meal being further processed has been widely used as protein ingredients of livestock feed, human food (soy flour) and meat processing while soybean oil after refinery process can be used in food industry as edible oil or margarine, baking products, confectionery; chemical industry to produce soap, cosmetic, paints and coatings, inks, polymers, pesticides and textiles; biofuels industry or oilcake used for animal feed. It is noted that soybean can be crushed and processed in importing economies for domestic consumption and export to other economies with smaller amounts. Soybeans are incredibly dynamic legumes where their protein and oil content can be exploited by companies to add value to the raw commodity.

Bunge is a global agribusiness and food company involved in the soybean value chain starting from purchasing and collecting soybeans from farmers in Latin America economies. The corporation operates oilseed processing, refining plants in China and Southeast Asian economies which are tailored to the needs and demands of each market. While the corporation produces cooking oil in China, it focuses on soybean meal processing in Viet Nam due to rapid expansion of livestock feed sector. This led to success of Bunge in a majority of exporting markets. Bunge can produce their own bottled cooking oil named Douweijia which has been well-known in China's market. It is noted that Bunge also provides edible oils and food products to retail channels, food services companies and processors in Brazil where the companies purchase soybean.

Although the participation of multinational companies such as Archer Daniels Midland, Cargill, Louis Dreyfus, and others stretch from input supply, production, processing to distribution dominate the value chain due to scale advantage and technology investment, there are still opportunities for SMEs to capture market share by network building, concentration and specialization. The shift from single farmers to production firms has proven the opportunity in Latin American economies, particularly Brazil and Argentina (Turzi, 2012). These firms have reshaped regional market structure by vertical integration with input supplying companies, farmers, intermediaries and processors to utilize financial advantages. This leads to not only a flow in terms of capitalization, logistic, quality arrangement and cost reduction, but also larger size production firms and cluster areas which attract more international investment sources.

5.2.4 Linkage between Latin America and Asia

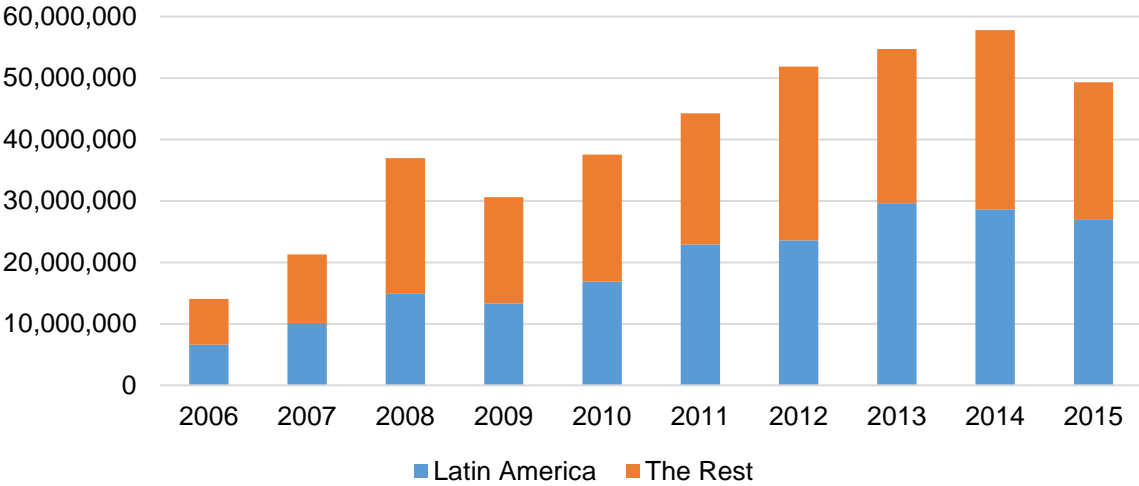
Latin America Exports of Soybeans



Source: International Trade Center Trademap

Regardless of soybean products ranging from raw soybeans, soybean meals, soybean oils and soybean oilcake, Asia is a leading export destination accounting for approximately 50 percent of Latin America’s total export value from 2011 to 2015. For Asia, these imports are critical to their value addition of processing soybeans for final food products, animal feed, and a diversity of other products.

Asia Imports of Soybeans



Source: International Trade Center Trademap

Over the past decade, Asia's demand for soybeans has increased, especially to China. This trend is expected to continue in the coming years. In terms of soybean meal, Chinese Taipei and Japan are the main markets which account for 5 percent of Latin's America exports. Argentina dominates the soybean oil export market with 67 percent of the global market where China and Korea accounted for Argentina's largest soybean oil demand, 9.6 percent and 2.4 percent respectively in 2015. However, the downward trend of soybean meal and oil demand from these economies is being replaced by rising demand of Southeast Asian economies.

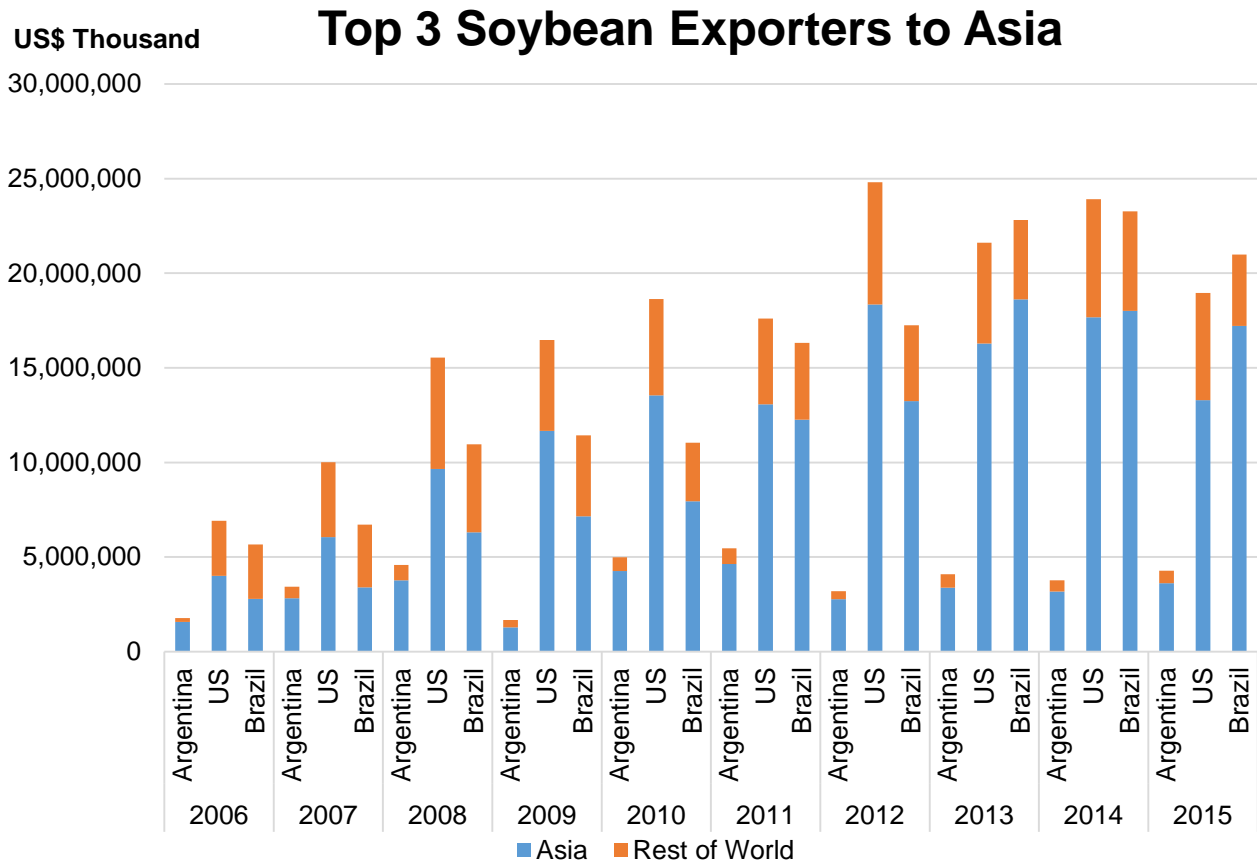
Latin America accounts for more than 64 percent of global oilcake export value of which 50 percent belongs to Argentina and Brazil. The bilateral trade of oilcake between Latin America and Asian economies has strengthened which is illustrated by the fact that Southeast Asia, particularly Viet Nam, are growth markets for Argentina's oilcake exports. A tenfold increase in export value over the past decade to Viet Nam with export value of US\$ 1.16 billion equal to 3.1 million tons has made Viet Nam the most potential import economy. Also Indonesia; Malaysia; Thailand; and Viet Nam make up 7.2 percent, 4.7 percent and 2.4 percent of overarching oilcake export value (Trademap 2016), further indicating the great potential of inter-regional trade between Latin American and Southeast Asian economies. It is explained that oilcake used for livestock feed can improve productivity in the meat sector. In Southeast Asian economies, higher living standards results in higher consumption of animal protein (Regunaga, 2011). However, compared to China, limited processing and refinery plants have made these economies, particularly Viet Nam, reliant on oilcake imports. Thus, the soybean trade between the two regions is mutually beneficial where participant economies can add value based on their own competitive advantages.

5.2.5 Brazilian soybean industry

Origin

Soybeans were first introduced to Latin America between 1565 and 1815. In 1890s, soybeans were propagated, but not successful in Brazil by the agronomists at the Agronomical Institute of Campinas. Soybean interest in Brazil took off in 1915, when Japanese immigrants grew soybeans in small scale. From 1920 to 1939, the commodity went through an experimental phase when different types of soybeans were tested and cultivated. Starting in 1940s, soybean production marked a significant milestone achieving 10,000 tons. The production then expanded explosively reaching 36,000 tons in 1950, 150,000 tons in 1959. Since 1960, Brazil focused on R&D to provide more variety of products ranging from soybean oil, soymilk to soybean meal. Brazil started to become one of the largest soybean producers in the world from 1970 (Gelder and Dros, 2002)

In recent years, soybean production in Brazil has experienced a stable growth with forecast of 101 million tons in 2016/2017 compared to 96.5 tons in 2015 (WWF 2014). There are two main regions that concentrated on soybean production with 33.1 million hectares harvested area: South (Parana, Santa Catarina and Rio Grande do Sul) and Center West (Mato Grosco, Goias)



Source: International Trade Center Trademap

Brazil took over the second largest soybean production crown in 1974 and then became the largest producer economy in 2013. According to World Integrated Trade Solution’s data, Brazil total export is US\$ 191,127 million of which soybean exports have been consistently ranked as the top export product, accounting for 11 percent of economy’s export value in 2015 and reaching more than 20 international markets. Asian economies over the past 10 years have been the most important trading partners regardless of the type of soybean products, importing 86.4 percent of Brazilian soybeans equal to 47 million tons in 2015. China has been the main market for soybean for the past decade accounting for 75 percent of total export in 2015. China has a preference for soybean rather than soybean oil and soybean meal.

In conjunction with soybeans, soybean meal is also one of the top export product with total export worth of US\$ 5.8 billion accounting for 5 percent total export value in 2015 (Trademap 2016). Although Asia has not been a primary buyer for Brazil's soybean meal exports, it is predicted to gain more attention with a stable growth of 2 percent per year. Leading destinations in Asia are mainly Southeast Asian economies such as Indonesia, Thailand and Viet Nam which hold 13.3, 7.6 and 4 percent of export value in 2015. From an importer perspective, total imports by Southeast Asian economies’ soybean oil takes up 21 percent of global import. Brazil is the most significant source for soybean meal supply with dominance of 52, 79 and 43 percent of import market of Indonesia; Thailand; and Viet Nam. Total export of soybean oil is US\$ 1.15 billion of

which 79 percent goes to Asia, particularly India (47 percent) and China (12 percent). Brazil is ranked as the second largest soybean oil exporter to Asia, after Argentina.

5.2.6 Brazilian soybean integration into GVC

It is undeniable that there has been a strong relationship between Brazil, Japan and China to further the Brazilian soybean industry. Japan has been a crucial partner to facilitate Brazil's integration into the soybean GVC. Japan took great interest in Brazil to ensure the economy's food security and a consistent supply of soy products at reasonable costs. From the 1970s to 1990s, Japanese investment and development cooperation project Cerrado (PRODECER) instigated a Japan-Brazil public private partnership to enhance and reform large tracts of the Brazilian soybean industry (Kato et al 2015). By providing financial assistance and technological innovation, this project successfully transformed savannah territories from a large unproductive land mass to a fertile agricultural production area which is now one of the largest grain production regions of Brazil. Through Japanese and Brazilian mutually beneficial cooperation, the project instituted sustainable development of agricultural land that enhances the overall industry, employs jobs, and supports food security.

In the 2000s, bilateral trade between Japan and Brazil increased, not only through soybean trade, but also in enhancing overall relationships and connectivity to other Asian economies. With Japan working with Brazil to create an initial platform, Brazil is now better capable to tap and supply to numerous international markets which resulted in an explosion of exports to Asian markets following the engagement (JALAC, 2015).

Aside from public sector support, Japanese companies are also active in the Brazilian soybean industry. Japan's investment into the Brazilian soybean industry has mainly taken cooperative framework, distinguishing Japan from other economies' investment to Brazil. It is exemplified by two ventures of Mitsui & Co., Ltd with the largest soybean producers in Brazil to establish Multigrain AG in 2006 and SLC MIT in 2013. Mitsui has invested US\$97 million into Multigrain AG and US\$11.2 million into SLC MIT. In both cases, Mitsui holds less than 50 percent ownership and is focused on building comprehensive supply chains and applying new technologies for input and standardizing management systems (Mitsui, 2014).

China, with strong demand for soy products, is also very active in Brazil. By receiving more than US\$228 million from China between 2000 and 2010 and planned Chinese FDI of US\$50 billion from 2015, Brazil remains the top recipient economy of Chinese FDI in Latin America (Peter, 2014 and Rhys, 2012).

The agricultural sector is one of the priority sectors for Chinese FDI investments into Brazil. Chinese multinational corporations have been seeking investment opportunities through partnerships with local firms and acquisition of soybean producing land. Chongqing Grain Group plans to invest US\$4 billion in acquiring 200,000 hectares of land in Bahia with production capacity of 250,000 tons per year, as well as building a soybean crushing plant with annual capacity to process 1.5 million tons and a fertilizer plant (Oliveira, 2015). Another Chinese multinational company investment is Beidahuang Group - China's largest agricultural production company and the main soybean producer in the economy. This company expanded production land and

constructed their own fertilizer factory, warehouses, railroad, and a port terminal in Brazil (China-Brazil Business Council Report, 2011 and 2013).

China and Brazil have both benefit from participating in the soybean value chain (McFarlane 2014). From Brazil's perspective, partnerships with Chinese companies have improved the infrastructure, particularly logistics and transportation which have been considered as the disadvantage in competitiveness of Brazil due to reliance on truck and highway systems (Abdenur, 2013). A "push" factor of technology transfer, genetically improved seed or advanced crushing technology, international operational management standards and employment opportunities have fostered soybean value chain and productivity over the years. With a potential expansion of ports along the Pacific, Brazil can more efficiently export to Asia.

In terms of China, by integrating to Brazil's soybean supply chain, China gains access to a fertile land that is efficient in soybean production that will supply growing Chinese demand. Moreover, China can add value to Brazilian soybean processes by investing in downstream production facilities and supplying to greater Latin America.

However, the two economies have faced several challenges when integrating to GVCs (Sturgeon et al, 2013). Firstly, Brazilian's public sector policies have suspended or delayed Chinese investment and raised restrictions on foreign acquisition of farmland which was proven in the Chongqing Grain group case. Until 2014, this project had not been delivered as expected. This implies that protectionism, political instability and bureaucratic processes hinder FDI and the upgradation of the soybean industry through international support. Peter (2014) suggests that public sector policies have had a huge impact on the relatively low investment levels which slow down large scale investment from China to Brazil. Secondly, the reliance on China will expose more weaknesses to the soybean industry in terms of price volatility, preference of primary product and unfavorable conditions for SME's integration as China increases imports of the raw commodity and invests in its own processing facilities, while Brazil continues to focus on upstream, lower value added activities.

Like any commodity, soybeans are price sensitive with prices changing between seasons, geographical location, input supply and demand, the weather, etc. The price of soybeans in Brazil is usually higher in November and lower in January when facing competition from the US. The price also falls when moving from East to West because of higher quality of soybeans (Flaskerud, 2003). The fluctuations of tax imposed on inputs such as agrochemicals, fertilizers, machinery or equipment has significant influence on soybean price. Most importantly, China has achieved high bargain power due to the fact that it is the main importer of the three largest soybean producers in the world, resulting in fierce competition for market share in China's market.

The Chinese public sector imposed a 3 percent tariff on unprocessed soybeans and 9 percent on processed soybeans (soybean oil and soybean meal). This further encourages Brazil to focus on producing primary products (soybean) for a long term and neglect higher value products (soybean oil). These low value added activities will not only leave a negative impact on long term economic performance and environmental sustainability but also locks Brazil from participating into producing higher value commodities. Moreover, SMEs are mainly are small scale without access to facilities such as financing and technology. Chinese multinational companies can develop the

full capacity of the value chain with little input or support from these SMEs. In addition to dominance of other multinational suppliers and service providers, SMEs face more challenges competing in soybean sector. Even though the shift of SMEs' vertical integration has appeared, the collaboration happens relatively slow and not consistently.

5.2.7 Conclusion

Summing up, soybeans remain the top commodity priority connecting Asian and Latin American trading activities. There are three main soybean products that have been active in global market which are soybean, soybean oil and soybean meal. In terms of soybeans, due to favorable resource conditions, Latin America has become a giant exporting region with Brazil being a star. However, the dependence of China's demand has granted China better bargaining power in the market. Argentina is a leading soybean oil and soybean meal exporter. The export destination of Argentina's soybean oil and soybean meal has been more diversified with the stress on linkage to new emerging market: Southeast Asian economies.

The soybean value chain highlights integration of Asia to Latin America economies. In the farming stage of the value chain, by utilizing strength of each party, Asia – financial capacity and technology development, Latin America – human and natural resources, it is successful in upgrading value chain which benefits both parties. The exporting stage of soybeans, soybean meal and soybean oil puts emphasis on Multinational Corporations' influence in both regions.

The case study of Brazil integrating into the GVC with particular participation of Japan and China indicates a strong connections between the Asian economies. There are some advantages and disadvantages when an economy takes part in the value chain. Brazil, Japan and China are able to both maximize their own capacity and support each other's needs in terms of infrastructure, technology, human and natural resources. However, it is crucial to take into account other factors such as political situation and participation of SME when the economies join in GVC.

5.3 Automotive Value Chains

5.3.1 Introduction

The automotive industry is one of the most dynamic globally, incorporating a wide range of commodities, technologies, service providers, components suppliers, and assemblers into the industrial value chain. From raw steel mining companies, to advanced technology businesses looking to improve driverless vehicles, and the specialized oil changing service providers, respective companies from around the globe specialize, compete, and cooperate to deliver vehicles and necessary services that fuel customers' transportation needs. While the automotive industry is often considered one of the most global products, in reality, it is more regional, although still dominated by a few major international companies (Humphrey 2003).

The structure of the international automotive industry has changed incredibly since its first practical inception from Germany in the late 1800s. Back then, a cluster of German and Austrian industrialists developed and were able to apply the internal combustion engine as a horseless coach. Quickly, competitors from around Europe; Japan; and the United States developed their own unique products to grow the industry in respective markets. Germany; Japan; and the United States continue to drive a significant portion of the GVC for autos, the incredible growth of developing economies, especially in Asia, grew in their production and service capacities.

While domestic markets of the three primary economies became saturated and the large populations and emerging middle classes of the developing world demand an increasing number of vehicles, most major vehicle producers started looking at opportunities abroad to efficiently supply to various regions. The sophistication of the automotive value chain demands the consistent and affordable supply of a diversity of both primary and aftermarket parts and components. Thus, leading automotive companies such as Toyota, General Motors, Mercedes, and others invested abroad in assembly operations while often also bringing components suppliers to support the production and replacement parts for autos across the globe. Today, there are a number of regional production centers supplying to domestic and near markets while further international shipments do indeed occur in times of shocks in supply and demand.

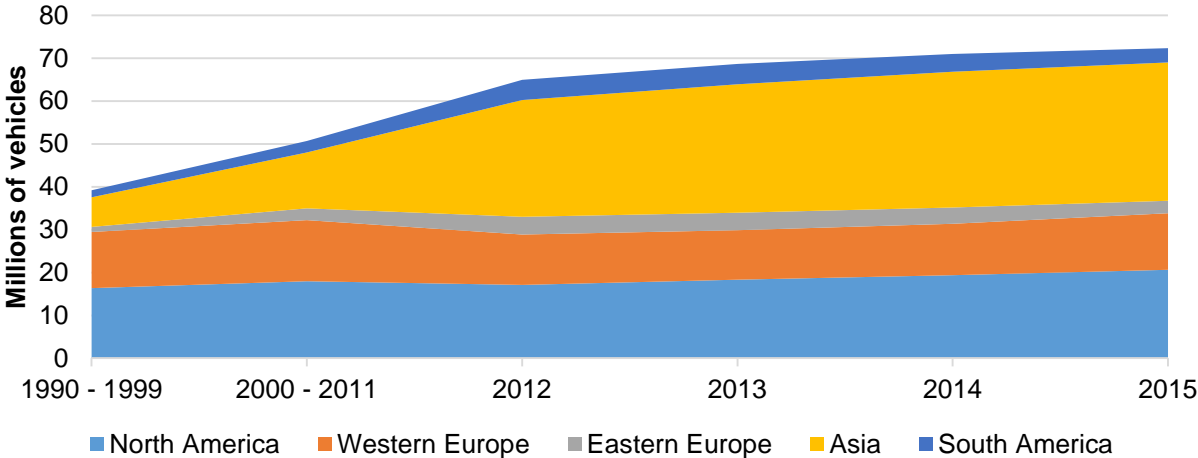
The expansion of automotive GVCs has incorporated Asia and Latin America into regional production hubs fueled by trade and investment flows, typically driven by lead MNCs. The sum of all parts that contribute to the automotive industry makes it the largest industrial sector with total annual sales valued over US\$2.5 trillion (Abe 2013). Final products, parts, and components are the second most heavily traded manufacture after electronic parts of all shapes and sizes, specializations, price ranges, and levels of quality. Moreover, this industry offers incredible potential for upgrading with numerous emerging disruptor technologies. As software is increasingly integrated into automotive hardware, technology behemoths such as Google and Apple, along with numerous application, semiconductor, and sensor producers incorporate with automotive companies. Other technology efficiency enhancements and substitute transportation companies such as Uber and Grab as well as improved transportation infrastructure will impact the overall supply and demand of vehicles.

Due to the industry’s forward and backward linkages with various other industrial sectors as well supporting society’s transportation needs, it has a strong multiplier effect on industrialization and livelihoods. Vehicles fuel the transportation sector and infrastructure development that then supports industries and improved employment opportunities. Moreover, the enhanced industry will better connect an economy to GVCs if they are producing competitive automotive inputs, while the infrastructure connectivity facilitates better cross-border trade (Biswajit 2007). This can be evidenced in economies such as Mexico and Thailand where a strong automotive industry has indeed been institutionalized which has stimulated the urgency to improve domestic infrastructure, which positively impacts wider sections of society, aside for the benefits of increasing exports, providing improved employment opportunities, and local business connectivity to MNC goods and service demand as well as product quality and safety standards, where many of the vehicles produced domestically are exported.

5.3.2 Automotive Sales and Production across the Globe

Passenger vehicle sales have grown incredibly over the past thirty years where growth was most substantial across Asia. Today, annual vehicle sales surpass that of full past decades where 2016 is supposed to be another record year for automotive sales. While vehicle sales and production have grown sizably across Asia, Latin America has not realized similar growth. As with industry, Latin American automotive industry lags far behind Asia in terms of both supply and overall demand. Only Brazil and Mexico have a substantially large automotive market, while Argentina engages to a marginal extent. Across the Pacific, the Chinese, with the World’s largest population, not only purchase, but also produce the greatest number of vehicles, Japan and Korea both have strong industries that have invested and supply to both Asia and Latin American regions, while emerging economies such as Indonesia; Malaysia; and Thailand all have automotive markets. Japanese and Korean companies both also have substantial production facilities in other economies, thus, while the home economy may not be producing all “Japanese” or “Korean” vehicles, affiliates in third economies are producing for the overarching company.

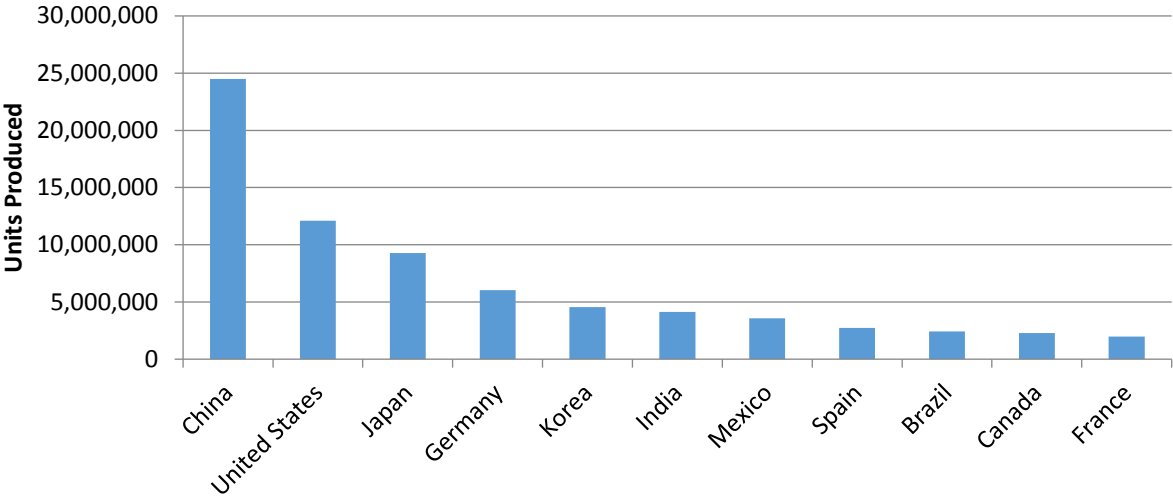
Regional Vehicle Sales (millions)



Source: Statista.com

The automotive industry incorporates over forty car-producing economies worldwide, although far fewer are capable of developing original models. Emerging economies are quickly becoming major production locations, in line with broader trends in other sectors. Today, China produces the greatest number of vehicles on a gross basis while other emerging economies such as Brazil; Mexico; and Thailand, supply relatively large numbers of cars and trucks as well as components. While these economies have increased in production, it is not easy to distinguish between demand and supply shifts; in other words, capacity may move to emerging economies because production there is cheaper and more efficient and/or because demand growth is brisker. Thus, some economies may export a greater share of vehicles rather than just supplying to the local market. Mexico and Thailand are both examples of this phenomenon where Mexico exports a large number of vehicles and components to North America while Thailand supplies to greater Southeast Asia and beyond, with some exports even reaching Latin America. Although these vehicle producing economies may have domestic producers, many of the companies operating locally are foreign while each do indeed have imports of foreign vehicles as well.

Automotive Production Centers 2015



Source: Organization Internationale des Constructeurs d'Automobiles

5.3.2 Automotive Value Chain

Automotive GVCs are incredibly complex and diffuse. As there are an incredible number of inputs, technologies, pieces, and processes that go into the production of one final vehicle, the supply chain and added value services are spread across economies. Chile may supply the copper that goes into wiring of electronic components, which were designed by Japan and produced in Chinese Taipei, and then sent to China for assembly into the final vehicle. Roller bearings may be supplied by a German firm who sources Brazilian steel, which is forged, treated and stamped in China, and then utilized both in China and in other economies' assembly operations. At each stage of the value chain, both international and local company players contribute their expertise based on respective competitive advantages.

Automotive value chains incorporate six differing types of market players which include standardizers, material suppliers, component specialists, integrators, assemblers and distributors (Abe 2013). Although there are different types of specializations in the industry, vehicle and component production is dominated and managed by a few very large original equipment manufacturers (OEMs) who often have production facilities in numerous markets. While these companies may produce to overarching company standards, they also localize some production to various economies' demand while also looking to generate cost savings in less expensive economies and keeping the higher added value services in home economies. As income distribution varies widely across economies, these companies must produce at cost levels where local consumers can afford. Due to the diversity and expanse of the automotive value chain, companies can find their own unique ways to upgrade products, processes, functions, channels, or inter-sectoral linkages.

While home economy vehicles may be more technologically advanced and expensive, vehicles supplied to developing economies typically incorporate less expensive inputs and take advantage of lower production costs by operating regionally, utilizing global sourcing strategies to garner cost reductions. For example, Indonesia, which is an emerging economy with per capita GDP just over US\$ 3,500 per year, and a lower fuel grade standard, consumers demand less expensive vehicles and vehicle types that can fit six or more passengers. As this is the type of vehicle in demand, many Japanese companies supply multipurpose vehicles that are affordable to the local market. On the other hand, Thailand, which has a higher per capita GDP, smaller family sizes, with many involved in agriculture, consumers prefer pickup trucks. As such, Thailand has emerged as a pickup manufacturing hub for the region for both Asian and Western car manufacturers. This creates a form of specialization, not only on an economy's preferences basis, but also as a supply hub for other markets.

Logistics costs, product localization, and aftermarket supply is incredibly important to the long term sustainability of domestic and regional automotive industry, OEMs cooperate with numerous component suppliers from around the globe. Thus, when investing in new markets, these OEMs often encourage critical component suppliers to invest as well to supply both OEM assembly operations as well as service and support demand (Sturgeon 2011). Moreover, OEMs cooperate with these suppliers to meet local market pricing and quality standards, who will then work with local company suppliers for raw materials and intermediate inputs when possible. The OEM will typically provide overarching design and standards and challenge the supplier to meet cost constraints. Through this symbiotic relationship, the automotive market has expanded across the globe supplying a diversity of products, parts, and services to meet differing consumer demands. For example, companies such as Denso and Nissin Kogyo have invested in Brazil to supply components to their OEM companies with operations there as well as the aftermarket. Japanese companies are even expanding to smaller markets such as Paraguay and Nicaragua. Sumitomo Denso, Yazaki and Fujikura have invested in Paraguay to supply components to Brazil, while Yazaki operates five plants in Nicaragua to supply harnesses to Mexico which are then incorporated into the larger Mexican automotive value chain where final vehicles are purchased locally and exported to NAFTA (Khan 2016).

Due to the regional nature of automotive GVCs and the importance of minimizing logistics cost and efficient supply of components, numerous Asian OEM and components suppliers have integrated the Asian region into a complex web of suppliers, service providers, and assemblers, while they are also operating and expanding across Latin America. Companies such as Honda, Mazda, Geely, Kia, Hyundai, and many others now manufacture in numerous Asian economies and supply to Latin American markets. Argentina, Brazil; Colombia; Mexico; and other Latin economies have Asian vehicle manufacturers where growth is expected in the coming years. Unfortunately, there are not as many Latin automotive companies operating in Asia. As stated in the report above, there are not a great number of Latin American companies operating in Asia on a general basis, while most operate in commodity sectors. Furthermore, there are not any truly global Latin OEM company while the Latin components suppliers typically supply to North American; European; or Japanese automotive companies. Thus, it is quite challenging for Latin automotive companies to enter Asian markets when the competition versus Asian competitors is so great.

5.3.3 Investment and Trade Flows

Investment

The world's leading automobile manufacturers are merging to invest into production facilities in emerging markets in order to reduce production costs and tap new markets. Recently, there is a trend of joint ventures in global automotive industry to consolidate production and supply processes while maintaining core business practices. Many OEMs are merging with others to generate economies of scale. The big three United States' automakers, GM, Ford and Chrysler, have all merged with, and in some cases established commercial strategic partnerships with other Chinese; European; and Japanese automobile manufacturers. Moreover, components suppliers often invest in joint ventures when looking to enter new markets. This allows companies to more quickly set up operations by purchasing already existing production facilities with a track record of sourcing and supplying to local markets.

Numerous Asian automotive companies, with an already established supply chain in Asia, are investing in Latin America, both in greenfield and joint venture projects. There are hundreds of examples of Asian automotive investments going into Latin America where Japan; Korea; and increasingly China are building opportunities across the region. Perhaps the best example of the diverse and dense manufacturing linkages between economies is Japan's growing role in the Latin American region's automotive sector. Here Mexico stands out. In the decade since the signing of the Japan-Mexico Economic Partnership Agreement (EPA), Japanese automakers have invested nearly US\$ 6 billion in Mexico. Nissan, Toyota, and Honda all have multiple Mexican production plants. This trend is likely to accelerate in the coming years (IDB2016). The section above mentioned a number of companies expanding across Central and South America. Aside for those companies, even relatively new Cherry (China) is expanding its value chain into Latin America. In 2007, Cherry joined with Argentine SOCMA Group and Uruguay Oferol to establish a US\$ 500 million factory in Argentina (Harman 2014). Toyota is expanding its factory in Argentina with an US\$800 million investment while Nissan is growing in Brazil with a US\$1.2 expansion (Khan 2016).

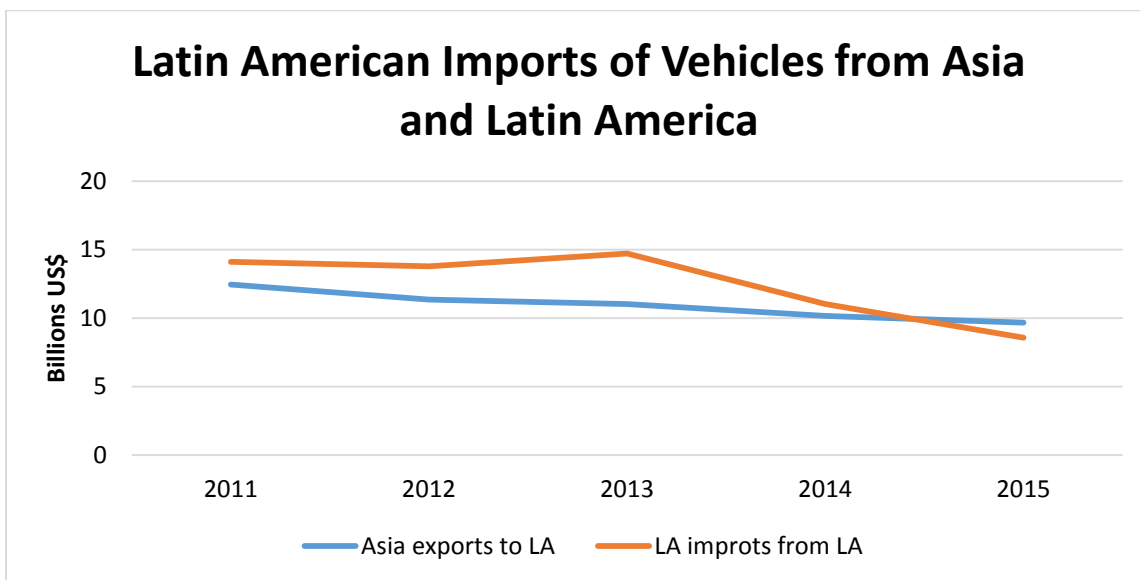
These Asian investments to Latin America are supporting local industrialization, regional connectivity, employment creation, access to capital and technology, while also providing a range of vehicles and components for consumers. Increasing investment flows into the automotive industry will better connect Asia with Latin America while building opportunities for local company exposure to international markets and business practices. Moreover, automotive investments combined with emerging middle classes and access to quality transportation will stimulate further infrastructure development that improves both domestic and RVCs. The automotive industry, with its complex and diverse value chain, is an excellent industry for Latin economies to attract investment into from Asia to better engage GVCs.

Although these investments are positive, a significant challenge for companies looking to enhance their stature in the automotive value chain is how to best integrate local firms. Vehicle and component manufacturing demand a high degree of quality, standardization, R&D, and investment. Often in developing and emerging markets, local business face challenges on either their overall capabilities to meet lead company demands or achieving profitability. Especially in new markets, domestic companies may not have the experience, human capital, technology, or other factors to be competitive with international counterparts. As such, many companies make investments and implement training activities to improve the skills sets of the local populace and potential local suppliers to meet international standards. Toyota, for example, has cooperated with local schools and foundations in Indonesia and Thailand to develop vocational education programs to upskill future technicians. By working with local populations and companies, MNC leaders can work to ensure a sustainable skilled workforce while also enhancing the capabilities of local suppliers that can supply competitive products with reductions in logistics costs. Moreover, these companies and employees may be able to evolve and find other customers and markets outside of their MNC sponsor. Thus, GVCs and MNC cooperative activities can stimulate local company capabilities (Sturgeon 2011). Japanese public sector agencies are also working to enhance local capacity and stimulate firm level cooperation. JETRO in Mexico cooperates with the Mexican trade promotion agency to develop and operate a database of local suppliers to connect to both Japanese automotive companies working in Mexico as well as facilitating exports. JICA is also working with Japanese auto companies in Mexico to enhance SMEs productivity levels so they can be viable and efficient local suppliers to the growing demands of the Mexican automotive industry (Khan 2016).

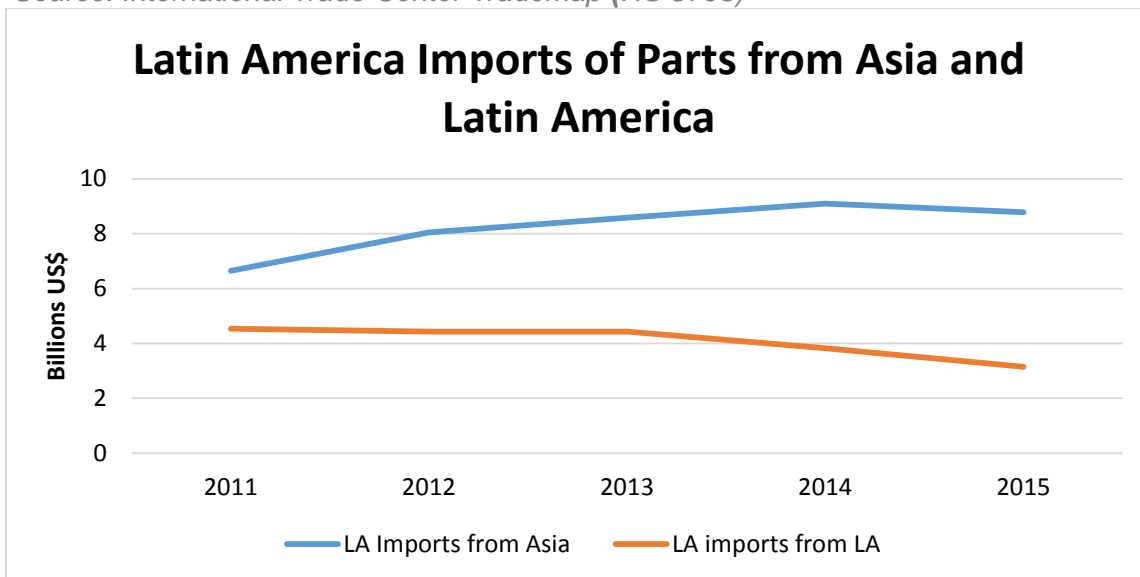
Trade

As the automotive industry is mostly regional in nature, Asia and Latin America have a dynamic trade relationship. Although many Asian companies have operating facilities in Latin America, changes in supply or lack of local capacity require imports of specific parts and services. Asia trade in vehicles was growing at an increasing rate in the 1990s and 2000s, but recent economic challenges combined with Asian OEMs investing directly in the region and supplying locally, the volume of exports is declining, where Latin America itself actually supplied a greater number of vehicles to the region than Asia. Components exports, on the other hand, were growing at an increasing rate over the past five years, although stagnating in 2015. This can be a testament to the increasing numbers of Asian auto manufactures operating in-market and demanding a greater number of components, both for production and aftermarket. As OEMs are typically the first

movers into new markets, components suppliers often prefer to export parts and pieces until the volume of trade and value of logistics costs reductions becomes sufficiently large.



Source: International Trade Center Trademap (HS 8703)



Source: International Trade Center Trademap (HS 8708)

Per ITC Trademap data, Mexico is the only substantially large exporter of both vehicles and components to Asia, where in 2015 the economy sent US\$2.1 billion vehicles and US\$1.2 billion in components to Asia region (including East, Southeast, South, Central Asia and Middle East). Brazil and Argentina do have moderate exports to the entire Asia region, where Brazil realized a jump in vehicles exports to Asia, from US\$23.878 million to over US\$234 million units from 2014 to 2015, although on the components side, a decrease from US\$123 million to US\$97 million during the same time frame. Argentina, on the other hand, value of vehicle exports to Asia are

relatively small, but grew from US\$77 thousand to US\$342 thousand while components increased from US\$4.2 million to US\$59.6 million from 2015 to 2015.

Asia and Latin America are becoming increasingly interconnected in the automotive value chain. Many Asian companies, both in terms of vehicles and components, have invested in Latin America and are supplying to the region. Although Asian companies are growing across Central and South America, the same cannot be said for Latin companies in Asia. Only Mexico has comparatively large exports of vehicles and components to Asia while Argentina and Brazil lag behind. Furthermore, there are not a large number of Latin automotive companies investing in Asia itself to compete. Given recent investment and trade trends between the two regions, this could be explained by the increased number of Asian affiliates operating in Latin America and working on a global supply basis. If supply shocks occur in Asia or there is an increase in demand, then Asian companies operating in Latin America could shift their supply chain and source materials from the Americas as needed.

Although Latin companies are not considered serious competitors in Asia, Asian trade and investment in Central and South America is indeed improving the overall automotive trade balance, creating jobs, supplying products, and encouraging intraregional trade. As Asian auto companies pick Latin economies as their “hub” for the region, intra-regional trade should increase as diversified demand instigates additional trade. With a growing concentration of Asian automotive companies operating in the region, this industrial value chain will continue to evolve and contribute to Latin industrialization and economic growth.

5.3.4 Conclusions and Recommendations

Due to the complexity of the industry, the automotive value chain is one of the most dynamic globally that incorporates producers of a variety of inputs and services across the World. Asia region has grown and excelled within the automotive market where companies such as Toyota, Hyundai, Honda, Mitsubishi, and many others are industry leaders with vast international operations and linkages to countless suppliers. The Asian regional automotive value chain has incorporated numerous Asian economies to form a robust and inter-connected relationship between economies and companies. Today, East Asian OEMs and components companies have operations in emerging Asian economies such as Cambodia; Indonesia; Thailand; Viet Nam; and others where each economy supports the industry based on comparative advantages.

Latin America, on the other hand, hosts a less sophisticated and integrated automotive industry. Only three economies, Argentina; Brazil; and Mexico have relatively large automotive operations with little investment and marginal trade to Asia. Although Latin America has not independently developed the automotive industry or strong RVCs, Asian trade and investment is helping to better connect and industrialize the region and improving Asia-Latin ties. Today, Chinese; Japanese; and Korean companies have operations across Latin America to supply various products, create jobs, bring technology and capital, and help grow the industry. As Latin American industry improves and business become more sophisticated, it is expected that public sectors will work harder to improve the business climate and infrastructure to fuel increased commercial activities, investments, and trade. Moreover, lower to middle income Latin economies are starting to become integrated into RVCs through cooperation with Asian companies. Recent automotive

investments into Uruguay, Paraguay, Colombia, Nicaragua and Peru highlight that the automotive value chain is indeed incorporating an increasing number Latin America economies, and often driven by Asian companies.

Each of the recommendations in the “Recommendations” section of the report are applicable to enhance Asian and Latin connectivity and role in GVCs. Improvements to infrastructure, human, openness to trade and investment, transparent rules and regulations, institutional upgrading, etc. are industry agnostic and benefit all industries, not just automotive. Although these are more general recommendations, they can be more deeply considered on a specific industry basis such as automotive. These recommendations are strictly based off of GVC theory and the research and analysis completed in this project. Industry specialists will have much more robust and specific recommendations as well as a better understanding of the regional and domestic specificities that impact the automotive industry.

Thus, a combination of domestic level and GVC related policy initiatives should be considered to support inter-regional GVC connectivity between Asia and Latin America. Below are a few to improve competitiveness and connectivity between Asian and Latin value chains.

A. Public-private partnerships for vocational/technical training and linking local SMEs to/for the automotive sector:

Improving human capital and local company capabilities are incredibly important to ensuring developing and emerging economies fully benefit from automotive GVC integration. A major challenge multinational automotive companies face when entering new markets is sourcing sufficient labor capable of understanding and executing technical work duties. Additionally, as SMEs make up such a large portion of domestic economies, helping to connect those related to the automotive industry with larger or MNC players could provide opportunities for company and employee upgrading. As such, public-private partnerships between economies’ public sectors and automotive stakeholders can be set up to ensure future growth in the industry. Specific vocational or technical training programs, such as those through joint Mexican and Japanese cooperation, geared towards the automotive industry based on company demands can help in supplying the labor necessary to effectively operate domestically. Moreover, taking an inventory of local SMEs and company capabilities, identifying which businesses could support the automotive sector, and actively looking to connect those capable of working with larger or MNC clients could fuel mutually beneficial growth. These types of programs will not only support automotive industrial development, but also upgrade the skills and capabilities of employees and SMEs.

B. Removal of tariffs and non-tariff trade barriers for the import of intermediate inputs for the production of finished goods:

The automotive industry demands a significant number of intermediate products and services to produce, deliver, and maintain consumer vehicles. Tariffs and non-tariff trade barriers effectively increase the cost of producing and supplying any product which in turn impacts consumer demand and industrial competitiveness. As such, intermediate goods and services that are used in the production of vehicles should be as low as possible or completely removed to support industry

growth and competitive pricing. With an open trade regime, both local and foreign companies can source the inputs necessary to produce and supply localized and international standard vehicles.

C. Connecting through international automotive forums such as the APEC Automotive Dialogue:

International industrial forums are excellent venues to connect with both company and public sector stakeholders from around the globe. As the automotive industry integrates a broad array on sectors with numerous benefits to economies and society, international forums can help economies and companies highlight their competitive advantages and engage directly with those capable of enhancing trade, investment, and other cooperative opportunities. The APEC Automotive Dialogue, for example, brings APEC economies and industry representatives together to map strategies to improve the integration and development objectives within the region. The public-private sector dialogue presents an outlet for relevant stakeholders to identify industry barriers, coordinate cooperation mechanisms, improve policy development, and networking opportunities. Forums such as APEC certainly help bridge the distance between Asia and Latin America to help facilitate inter-regional GVC connectivity.

D. Investments into downstream industries related to the automotive industry based on competitive advantages:

Developing and emerging economies, especially those in Latin America and Southeast Asia, are often commodity dependent. Although these economies may focus on base level extraction and the sale of raw to semi-processed natural resources, many commodities can be utilized in the automotive industry, where companies can add value through R&D and processing. For example, Chile and Peru have large copper industries, but focus primarily on the sale of the raw commodity itself where other economies and companies add value through fabrication. On the other hand, Thailand and Indonesia, with strong rubber industries, have developed strong tire sectors that supply both locally and abroad. By looking at respective economy competitive advantages, comparing to what is demanded in the automotive industry, and directing R&D and investments to the utilization and upgradation of abundant commodities, local industries can better engage the ever-growing automotive sector.

6. Asia and Latin America Connectivity

6.1 Introduction

The sections above give a broad synopsis of the theoretical concepts of GVCs and an overview of Asian and Latin GVC development with a focus on the various concepts that impact GVC integration. Clearly, Asia region has applied and excelled at integrating an increasing number of Asian economies into GVCs. Today, Asia region accounts for over 40 percent of global economic growth, attracts the largest proportion of global FDI, and increasingly upgrades product and service offerings, and specializes in countless goods to compete globally. Moreover, most Asian economies are looking to improve both institutions and infrastructure to accommodate the growing populations and improved business operating environment.

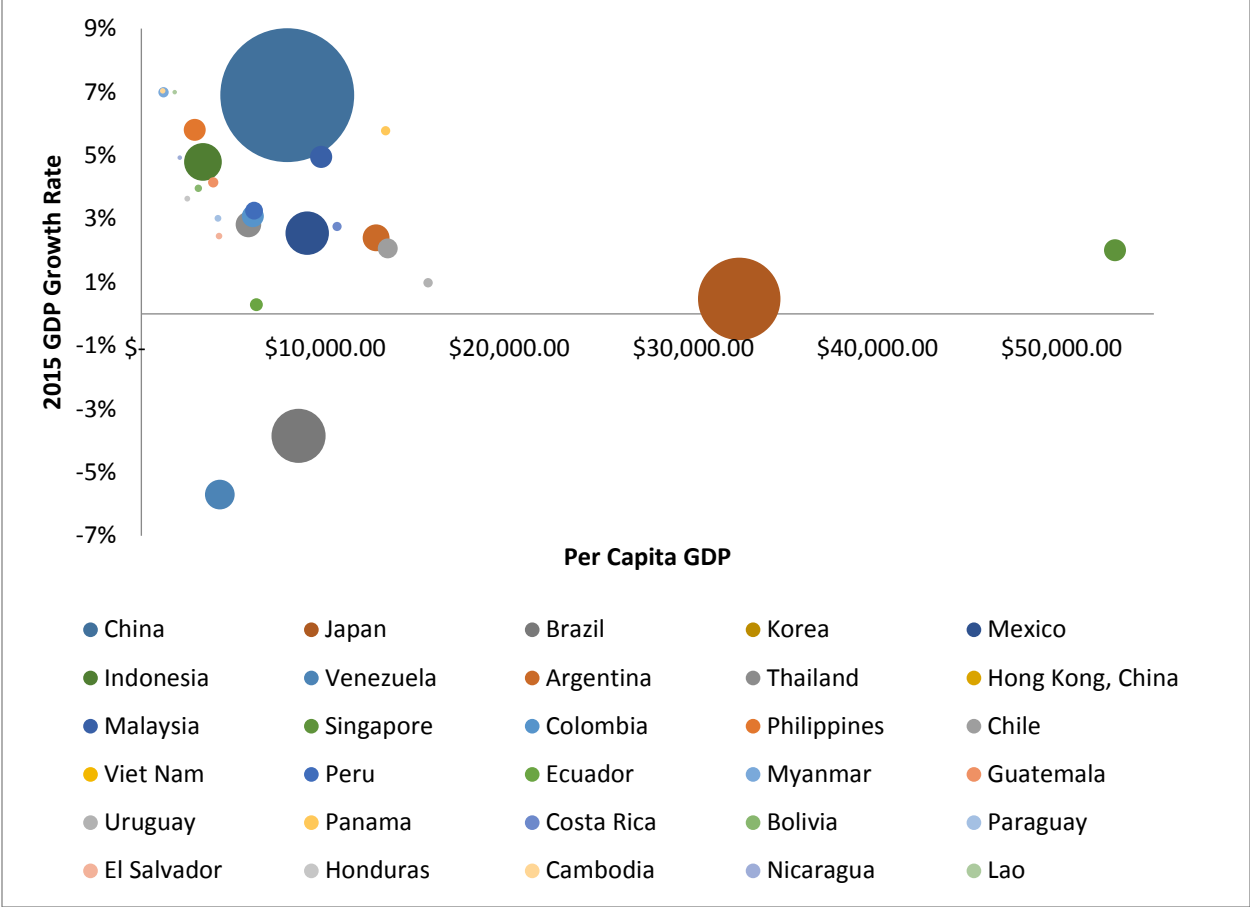
Latin America, on the other hand, has not engaged GVCs as well as Asia. The region itself has not connected to similar levels as Asia while the economies are generally less complex with a tighter diversity of products and services. Moreover, there has not been a lead economy to fuel RVC connectivity across Latin America. In Asia, Japan initially led Asian GVC integration where China; Korea; and the emerging Asian economies are increasingly trading and investing intra-regionally. In Latin America, Mexico, with the most complex economy in Latin America, focuses primarily on North American economic relations, while Brazil, the region's largest economy, is generally internally focused. Moreover, the region has focused far too heavily on natural resource exploitation with comparatively little investment into downstream industries or product upgrading. As such, many Latin economies are exposed to global demand for commodities and are heavily impacted by external economic shocks.

Although Latin America is not as integrated into GVCs as Asia, there is an opportunity to cooperate with Asian companies and public sectors to better connect and grow together. Asian companies, with their experience specializing and building global competitiveness, can find opportunities in Latin America to utilize local capabilities and supply to both Latin America itself and reduce logistics and potentially trade costs to North America. Latin American companies can cooperate with Asian investors and traders to utilize Asian technologies, know how, and global networks to improve efficiencies and competitiveness.

Public sectors from both regions can also play a supporting role by implementing business friendly trade and investment facilities, improving institutions to support both domestic operations and international connectivity, enhance both transportation and communications infrastructure to reduce the costs and time necessary to work with foreign partners, and strive to build human capital to institute a culture and mindset for innovation, diversification, and global opportunity.

On a gross basis, Asia region is larger economically, with China dwarfing all other economies in terms of overall size, where Hong Kong, China; Japan; Korea; and Singapore have achieved high income status. As there is a much wider range in incomes and economic size across Asia, the more developed and larger economies have expanded GVCs and are actively incorporating emerging Asian economies into greater value chains while also seeking opportunities in Latin America. In Latin America, only Mexico and Brazil rank in the top twenty large economies while most economies are of middle to lower income supplying relatively similar or undiversified product

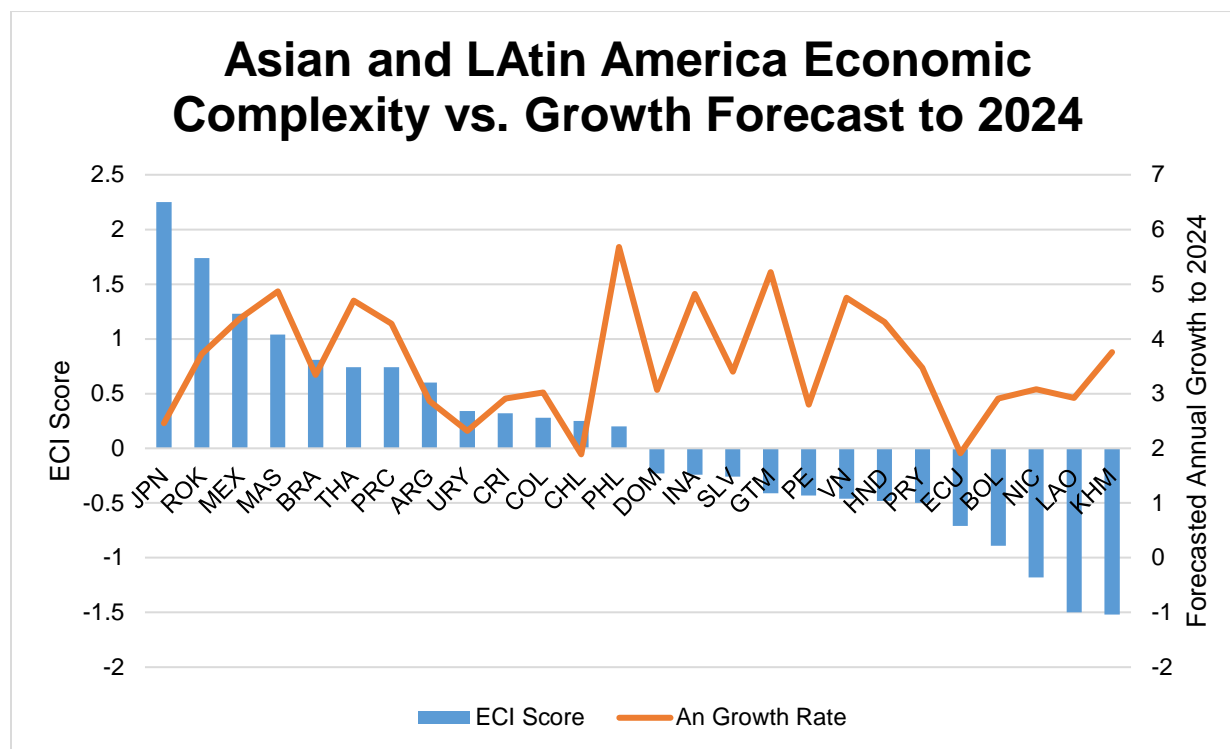
ranges. These differences in size and intra-connectivity also impacts overall GDP growth. Besides for Japan, all Asian economies are growing at reasonable rates which fuels regional growth. In Latin America, the region's largest economy, Brazil, is contracting while Venezuela's economy has declined 5 percent from last year. Although Mexico grew by a modest 2.5 percent, this is not sufficient to offset Brazil and Venezuela's decline, while most Mexican growth is geared towards North American trade and investment. As Asia is leading the World in terms of economic growth and is increasingly investing abroad, Asia business partners could find new opportunities in Latin America to develop new businesses and facilitate industrial upgrading.



Source: World Bank Data

Asia's range of economic complexity has also fostered RVC creation. As stated in the Asia section, Japan, the most complex economy in Asia, led the charge to expand RVCs. As other economies such as China and Korea developed, they also looked for opportunities abroad, integrating an increasing number of Asian economies into their value chains and advancing economic complexity. As Latin America is more homogenous in terms of economic complexity, the same dynamic as Asia has not occurred. There is much less intra-regional trade and investment between Latin economies while most economies, besides for Mexico, produce few intermediate goods. Without a strong lead economy in Latin America to drive regional or GVCs, the more complex or larger Asian economies such as China, Japan and Korea could cooperate with Latin companies to build mutually beneficial business relationships. Asian FDI and trade in

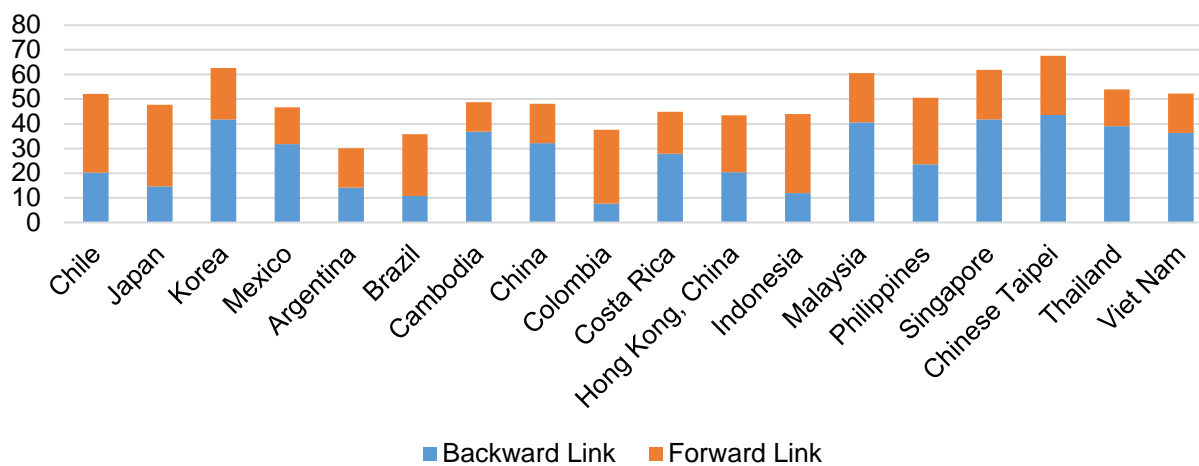
manufactured and technological goods can bring the capital, technology and experience through FDI while the supply of manufactured goods offers a diversity of products, often at lower costs or higher quality, than what is supplied locally.



Source: Atlas of Economic Complexity 2014

6.2 Backwards and forwards linkages

Asian and Latin GVC Integration



Source: OECD Trade in Value Added

Note: Forward linkages are the domestic value added embodied in foreign exports as a share of gross exports, backward linkages are the foreign value added share of gross exports

Backward and forward linkage indicators are considered reasonable measures of economies' participation in GVCs. Backward linkages estimate an economy's usage of imported products from abroad and utilized in exports while forward linkages refer to an economy's exported products incorporated into other economies' exports. Backward linkages are most common in manufacturing intensive economies where studies show that these backward linkages are correlated to diversification, productivity growth and positive structural change (OECD 2016). Forward linkages, which are more common in resource and service intensive economies, relate to the amount of foreign content incorporated into other economies' exports. For example, an economy such as Indonesia which exports a large amount of raw minerals for processing which would then be exported again, has a high ranking in forward linkages.

On an average basis, Latin America's GVC participation is lower than most other regions, including Asia. Per the OECD's TiVA indicators, which only have data on six Latin American economies, the region's share of foreign value added in gross exports was only 20 percent while Asia's average participation was around 30 percent. A majority of this backwards participation in Latin America is with Mexico as the economy does significant intermediate goods trade with North America. Central and South America's forward integration, although higher than backward integration, is still less than Asia. Latin economies such as Brazil; Chile; and Colombia and Asian economies like Indonesia; Japan; and Philippines are all highly integrated into forward linkages.

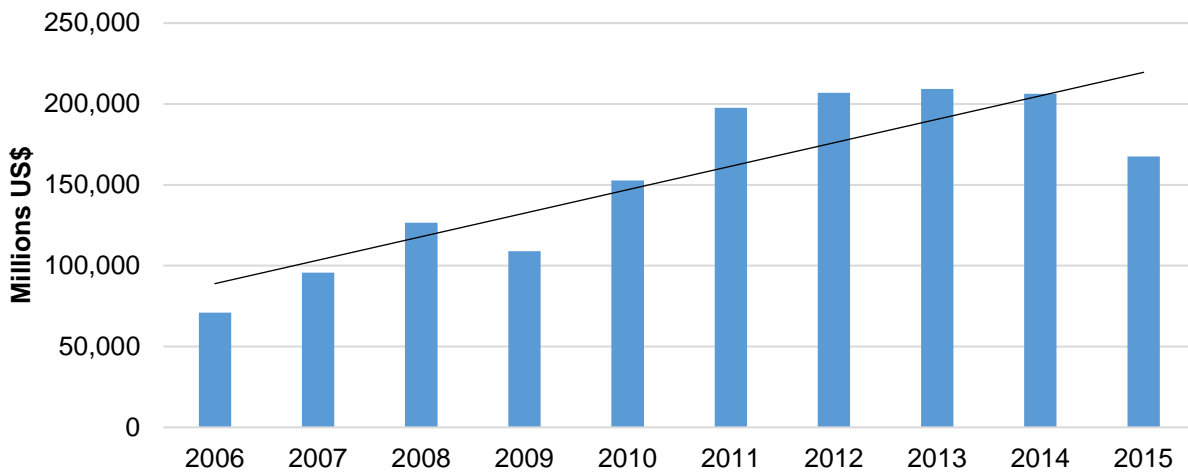
The OECD conducted an analysis that highlights low intra-regional integration in Latin America. Per the six economies the OECD has data on, only 9 percent of Latin value added included in other economies' exports was supplied by Latin exports. Argentina and Colombia seem to have the most forward linkages with 17 and 14 percent respectively, while Mexico only has a 3 percent linkage with the rest of Latin America (OECD 2016). Asia, on the other hand, has more forward integration where commodities from Indonesia and the Philippines may be exported to China and processed and then exported again. Or, Japan, which is the most complex economy with significant forward linkages and FDI in other Asian economies, exports services, technology, and components, that are utilized and assembled, then exported again. As Asia has emerged as the factory of the World, it has developed both backward and forward linkages.

While not substantially large, Latin America and Asia do indeed have some backward and forward linkages. Both Brazil and Chile have strong links with China based on raw commodities. Argentina has intermediate goods exports to Asia in agricultural products such as soybeans and soy oilcake. Costa Rica is one of the few Latin American economies that have a decent concentration in manufactured electronic goods exports to Asia. From Asia, Latin America region is a large importer of manufactured intermediate and finished goods. Overall, Latin America utilizes a greater proportion of Asian imports, especially from China, in their exports than vice versa.

6.3 Trade

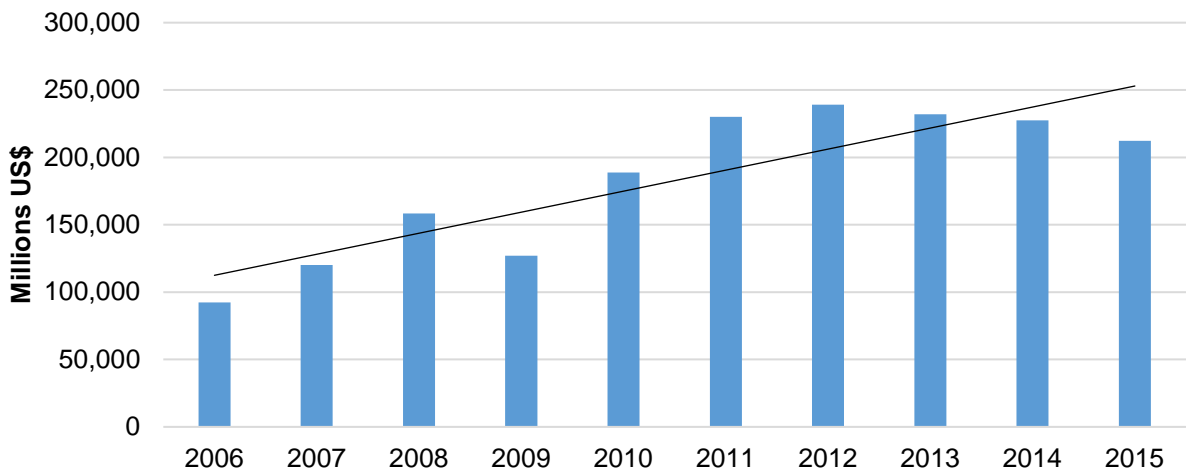
Trade flows can highlight the composition of Latin American and Asian GVC connectivity. Over the past decade, trade between the two regions has increased incredibly, although inter-regional trade is on a downward slope as the Chinese economy demands fewer economies and there is Latin wealth generation is slowing. As stated before, Latin America exports have been concentrated on commodity exports to Asia while Asia continues to export intermediate and finished medium to high technology manufactures. Due to the structure of Asia-Latin trade relationship, Latin America has a growing trade deficit with Asia as demand for manufactures outweighs Asia's appetite for commodities. Moreover, Latin trade to Asia is dominated by a few large companies that supply relatively few product types. On the other hand, a diversity of both large and SME Asian companies export to Latin America.

Asian Imports from Latin America



Source: International Trade Center Trademap

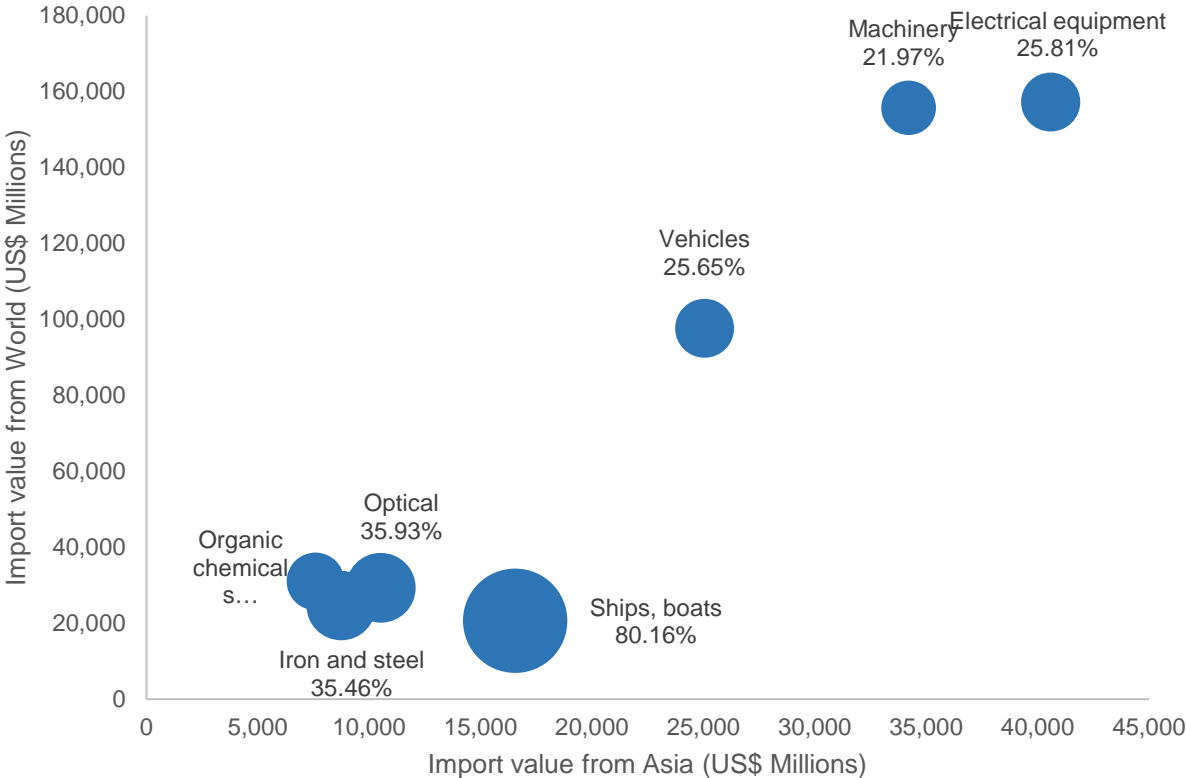
Asian Exports to Latin America



Source: International Trade Center Trademap

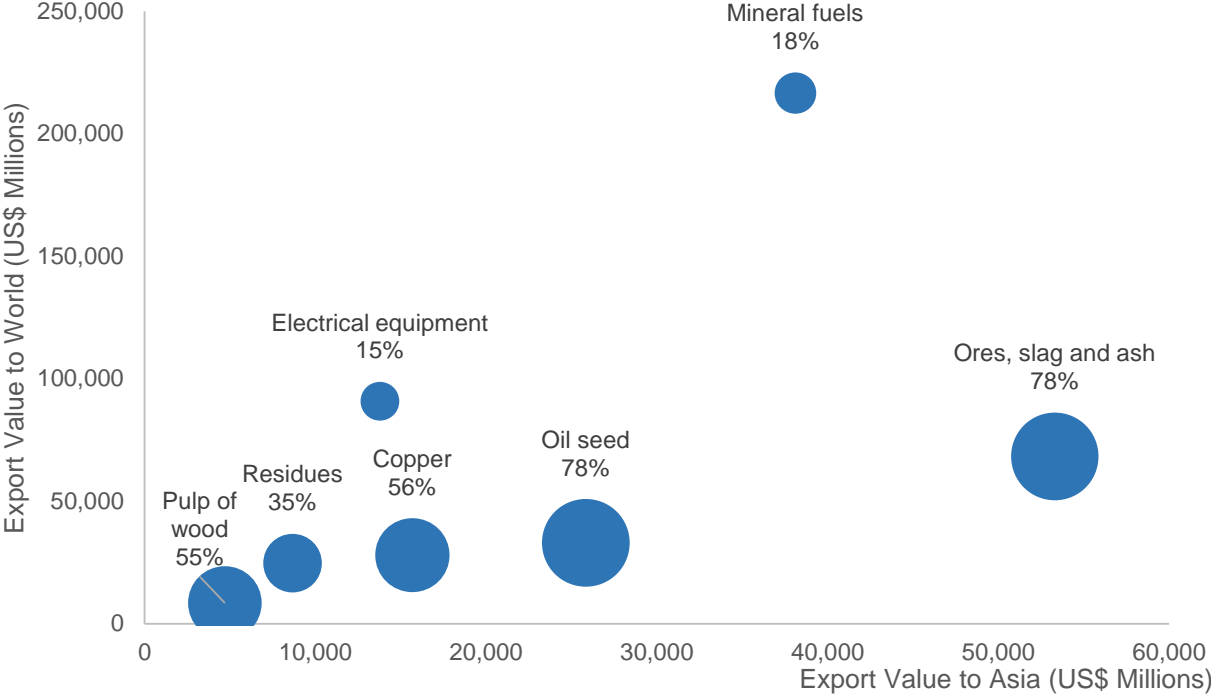
While trade grew over the past decade and is presently, Asia and Latin America do indeed have incredible trade potential if Latin American companies look to upgrade and diversify production activities. From 2009 to 2013, exports from Asia to Latin America only accounted for 4.5 percent of global exports while Asia imported approximately 4 percent of total imports from Latin America (Latin exports to Asia grew from 6 to 20 percent of gross exports over the same time period). China; Japan; and Korea are the primary Asian economies trading with Latin America while Argentina; Brazil; Chile; and Mexico are main exporters to Asia (ECLAC 2015). Due to decreasing demand for Latin commodities, the value of exports to Asia has fallen since 2013. Manufactured imports from Asia have decreased, but not as much as commodity exports. Asia’s diversified exports to Latin America, of both intermediate products and finished goods, can weather economic down turns in comparison to Latin America’s heavy concentration in commodity exports that are subject to global market pricing. The current slump in commodity prices and the impact on Latin American economies should be a wakeup call to both public sectors and companies. Economic diversification is indeed necessary to navigate through shocks in supply and demand while enhancing global competitiveness and international connectivity supports long term stability.

Latin America Imports from Asia



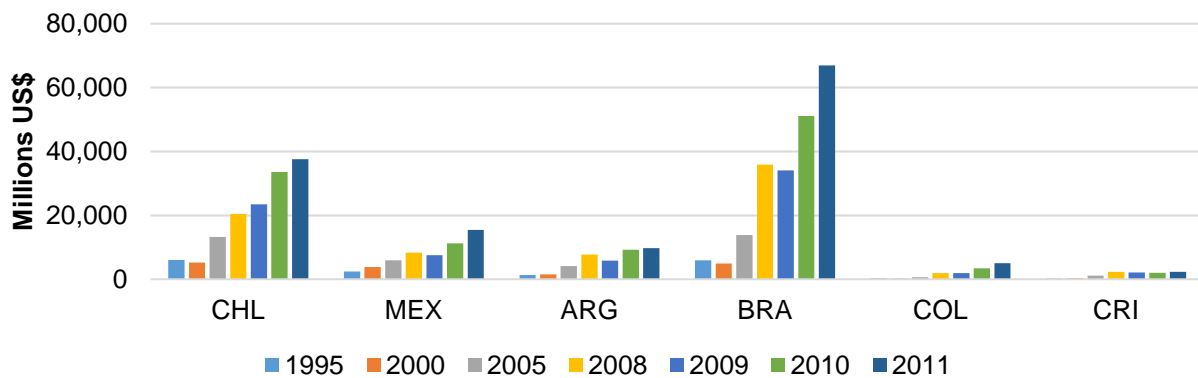
Source: UNCTADSTAT; Data is for exports from all of Latin America and Caribbean economies minus CARICOM with exports to the entire Asia region; bubble size and percent represents percent import from Asia vs. World

Latin America Exports to Asia



Source: UNCTADSTAT; Data is for exports from all of Latin America and Caribbean economies minus CARICOM with exports to the entire Asia region; bubble size and percent represents percent of exports to Asia vs. World

East and Southeast Asian Intermediate Exports to Latin America



Source: OECD Trade in Value Added

On a firm level basis, Asian companies export more than Latin companies. An analysis by ECLAC in 2015 highlights that less than 1 percent of Latin companies exported in 2012 with an even smaller percentage of SMEs exporting. These companies often face challenges with bridging the distance between the two regions, lack of understanding on market entry and product demand, cultural and language barriers, etc. The analysis further states that Asian SMEs export between 10 and 30 times more than Latin SMEs. As such a large percentage of Latin companies are SMEs, it is of great importance to better integrate them into domestic, regional, or GVCs to increase productivity and instigate more exports. There could be an opportunity to build cooperative initiatives between Latin SMEs and larger corporations that export from Latin America or Asian companies could build partnerships or invest in Latin SMEs to enter Latin markets utilizing their skills and expertise to supply and export from respective economies. Research highlights that most Latin SMEs have comparatively low levels of productivity, so incorporating work with larger or international firms can push the companies to enhance their operations to become more competitive.

Public sectors can also play a role in increasing inter-regional trade opportunities. Trade promotion and investment attraction initiatives, trade missions, online trade platforms, transparency in customs and transportation logistics, open trade policy, and preferential trade agreements can all support improved trade relations between Asia and Latin America. There are numerous preferential trade agreements connecting the two regions while larger multinational agreements such as Pacific Alliance could better link the two regions. While preferential trade agreements provide a framework for trade, companies must understand how the agreements operate in practice while they must also find customers abroad. Educating private sector companies on inter-regional trade and helping to actively promote products abroad can facilitate initial trade relationships. Online trade platforms can also be used to cost effectively reach potential customers in distant markets. Without sufficient education and proactive trade support, it is unlikely that a company could stand out amongst global competition without prior experience

or networks. Thus, public-private trade programs can support both companies and public sectors to grow economies and connect new trade partners.

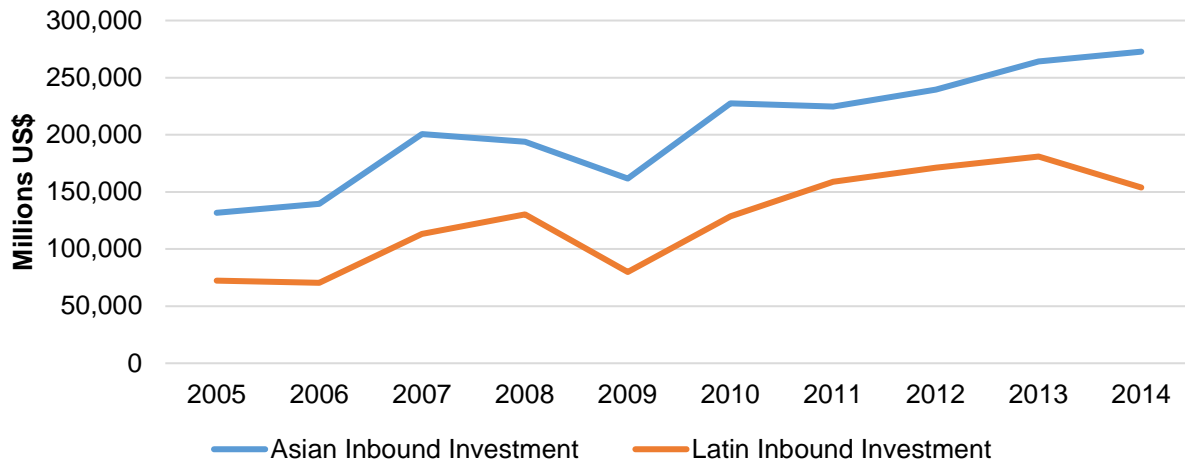
6.4 Foreign Direct Investment

FDI and facets such as MNC cooperation, mergers & acquisitions, technology transfer, training, etc. are all critical to GVC integration. FDI attraction and inbound investment can stimulate industrialization, fuel capital to emerging sectors, enhance human capital, provide jobs, increase tax revenues, improve technology utilization, and provide a number of other indirect benefits. Outbound investment promotion and outbound investment (OFDI) supports companies to find cost savings abroad, enter new markets, increase global market share, access raw or processed commodities, etc. Both inbound and outbound FDI create opportunities for sending and receiving economies. Private sector led initiatives can enhance commercial relations abroad, increase exports or imports, support the exchange of people and cultures, and providing the foundation for continued GVC integration. By investing in and enhancing trade with other economies, companies compete globally, expanding their markets and upgrading their product lines to fuel growth. This can provide numerous economic and social benefits and is a tenant of GVC theory.

FDI to Asia and Latin America has been on an increasing trend over the past decade. Although the global financial crisis of 2008 interrupted the growth pattern, FDI bounced back quickly in both Asia and Latin America, where at least in Asia, FDI continues to grow in the region. Latin America on the other hand, is realizing decreasing levels of FDI due to the crash in commodity pricing, flagging competitiveness, and political challenges. As FDI is so important to GVC connectivity, both regions should continue to both attract FDI to target industries and invest abroad to tap new markets. This FDI strengthens GVC connectivity as respective economy companies have vested interests with investment partners.

Asia region has attracted the most global FDI over the past couple decades. Although Latin FDI trends tend to follow that of Asia, gross levels are substantially less than Asia. Over the past ten years, Latin America has received, on average, 60 percent less FDI than Asia, which is tens to hundreds of billions of dollars less flowing to Latin America per year and the gap is increasing as Latin America is going through a period of protracted growth. These FDI flows have supported Asian GVC integration while Latin America lags behind in global connectivity.

Asian vs. Latin Inbound Investment Flows

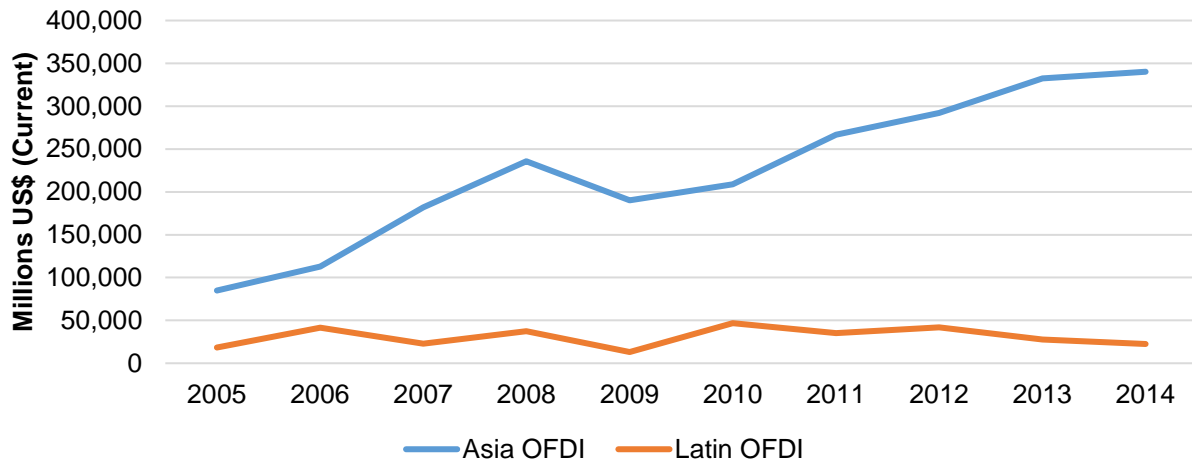


Source: UNCTADSTAT

While Asian FDI has been increasing yearly, so has the region's levels of outbound FDI. Over the past decade there are a number of years, including 2014, where Asia's levels of OFDI surpassed that of inbound investment. This can be explained by the large amount of outbound investment by Japanese and Korean firms with comparatively less inbound investment. Moreover, China's outbound investment has been increasing rapidly, by almost 850 percent since 2005. In 2014, China OFDI levels were 90 percent of inbound investments, highlighting that as Chinese firms evolve and are increasingly engaged in GVCs, they are also looking abroad to expand markets and enhance overall competitiveness, including investments to Latin America.

Asia's significant levels of both inbound and outbound FDI help explain how the region has integrated into GVCs. Today, it is not only the conglomerates and largest Asian companies that are investing abroad, but also niche SMEs in the technology and services sectors. By specializing in what they do best, a wide range of Asian companies are finding opportunities abroad. Moreover, Asian companies are increasingly investing in Latin America. Japan and Korea have fueled investments into industries such as automotive, garments and textiles, food processing, any many more. China is also an increasingly important investment partner. Primarily, China is invested into commodity industries in minerals and oil & gas, but is increasingly investing into infrastructure and services industries such as telecoms and power generation.

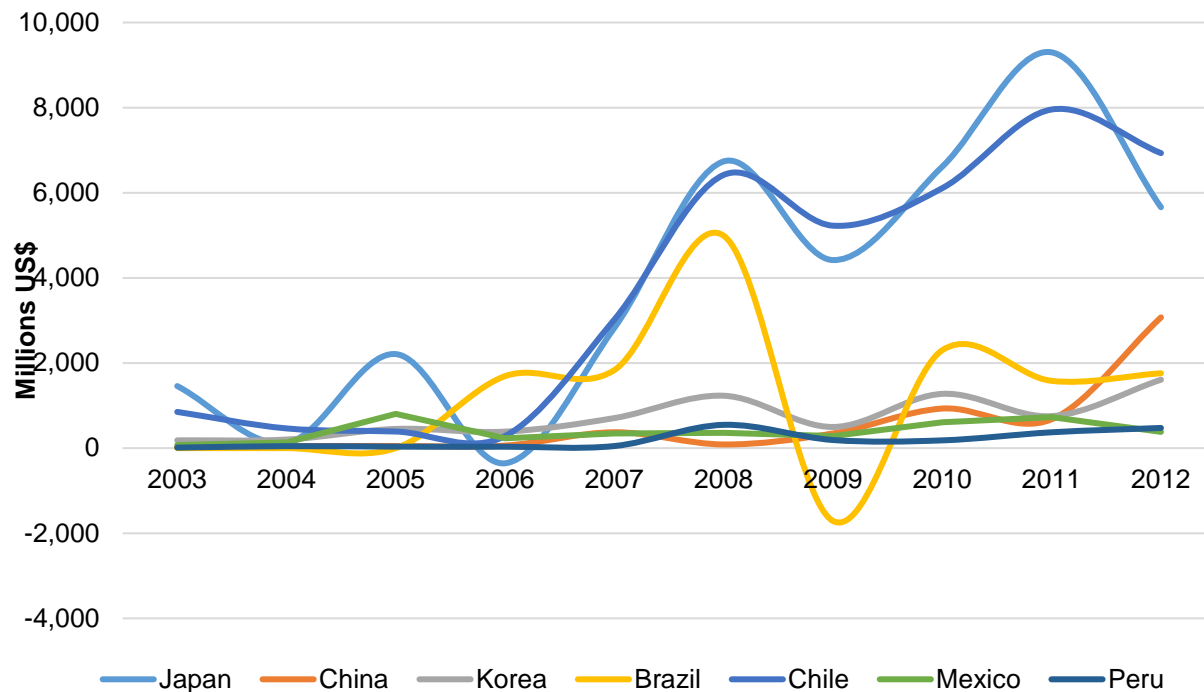
Asian vs. Latin OFDI



Source: UNCTADSTAT

Latin America is not comparable to Asia in terms of OFDI. As stated earlier in the report, only a relatively small number of companies export abroad, much less invest. Latin outbound investments are also usually horizontal rather than vertical as transplant operations for what they already do at home rather than accessing upgraded processes or product integration. Typically, Latin investments flow into commodity markets such as mining, cement, or food and beverage. Thus, the few multilatinas that do invest abroad are not usually incorporating intermediate process or efficiency enhancements, but rather just expanding markets or accessing resources. Even in Latin America itself, Latin and Asian companies are investing at comparable levels where China has been increasing its investments to the region over the past few years and is seen as a potential growing investment source and GVC partner for the region.

Outbound FDI to Latin America



Source: UNCTADSTAT; bilateral OFDI data only available to 2012, Caribbean economies such as British Virgin Islands and Cayman Islands not included in this data representation

FDI flows from both Asia and Latin America are the primary way the two regions can better connect and incorporate. Asian companies can institute successful industries and business practices that have propelled the Asia region in Latin America to grow market share. On the other hand, Latin America can utilize Asian expertise to access technologies, international business networks, and numerous other benefits from FDI participation. While Asian companies may have more experience and capacity to assess Latin markets, Latin public sectors and companies alike should better explore Asian markets, especially because Asia is the driver of global economic growth.

6.5 Connecting Asia to Latin America

Asia's emergence as the Factory of the World is becoming increasingly sophisticated and expanding into more distant markets. Asian momentum can help better incorporate Latin economies into GVCs. Asia's current industrial mix ranging from commodity extraction and base level manufacturing, to specialization into numerous intermediate goods and services, to significant value addition into engineering, design, high technologies, and downstream industries can be utilized and further applied in Latin America. Moreover, as Asia becomes increasingly saturated and competitive, with both Western and Asian companies competing to gain market share, Asian companies may look to build growth industries in Latin America. Central and South America, with an abundance of natural resources and comparatively lower levels of industrialization offer such a growth opportunity if respective Latin economies offer a business

friendly operational environment and actively court Asian business partners. Asian companies, especially those in challenging places to do business such as China; Indonesia; or Viet Nam, also have the experience working through bureaucratic processes and resource constraints. Economies like Japan and Korea have the capital and technology to help upgrade products and productivity. By linking experience with opportunity and supply with demand, both regions could create mutually beneficial opportunities through cooperation.

Both regions have numerous companies trading and investing inter-regionally, although Asia has many more firms operating in and with Latin America. Although Latin America region is in an economic slump, this could be an opportunity for both public sectors and companies to implement improvements on a regulatory, operational, and connectivity basis to attract more FDI, better integrate into GVCs, upgrade and diversify the level of industrialization, and improve economic stability. Below are a number of recommendations that could support enhanced integration of GVCs between Asia and Latin America.

7. Outcomes of APEC Public Private Dialogue on Enhancement of Integration of RVCs in Asia and Latin America

On the 18th of August 2016, Public Private Dialogue (PPD) on this Study was held at the APEC forum in Lima, Peru. Opening remarks were given by the Peruvian Ambassador to APEC as well as the Japanese Ambassador to Peru. The forum was moderated by the lead researcher for the study, while presentations were given by prominent GVC Academics from JICA, OECD and ECLAC as well as private sector representatives from both Asian companies with operations in Latin America and Latin companies with operations in Asia. Private sector companies included Posco Daewoo (Korean trading company), Viettel (Bitel, Vietnamese telecommunications company), Honda del Peru (Japanese automotive company), AJE (Peruvian beverage company) and Huawei (Chinese cellular phone company). The event brought together just under eighty stakeholders from public sector, academia, and the private sector to discuss the status quo of GVC development and what can be done to improve GVC integration.

The purpose of the PPD was to delve into the dynamics of both Asian and Latin American value chains, the status quo of value chain development between the two regions, and what can be done to enhance the trade and investment relationship between the two regions. The PPD represents the interest in strengthening GVC connectivity between the two regions for mutually beneficial growth and development.

While GVCs in Asia have strengthened an incredible amount over the past decades, the same cannot be said for Latin America. The PPD instigated a forum where leaders from both the public and private sectors could share their experiences, findings, and practical knowledge on both intra- and inter-RVC development. Although challenges remain to connect the two distant regions, PPD participants eluded to what some of the critical factors are at the economy level, to support efficient trade and FDI investment as well as a diversity of strategies companies can utilize to identify, enter, and excel in new markets.

For example, a Viettel representative discussed how the Vietnamese company found incredible opportunities in Peru and other Latin American economies. Today, Viettel, otherwise known as Bitel in Peru, is building mobile infrastructure across the economy to supply quality mobile services to the Peruvian population. Moreover, Bitel's business model and operations are increasing local competition and lowering the cost of mobile services for consumers. Additionally, the PPD hosted a prominent AJE company representative that discussed how the Peruvian beverage company, that competes with much larger companies such as Coke and Pepsi, has found incredible business opportunities across Asia by targeting lower to middle class consumers and employing a dynamic supply chain mechanism while sourcing a majority of ingredients in target economies. These private sector inputs highlighted that there are indeed opportunities for both Asian and Latin companies across the Pacific. While each company and economy is unique,

they can look at respective competitive advantages and apply a diversity of strategies to achieve success.

As GVCs are such a broad topic that encompass most factors involved in modern day economics, trade and investment, stakeholders realize that there is no one policy initiative that can integrate an economy or company into GVCs. Economies' competencies such as strong and consistent institutions and rule of law, high quality infrastructure and education, and an open trade and investment regime do indeed improve the probability of domestic companies engaging into GVCs. Moreover, industrial development frameworks that further develop human capital, fuel investments into research and development, offer financing to both large and SME firms, and actively promote international trade and attract FDI can strengthen GVC linkages. Finally, as the firm is the basic unit of a GVC, companies can take a diversity of methodologies, such as developing new products, offering lower costs products or services, creating efficiency enhancements, etc. to improve competitiveness and find a link within a GVC.

The diversity of speakers from esteemed organizations discussed each of the aforementioned topics in great detail, providing insights on what can be done to support Latin - Asian GVC integration, what challenges remain to incorporate, and what companies and economies can do to improve. By bringing the public sector, academia, and the private sector together, the PPD was a very well rounded forum that gives insights to policy makers as well as company executives to better consider the current place in GVCs and the overarching importance of better understanding competitiveness and the challenges of a globalized world.

The hope is that Latin American companies and economies can learn from Asia's experience building GVCs over the past thirty years as well as connecting to Asian companies and investments to fuel Latin industrialization. Moreover, the PPD highlighted some of the attractive opportunities in Latin America and strategies that could be applied to increasingly engage the region with incredible potential.

Although there are no firm conclusions on how to better connect the two regions as there is no "silver bullet" to improve GVC incorporation, the PPD was successful in furthering the PPD between Latin and Asian stakeholders for future progress. The recommendations in the following section which include both high level and specific recommendations are based off of the extensive literature review conducted for this study, interviews with a diversity of professionals from six APEC economies, as well as the inputs from expert stakeholders from the PPD.

8. Recommendations

8.1 High level recommendations to facilitate GVC connectivity

The analysis above provides the background and theory as to why a number of factors are important and recommended for GVC integration. Below is a brief description of why and how improvements to each of the recommendations are necessary to better connect Asia to Latin America.

- A. **Infrastructure improvements:** Improved infrastructure supports both domestic economies and international connectivity. Low quality infrastructure raises the cost of transporting goods and services and reduces overall domestic competitiveness in comparison to economies with more efficient systems. Deep water ports with short dwell times, airport connectivity, efficient road transport systems, railroad connections to industrial and trade centers, and high speed internet connections support both business and societal efficiency. High quality infrastructures is even more important when trying to do business between Asia and Latin America. The sheer distance across the Pacific or overland already incurs expensive logistics costs and challenges connecting with counterparts in differing time zones. Time constraints and additional and unforeseen costs will discourage increasing and sustainable trade and investment. As such, each economy, both in Asia and Latin America, should look to improve the supply of all types of infrastructure to efficiently engage GVCs.
- B. **Trade cost reductions and trade facilitation:** Trade cost reductions can fuel product competitiveness and support trade in intermediate goods and services. High transportation costs, delays at customs, conflicts in international trade policy and regulation, and other trade barriers discourage GVC integration as companies experience inflated costs and hindrances when trading with international partners. As such, Asian and Latin America economies looking to better integrate into GVCs should pursue open trade regimes that allow for the efficient and manageable flow of goods, especially those commodities and intermediate goods that are utilized for adding value and support comparative advantage industries. Free trade and preferential trade agreements are one mechanism economies can pursue to improve connectivity with trade partners. While bilateral trade agreements can support trade between two economies, multi-lateral and/or macro trade agreements, such as those set out by the WTO and those proposed in agreements such as Pacific Alliance, and RCEP create better harmony and facilities for inclusive trade. Aside for trade agreements, efficient and transparent customs controls, multimodal transport agreements, and cross-border freight agreements can support intra- and inter-regional trade. While there are a number of intra-regional facilities such as the ASEAN Economic Community and MERCOSUR already operating, improvements can be made and expanded to facilitate trade. The greater the harmonization, understanding, transparency, and connectivity between economies and regions, the more likely they are to increase trade and investment.
- C. **Transparent and consistent rules and regulations:** Transparent rules and regulations inform businesses on what they need to be aware of and comply with when operating in an economy. This is incredibly important for FDI as foreign investors are not necessarily fully

informed on the business regulatory environment, legal systems, and cultural sensitivities of diverse economies. With a sound and consistent business regulatory environment, companies, both domestic and foreign, can develop their business plan to match local specifications. If rules and regulations are frequently changing, these adjustments can frustrate businesses, create operational inefficiencies, and lower overall confidence in doing business in a respective economy.

- D. **Continuous upgrading of education opportunities:** Human capital and the ability to upgrade, innovate, and effectively reach an increasing amount of customers drives overall competitiveness. Aside for enhancing business performance and creation/utilization of advanced technologies, a better educated society provides numerous collective benefits. As such, investments into both base level and higher education institutions can lay the foundation for future competitiveness. Educational initiatives, especially those geared towards developing a work-ready population, support business growth and a company's ability to engage GVCs. Evidence supports that economies with superior educational attainment have higher per capita GDPs, standards of living, and GVC integration. This is evidenced in both Asian and Latin American economies where there are also numerous programs aimed at developing talent for a specific industry has led to successful growth.
- E. **Access to finance:** Access to finance, whether it be through trade finance, project financing, SME finance, etc. is incredibly important to support local business development, upgrading, and international connectivity. As such, public sectors should cooperate with both public and private banking institutions to supply the capital necessary to grow industry while also putting the systems in place to regulate, enforce, and control excess borrowing. Priorities should be mapped out with easier access or preferable financing terms made available for focus sectors. Moreover, banks need to be connected to international markets to facilitate trade and investment flows. Today, there are an abundance of financial products and capabilities. Some economies utilize finance more than others where it can be argued that some economies have relied on it too heavily. It is a challenging balance to provide growth capital while managing the flow of funds.
- F. **Openness to FDI:** Protectionism, heavy preference for domestic companies, and active deterrence of foreign investors inhibits an economy's ability to engage GVCs. FDI is a key driver of GVC integration where companies can open operations in different economies to utilize their expertise to grow and contribute to the investment economy. Of course it is necessary for an economy to protect strategic assets and regulate activities in sensitive industries such as nuclear and weaponry, but foreign engagement pushes the overall competitiveness of industry and encourages upgrading, innovation, and motivation to obtain greater market share. Aside for being open to FDI, economies should actively pursue FDI into priority industries that demand additional capital and/or expertise. FDI also enhances direct linkages to other economies. As foreign companies and workers enter new markets, they get to know the investment economy, positive and negative qualities, and an appreciation for local culture. This provides an additional opportunity for local companies to link with the FDI business and potentially instigate exports or obtain higher quality/competitive pricing of products through the new connection.

8.2 Specific recommendations to facilitate GVC connectivity

While still broad based, the recommendations below are more focused initiatives that can be implemented either at specific public sector organizations to make incremental improvements or through public-private engagements aimed at enhancing competitiveness and connectivity. These recommendations are based on the interviews and literature review conducted for this study combined with practical experience supporting trade and investment across Asia with experience in Latin America.

- A. **Integrated online trade facilitation website:** Economies looking to promote SME product lines abroad and facilitate trade and investment with international partners can develop an online trade repository and database. Easily accessible high quality websites are quick and efficient ways to reach and connect with others around the world. This online database can serve numerous functions. First, an economy can take a survey the variety of products produced locally, categorize them, and then list them online in an Amazon.com type format. Next, the website can include a list of local distributors with quality rankings to support the importation and distribution of products. Thirdly, the website can work as an information database for companies that want to export as well as a regulatory database listing rules, regulations, requirements, etc. for both foreign traders and investors. By developing a functional and well organized trade and information portal, economies can support international commerce more efficiently.
- B. **Active trade promotion and investment attraction activities:** Due to the incredible economic growth and increasing levels of OFDI from Asia region, Latin America should prioritize new business development initiatives to better cooperate across the Pacific while Asian economies can seek new opportunities in the Americas. public sector led initiatives to support or subsidize market expansion or the attraction of investments can stimulate improved participation by domestic companies, especially SMEs, as well as enhancing the overall understanding of conducting cross-border business and developing meaningful business relationships. Information packets, online connectivity platforms, trade promotion missions and road shows, investment attraction initiatives, partner matching, supplier and distributor databases, etc. can all be utilized to introduce high potential companies to opportunities abroad. These initiatives should be focused on industries and companies that have apparent comparative advantages or are in priority industries. Without active public sector support, many local companies will not be aware of international prospects or how to connect while domestic investments may be overshadowed by another economy or company that more heavily promoted itself. In a globalized world, it is incumbent on both public and private sector entities to cooperate to enhance overall competitiveness and an enhanced role in GVCs. While international deals may not be immediately forthcoming, objectives should be focused on the mid-term where trade promotion and investment attraction initiatives will create the momentum for increased connectivity.
- C. **Institutional upgrading:** Every economy's agency has its role to play in running an economy. Accountability, rule of law, political stability, control of corruption, public sector effectiveness, and regulatory quality all have an impact on a population's business culture as well as

capabilities to effectively engage GVCs. Economies' initiatives such as increased enforcement against corrupt practices, campaign finance reform, online licensing procedures, etc. can all be mandated by the center which will then impact most public sector agencies. Specific or district agencies can also take it upon themselves to improve their institution to not only stand out locally, but they can also work to enhance capacities to better incorporate into GVCs. The Doing Business indicators also offer insights on where domestic and local level agencies can make improvements to become more internationally competitive. Although agencies can independently work for improvement, an integrated strategy to upgrade all institutions will be most effective. With quality institutions often comes more transparency and consistency while the population and business can be confident that the public sector will maintain its standpoint and provide a fair trial in times of dispute.

- D. Engage international forums such as APEC, OECD, WTO, etc.:** GVCs are all about connectivity and building productive relationships across borders. Economies looking to better integrate into GVCs can utilize a number of international forums to connect with high level counterparts from across the globe. Most international forums such as APEC hold conferences and summits on a variety of pressing economic, political, and international affairs issues that bring leaders from respective fields from a variety of economies together to share their experiences and best practices, enhance networks, and build consensus. Moreover, most international forums have a cohort of researchers and policy analysts with a deep understanding of both historical and current economic phenomena as well as the connections to informed stakeholders in economies' public sectors. By actively engaging such international forums, public sector representatives can learn from their peers and build the relationships necessary to better integrate in GVCs.
- E. Gear SME activities to cooperate with larger firms and/or MNCs:** SMEs are the foundation of most economies where these smaller companies usually employ a majority of the population. While SMEs are abundant, they are typically less productive and inexperienced working internationally. To better incorporate SMEs in domestic, regional, or GVCs, business development programs can work to link SME suppliers with larger domestic firms that are already integrated into GVCs or through cooperation with MNCs. An economy could take an inventory of the various types of companies, from small to large, with respective product lines. Companies may list their specialization and development needs and then an agency or the businesses themselves could look to partner with others to grow their business reach. This will be most effective when supplier SMEs can partner with the larger, exporting companies that have higher levels of productivity, capital, and experience. The larger company can convey the specifications and standards necessary to meet customer standards, provide training as necessary, and educate on required technologies. Over time, the SME will build its expertise supplying to the larger company and may be able to find clients outside of the primary partner company. On the other hand, the large company can utilize the SME to specialize in a specific process to drive efficiency improvements and outsource labor processes. This type of partnership program links SMEs to GVCs by utilizing the larger exporting company as a conduit.

- F. Assessment of domestic competitive advantages with investments and R&D based on this assessment:** Competitiveness is the driver of GVCs and lagging competitiveness may exclude a company from engaging wider value chains. Each economy and respective populations have unique characteristics that contribute to economic growth and development. China is abundant in people while Chile has a long coast line with a range of climates. Peru is abundant in mineral resources while Thailand has fertile agriculture. These economies have many other competencies that when tallied, derive an economy's comparative advantage. As such, economies should focus on what they do best and what they are abundant in and develop upstream and downstream industries based on their comparative advantage. Each economy should deeply consider and analyse domestic capabilities, noting where they are strong, where they stand in a globalized world, and what they can do better to connect into GVCs and compete. It is much more efficient for an economy to excel in an industry they are familiar with or have experience in rather than trying to develop a new industry without the necessary background. Economies can then create a road map and use policies to support industrial development within priority sectors. By utilizing training programs, domestic or foreign investments, potential subsidies, trade promotion strategies, etc., new industries can be nurtured to grow over time. Although creating a competitive industry takes time and effort, it is an investment in an economy's future and these productive industries are what link an economy to GVCs.
- G. Development of integrated strategies:** Participation in GVCs is not the result of individual efforts from companies or public sectors. Engagement happens as a result of combining existing competitive advantages at all levels and cooperating to enhance these advantages through joint efforts. Integrated strategies refers to the participation of public sector at all levels from central to local, the private sector including both local companies and foreign investors, as well as academics or other organizations involved in the planning of goals, policy design, human capital programs, allocation of resources, and execution of relevant actions. Policies and actions must have clearly defined goals that help achieve expectations and measured by performance metrics. These strategies must identify and empower specific stakeholders with aligned actions and give responsibility for assigned duties. More often than not, in both Asia and South America, there is a lack of communication and coordination while opposing interests divide overarching domestic and regional goals. In order to better coordinate mutually beneficial interests, an independent public-private agency with a mandate to coordinate initiatives related to GVC enhancement and ensure all the players are involved in the alignment of goals, creating an action plan, assigning responsibilities, and enforcing progress could contribute to improved GVC integration.

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10. Research Interviews

10.1 Indonesia

Person	Organization	Position
Hanung Rachman	Harimba BKPM - Indonesia Investment Coordinating Board	Director for Investmet Planning
Januar Rustandie	ILO - Sustaining Competitive and Responsible Enterprises	Project lead
Pertiwi Triwidiahening	ILO - Sustaining Competitive and Responsible Enterprises	National Project Officer
Adirizal Nizar	Institut Teknologi Bandung	Adjunct Associate Professor
Dr. Ir. Leonard VH. Tampubolon	BAPPENAS (National Development Planning Agency)	Deputy Minister of Economic Affairs
Amalia Widyasanti	Adininggar BAPPENAS (National Development Planning Agency)	Director of International Trade, Investment, and Economic Cooperation
F. Kristiartono	BAPPENAS (National Development Planning Agency)	Deputy Director of International Economic Cooperation
Yose Rizal Damuri	Center for Strategic and International Studies	Head of Department of Economics
Suman Dey	Minda ASEAN Auto Center of Reform on Economics (CORE) Indonesia	Director marketing
Mohammad Faisal	ERIA	Research Director
Dr. Yasushi Ueki	ERIA	Economist
Dr. Ponciano Intal	ERIA	Economist
Dr. Dionisius Nardjoko	ERIA	Economist
Mr Sastradiredja	Suryana MOFA	FEALAC
Lian Eistiawan	Toyota	General Manager Logistic Planning Division
Agus Budhiman	Hook and Line Fisheries Association (tuna)	Secretary General
Kiki Anggraini	Hook and Line Fisheries Association (tuna)	General Manager
Ines Rahmania	Ministry of Marine Affairs and Fisheries	Director of Market Access and Promotion
Prayudi Budi Utomo	Ministry of Marine Affairs and Fisheries	Deputy Director of Surveillance and Logisitcs Systems

Erwin Dwiwana	Ministry of Marine Affairs and Fisheries	Deputy Director for Foreign Market Promotion and Collaboration
Jaya Wijaya	Ministry of Marine Affairs and Fisheries	Deputy Director for Institutions
Kukuh Kumara	Association of Indonesia Automotive Industries	Secretary General
Boedhi Samodhra	Association of Indonesia Automotive Industries	Secretary II

10.2 Japan

Person	Organization	Position
Naohiko Munakata	JALAC	Assistant Secretary General
Akira Kudo	JALAC	Executive Director, Secretary General
Mikio Kuwayama	JALAC	Adjunct Professor, Former ECLAC
Wakana Yamada	MOFA Japan	Official, Mexico, Central America and Caribbean Division
Kojiro Takeshita	JETRO	Director, Americas Division
Yusuke Nishizawa	JETRO	Deputy Director, Americas Division
Dr. Mai Fujita	IDE-JETRO	Senior Research Fellow
Dr. Momoko Kawakami	IDE-JETRO	Senior Research Fellow
Taeko Hoshino	IDE-JETRO	Senior Research Fellow
Dr. Satoshi Inomata	IDE-JETRO	Chief Senior Researcher
Dr. Shujiro Urata	Waseda University	Professor
Dr. Masahiro Kawai	University of Tokyo	Project Professor
Kotaro Horisaka	Sophia University	Professor Emeritus
Takao Kikuchi	Marine Harvest Japan Inc	Control Division HR
Daiki Maekawa	Marine Harvest Japan Inc	Manager
Tetsuji Totsune	Maple Foods Ltd	President
Yoshio Wake	Takaei Trading Co.,Ltd	Director
Akio Kondo	JATCO Ltd	Senior Expert of Corporate Planning Department

Toshiya Yabuki	Nippon Suisan Kaisha, Ltd	General Manager of Aquaculture Business Promotion Office
Kenichi Sugiyama	Nippon Suisan Kaisha, Ltd	Manager of Corporate Strategic Planning & IR Office, Public & Investor Relations Section
Dr. Akio Hosono	JICA Research Institute	Senior Research Advisor

10.3 Thailand

Person	Organization	Position
Dr. Saowaruj Rattanakhamfu	Thailand Development Research Institute	Senior Research Fellow
Sunthorn Tunmuntong	Thailand Development Research Institute	Researcher (automotive)
Visit Limlurcha	Thai Food Processors' Association	President
Pitchaporn Achawawongtip	Thai Food Processors' Association	Executive Director
Jutipat Detphol	Thai Food Processors' Association	Data Management Officer
Dr. Jakarin Srimoon	University of Thai Chamber of Commerce SEA-LAC Trade Center	Director / Professor
Keerana Reunjan	University of Thai Chamber of Commerce SEA-LAC Trade Center	Coordinator
Dr. Mia Mikic	UN ESCAP	Chief Trade Policy and Analysis Section
Dr. Anukoonwattaka	UN ESCAP	Economic Affairs Officer Trade Policy Section
Dr. Masato Abe	UN ESCAP	Economic Affairs Officer Business and Development Section
Dr. Juthatip Patrawart	Co-operative Academic Institute	Director / Professor
Dr. Sarop	Co-operative Academic Institute	Director / Professor
Dr. Pavida Pananond	Thammasat Business School	Associate Professor of International Business
Dr. Chairat Hiranyavasit	National Institute of Development Administration MBA	Director of Executive MBA Program
Kate Vasharakorn	Ministry of Foreign Affairs	Third Secretary

Prapasri Chetsonkcul	Ministry of Foreign Affairs	First Secretary
Vachiraporn Kiravanich	Ministry of Foreign Affairs	Counsellor
Wuttithon Donavanik	Ministry of Commerce Department of Trade Promotion	Senior Trade Officer
Ms. Orapin	Ministry of Commerce Department of Trade Promotion	Trade Officer
Trade Officer (name not available)	Ministry of Commerce Department of Trade Promotion	Trade Officer
Thanthach Ritthinam	Somboon Advance Technology Public Co., LTD.	Vice President of Corporate Strategy and Business Development
Rachanida Nitipathanapirak	Thailand Automotive Institute	Deputy Vice President, Academic Department, Industrial Research Division
Vichai Jirathiyut	Thailand Automotive Institute	President
Dr. Chanintr Chalisarapong	Thai Tuna Industry Association	President
Thanawat Koomsin	The Thai Automotive Industry Association	President
Supachai Vitayatanagorn	Thai Vegetable Oil Public Company Limited	Executive Vice President

10.4 Latin America (Chile; Mexico; Peru)

Person	Organization	Position
Adriana Giudice Alva	Austral Group S.A.A Austevoll Seafood Company	Gerente General
Elena Coterno Martinelli	Sociedad Nacional de Pesquería	President
Felipe Sandaval P.	Salmon Chile	President
Miguel Mandriotti	COCOMAR S.A.C	Commercial Director
Richard Inurritegui	Rodrigo; Elias & Medrano	Director
Carlo E. Posada Ugaz	Casmaara de Comercio Lima	Director Executive
Peter T. Hill	Camara de Comercia de Santiago	President
Rossana García C.	Gervasi Peru S.A.C	Comercio Exterior

Nanno Mulder	ECLAC	Chief, International Trade Unit Division of International Trade and Integration
José Elías Durán Lima	ECLAC	Chief, Regional, Integration Unit
Dr. Enrique Dessel Peters	Universidad Nacional Autónoma de México	Professor Pogrado en Economía
Carlo Aquino Rodriguez	San Marcos National University	Professor, Specialist in Asian Economies
Juan Carlos Mathews	Universidad Del Pacifico, Centro de Educación Ejecutiva	Director
Cassey Lee PHD	Yusof Ishak Institute	Senior Fellow
Javier López Gonazález	Better Policies for Better Lives	Trade Policy Analyst, Development Division, Trade and Agriculture Directorate
Ramón Padilla Pérez	Economic Commission for Latin America and The Caribbean (ECLAC)	Chief of the Economic, Development Unit
Juana Kuramoto Huaman	GRADE	Economista
Dr. Rosario Santa Gadea	Universidad Del Pacifico	Director , Center for Peru- China Studies
Leolino Rezende	Universidad Del Pacifico	Director's Assistant, Center for Peru - China Studies
Dr. Celso Garrido Noguera	Universidad Metropolitan	Head of Economics
Juan Eduarado Balboa Velasco	Subsecretaría de Industria y Comercio Unida de Contenido Nacional y Fomento de Cadenas Productivas e Inversión en el Sector Energético	Director General de Fomento de Cadenas Productivas e Inversión en el Sector Energético
Hesctor Márquez Solís	Undersecretariat of Industry and Commerce	Head of Energy Unit
Vannessa Tena López	Undersecretary for Foreign Trade APEC Office	Deputy- Director for Multilateral and Regional Negotiations
Olinka Vieyra Angulo	Undersecretary for Foreign Trade APEC Office	Mexico's Senior Official For APEC
Viviana Araneda Urbina	Ministerio de Relaciones Exteriores	Asesora, Dirección General
Angela Medina Cruzado	Prom Perú	Coordinadora de Inteligencia de Mercados Market Intelligence Coordinator Sub Dirección de Inteligencia y Prospectiva Comercial Direction of Exports Promotion

Manuel Valencia A.	Pro Chile	Advisor, International Division
Herman Beck	Pro Chile	Head of Asia Pacific and New Markets Department, International Division
Alberto Canas Salinas	Pro Chile	Head of Industries and Services Unit
Dr. Marino Alberto Reyna Cerecero	Banco de Mexico	Gerente de Análisis y Medición Del Sector Real Dirección De Medición Económica
Lizabeth Leyva Marin	Banco de Mexico	Subgerencia de Análisis del Sector Externo Subgerente
Alejandrina Salcedo Cisneros	Banco de Mexico	Directora de Medición Económica
Renato Poire A.	Perú - Ministerio de la Producción	Senior Analyst National Competitiveness Council
Iris Shimabukuro Kanashiro	Perú - Ministerio de la Producción	Jefe de la Unidad de Desarrollo y Gestión del Conocimiento
Carlos Salazar García	Perú - Ministerio de la Producción	Jefe de la Unidad de Evaluación y Selección