Introduction

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Background

Firms and industries worldwide do not operate in isolation; they are all part of a global chain of production and value adding which is becoming more and more fragmented. The OECD (2013) argues that global "value chains have become a dominant feature of the world economy". Countries at all levels of development are involved, from the poorest to the most advanced. The production of goods and services increasingly occurs wherever the necessary skills and materials are available at competitive cost and quality.

The analytical approach of value chain analysis is focused on understanding how global industries are organized by examining the structure and dynamics of different actors involved in the particular sector (Gereffi and Fernandez-Stark 2011). It undertakes a firm-level or sector analysis and focuses on the sequence of value added within an industry from conception and production to end use, to determine the value added of each component (Gereffi and Fernandez-Stark 2011). Global value chain (GVC) analysis traces the patterns of global production over time and links the industry's geographically dispersed activities and actors in developed and developing countries. In so doing, it can also provide a basis for sound corporate and industry strategizing towards improved and sustained competiveness and growth.

UNCTAD (2013) offers a number of illustrative points regarding the transformations that GVCs have brought to world trade:

1. Trade and investment are inextricably intertwined and are shaped by transnational corporations through transnational production networks.
2. Developing countries are increasingly participating in GVCs and presently account for over 40 per cent of value-added trade with their participation being led by foreign direct investments through transnational corporations.
3. There are a number of GVC development paths including "engaging", "upgrading", "leapfrogging" and "competing" via GVC with increasing participation and upgrading offering the best development outcomes for developing countries.

The concept of upgrading captures the movement from lower to higher value-added activities and services in the chain where competiveness can improve with other socio-economic multiplier effects such as employment creation, foreign direct investment, rural development, human skills development and economic growth[1] and resilience.

Objectives

In the competitiveness literature, there is a dearth of analytical material on Caribbean firms. Therefore, the main objective of this book is to contribute to filling this gap through the compilation of firm and industry case studies on the Caribbean region utilizing the research methodological approach of GVC analysis. Another objective is to broadly contribute to the development of policies that can augment the competitiveness of the firms/industries in the global economy and provide lessons for other firms to emulate. The studies are meant to provide an understanding of the firms/industries under study as they operate within the GVC. They explore the strategies used by these selected firms/industries to attain competitiveness in the context of the global market, the strategies of leading global firms, the governance of the global market, the structure and functioning of the local policy and institutional environment for business and how value is created, all for the purpose of identifying areas where upgrading at the local firm/industry level can take place and so increase the local value capture either by firm, industry or country.

Methodology

This book is the outcome of a special project of the Caribbean Centre for Competitiveness aimed at producing original value chain studies on Caribbean firms and productive sectors. It involved the training of the respective researchers and authors from across the Caribbean in the value chain methodology, followed by the use of this analytical tool to conduct the research. The training was conducted by the Duke University Center on Globalization, Governance and Competitiveness.

The analytical value chain methodology offers a holistic approach to the study of global industries by detailing input-output structures, geographical scope, governance structure and institutional context in which the industry's value chain is embedded (Gereffi 1995). The input-output structure maps all the activities necessary to bring the product or service from conception to the consumer, including research and design, inputs, production, distribution and marketing, sales, and in some cases the recycling of products after use. It traces the evolution of the industry and the trends that have shaped its organization in order to identify the various segments of the chain which add value to create the product. The geographical analysis identifies the lead firms in each segment of the value chain through firm data, specialized industry reports and interviews with industry experts to determine the country's position within the GVC. Studying industry exports and the segments in which those exports are concentrated provides the basis for analysing the possibilities for shifting geographic scope of the industry. Industry governance, defined by Gereffi (1995) as the "authority and power relationships that determine how financial, material and human resources are allocated and flow within a chain" provides an understanding of how a chain is controlled and coordinated. This is important as it facilitates entry into and development of the industry. Further, analysis of the institutional framework identifies how local, national and international conditions and policies shape the GVC and can be developed and leveraged for improved competitiveness.

GVC analysis uses a bottom-up approach in which stakeholder analysis through interview plays a critical role. Therefore, researchers collected data through interviews, site visits and the compilation of secondary published statistics. Using the methodological approach, data collection, analysis and presentation of findings are inextricably linked. As such, the studies all follow a common format which includes an analysis of the global industry, the local industry and recommendations for upgrading in the global market.

Summary of Cases

The GVC cases presented in this publication provide firm and sector/industry level analyses. They broadly cover manufacturing and service industries with an emphasis on manufacturing and agro-processing in particular. As such, the book is structured into two sections. The first section provides four case studies in the manufacturing industry: (1) agro-foods, through the experience of Baron Foods Limited (BFL) in St Lucia; (2) VincyFresh in St Vincent and the Grenadines; (3) the hot pepper sauce industry in Trinidad and Tobago; and (4) beverages, through the experience of the rum industry in Guyana. The second part provides two case studies in the services industry: (1) the Chaguaramas ship repair cluster in Trinidad and Tobago; and (2) the solar water heating industry in Barbados.

Case 1 is "A St Lucian Experience for Sustainable Participation in the Agro-Foods Global Value Chain: The Case of Baron Foods Limited". BFL accounts for a significant share of St Lucia's exports in condiments and sauces. Although the Caribbean region is not a major exporter of these commodities, comparative data indicates that the global percentage share of exports from St Lucia has increased every year from 2006 to 2010, with the exception of 2009. Productivity, innovation, flexibility and responsiveness to consumers have been critical guiding principles of BFL's value chain. BFL maximizes its value within the chain by identifying niche product opportunities in major markets and ensuring strong coordination throughout the supply chain. BFL has leveraged key opportunities to add value to its products through process, product and functional upgrading. There are three factors that stand out in BFL's history as being important for its upgrading success:

1. It has actively pursued certification and focused on producing high-quality products that meet the tastes of consumers.
2. It has ensured that its workforce is constantly trained sufficiently in order to maintain the company's quality standards.
3. BFL has made its company an attractive place to work to ensure a sustainable workforce.

For its raw materials, BFL has tapped upstream into the agro-producing sector primarily through an outgrower programme (contract farming). Among the challenges being experienced are limited availability of appropriate skills, inconsistency of quality and supply of raw materials, and weak coordination among policy and service entities. These challenges could be addressed through the provision of relevant education and training activities at various levels in the agro-processing system and the effective coordination of the sector through the strengthening of linkages among the relevant stakeholders along the value chain, in particular within the agriculture industry.

The second case is "A Structural Analysis of the Competitiveness of the Hot Pepper Sauce Industry in Trinidad and Tobago: A Global Value Chain Approach". The hot pepper–producing countries are concentrated in Asia, South and Central America, and Africa because of climatic conditions that are suitable for the growing of hot peppers and also to lower labour costs. In the Western Hemisphere, Mexico, Columbia, Costa Rica and Ecuador are the most prominent producers of pepper mash. Globally, the companies that concentrate on hot pepper sauce production vary by size and product focus. The Tabasco brand of the McIlhenny Company is considered to be the global leader in the hot pepper sauce industry. There are large food multinational corporations entering the "fiery foods" segment, where spicy ingredients are incorporated into food items, such as snack foods and condiments. For example, Heinz introduced a range of hot sauces in 2012. The hot pepper industry is a relatively small but growing segment of the overall food and beverage processing sector – its estimated value was US$15.6 million in 2012.

The Trinidad and Tobago hot pepper sauce industry comprises actors that span the full range of value chain activities, from hot pepper research and development, through hot pepper cultivation and harvesting, pepper mash and hot pepper sauce production, to sales and distribution of various products. While the industry has major players in the condiments, sauces and dressings segment of the local and CARICOM food industry, the Trinidad and Tobago hot pepper sauce industry does not have any lead firms or major players at the global level. Despite its limited global presence, the local industry is vibrant, ranging from micro-processors to large food processors. These processors have leveraged Trinidad and Tobago's indigenous pepper varieties, such as the Trinidad Moruga Scorpion, to create a range of product offerings that meet the palette of the customer who enjoys spicy and fiery foods. Additionally, the processors have experimented with different flavourings such as rum, mango and tamarind to produce specialty pepper sauces. Many of the processors also have an online presence, using their own websites, specialty hot sauce websites and social media to market their product offerings globally.

The global spicy foods markets are also evolving by incorporating hot sauces into a variety of traditional products, as seen with Heinz's introduction of chilli sauces, and the collaboration between Unilever and Frank's Red Hot in the production of a spicy form of mayonnaise. At least two major challenges to growth were identified in the value chain analysis of the Trinidad and Tobago hot pepper sauce industry:

1. There is insufficient local supply of hot peppers. To alleviate the shortages, a revitalization of the agricultural sector is needed, including expansion of existing agricultural incentives and commercial farming programmes to include hot peppers.
2. In terms of local industry structure, there is little coordination between upstream and downstream segments of the value chain. The establishment of cooperatives for hot pepper farmers and the use of contractual arrangements for supplying hot peppers to the pepper mash and hot pepper sauce processors could improve the reliability of supply, thereby allowing the industry actors to engage in upgrading activities.

The third case is "The Rum Industry of Guyana in the Global Value Chain". The Caribbean and Latin America are regarded as the epicentre of global rum production. There is a pre-eminence of multinational corporations, mostly based in developed countries but with operations and partnerships that span developing countries, particularly in the premium end of the market. For instance, British multinational alcoholic beverage company Diageo, headquartered in London, operates twenty-seven production facilities, including distillation and bottling facilities in Scotland, Italy, France, Spain, Germany, England, Puerto Rico and Mexico, among others. The companies that are leading suppliers of rum globally have been successful by implementing a number of strategies, including branding, vertically integrating operations along the value chain, outsourcing, investing in multiple strategic markets and differentiating production techniques.

Guyana operates along the full spectrum of the global rum value chain from sugar production to marketing and distribution. It mainly exports bulk and branded rum to Europe and the United States. Guyana's success, however, has been in the premium niche market with aged dark rums produced and marketed by Demerara Distillers Limited under its flagship brand, El Dorado. The success of the company and of the rum-producing industry is linked to business specific investments as well as general improvements in the macroeconomic and business environment in Guyana. Trade policy plays a crucial role in investment, providing Guyana with preferential access to markets in the European

Union and the United States through the Lomé I agreement and the Caribbean Basin Economic Recovery Act. As it relates to investments, the Demerara Distillers Limited's business model, similar to that of its global competitors, strengthens its capacity to control most critical elements of the value chain by

- investing in professional skills and productive capacity;
- establishing company-owned commercial banks to ensure access to finance;
- becoming energy self-sufficient and improving marketing by establishing subsidiary operations in key export markets; and
- improving global visibility by participating in international wine and spirits competitions.

The key challenges presently confronting the industry, however, are the use of protectionist policies by governments in importing markets (such as subsidies in the United States which require policy advocacy at the governmental level for resolution), the state of the domestic sugar industry and the unreliable shipping infrastructure of the country. Resolving the latter of the two challenges requires improving the productive capacity of the sugar industry and the creation of a deep-water harbour.

The fourth case is "VincyFresh Limited: A Caribbean Case Study on Export Competitiveness and Global Value Chain Analysis". VincyFresh is the key lead firm in the fruit and vegetable processing industry in St Vincent and the Grenadines. Globally, the market is dominated by mass merchants and brand manufacturers. Mass merchants are large department or discount stores such as Walmart, Costco and Target, each carrying their own private label. Companies that have their own brand name as well as manufacturers such as Del Monte, Heinz and others are referred to as brand manufacturers. These lead firms generally acquire raw materials from contract growers who grow specific varieties of plants according to the processor requirements. Supply contracts generally run for one to ten years. Long-term contracts are generally negotiated by growers who would have to plant to fulfil the need of certain manufacturers but not see returns for several years. When growers and manufacturers enter into long-term contracts, price is often negotiated on an annual basis.

VincyFresh is involved in only two stages of the five-stage GVC of the fruit and vegetable industry – processing and packaging, and storage. The business model was chosen based on the demand from the diaspora for local fruit juices and vegetables. Growth in this sector is fuelled by a strong global demand for unprocessed agricultural products from the health and wellness sector. The main suppliers for St Vincent and the Grenadines' fruit and vegetable processing industry are farmers and vendors. Farmers serve the supply chain by providing produce to supermarkets, vendors, agro-processors, traders, institutions and the general population. While the supply of produce is one of the challenges facing the fruit and vegetable processing industry in the country, there are also opportunities, like the strong demand that exists for niche agricultural products like dasheen (also called taro) and expansion into other regional markets through the CARICOM Single Market and Economy. In response to the challenges, the government has partnered with the Food and Agriculture Organization and the Taiwan International Cooperation and Development Fund to establish a framework for development assistance. Productive capacity is another constraining factor for the sector: the minimum wage for unskilled industrial workers in St Vincent and the Grenadines is currently higher than regional competitor countries. Infrastructure and services – sea transportation to neighbouring islands other than Trinidad and Tobago or Barbados – are unreliable, which increases the challenge of maximizing the regional market. The country's business environment is another hindrance to development, with the World Bank ranking it 129 out of 185 global economies for the ease of getting credit. Growth in this segment of the value chain required revitalization of the upstream aspect, agricultural production and strengthening downstream in the sea transportation segment of the chain.

The fifth case is "The Chaguaramas Ship Repair Cluster: Sustaining Competitiveness and Lessons for Upgrading along the Maritime Value Chain". The major focus of ship repair activity is located in Chaguaramas, a harbour located in the north-western peninsula of Trinidad. Globally the ship repair cluster is dominated by countries in Europe, which collectively control approximately 35 per cent of world sales. Other major players in the global industry include China, India, Japan, Dubai and Singapore. Although Trinidad and Tobago is a very small player in the global ship repair industry, capturing less than 1 per cent of global sales, the potential for increasing its share of the regional ship repair value chain is promising, owing to

- proximity to the Americas and the Panama Canal, which allows Trinidad and Tobago to benefit from north-south and south-south trade;
- a highly developed hydrocarbon industry, which creates jobs for the ship repair cluster;
- favourable taxation rates;

- bilateral trade agreements with several Central and South American countries; and
- a cadre of specialized labour in its maritime industry.

The most important drivers of growth for Trinidad and Tobago have been its close proximity to the Americas and a growing downstream energy sector.

Trinidad and Tobago currently has four large companies and numerous small service companies operating in ship repair GVC, although its position is relatively insignificant when compared to large players such as Singapore, South Korea, China, Japan and countries in Europe. The ship repair industry contributes an estimated US$17 million (approximately 1 per cent) annually to the country's gross domestic product and creates more than 350 direct jobs (0.05 per cent of the labour force). Two main challenges impeding Trinidad and Tobago's ship repair industry growth are availability and reliability of skilled labour supply, and product upgrading. The labour challenge can be addressed by increasing the amount of maritime-related technical training programmes at Trinidad and Tobago's tertiary education institutions. The product upgrading challenge can be addressed through strategic partnerships with international yards which can facilitate the transfer of operational processes, technologies and efficiencies. These strategies may allow the Trinidad and Tobago ship repair cluster to upgrade into additional segments of the maritime GVC.

The sixth case is "The Future of Solar Water Heaters in Barbados: Market Expansion or Product Innovation?" Globally, each stage of the value chain is dominated by a few major players. The largest firms are starting to integrate vertically to cover all stages of manufacturing. In 2007, China's exports of solar water heaters grew by 28 per cent to US$65 million. In 2011, China led the world in solar thermal glazed installations, accounting for an estimated 58 per cent of global capacity, with Europe a distant second. While Chinese firms export to approximately fifty countries and territories in Europe, the United States and Southeast Asia, an important share of exports go to developing countries in Africa and Central and South America. The ability of Chinese firms to produce solar water heaters and lead the industry is partly based on government subsidies. Europe remains a key player in the industry in terms of both demand and supply.

The solar water heating sector in Barbados emerged as an alternative energy solution for the production of hot water for local domestic and commercial use. All firms in the sector engage all elements of its GVC – materials, components, manufacture, sales, installation and after-sales service. Value improvements in the solar water heating sector in Barbados continue to be driven by improvements in the application of technology, product research to improve the functionality, longevity and appearance of successive units, and of course market share – although at a slow pace.

For many years, sector growth was mostly driven by government support in the form of policy incentives aimed at boosting domestic and regional growth. In addition, the industry collectively sought to improve the value of its product through the use of new or improved materials and components, competitively enhancing finished quality and performance, sales and distribution strategies, and after-sales service. The sector has reached maturity in terms of its current business cycle. It must therefore pursue several vertical upgrading strategies to extract other sources of revenue and secure a global standard of competitiveness. These include intensifying its efforts to source funds for research and development, securing investment in upgraded technology, and pursuing strategic partnerships through forward linkages with value-added research and development firms or with companies offering contemporary renewable energy solutions that can maximize the possibilities for competing in the market.

Summary of Key Findings and Policy Implications

The overarching finding emanating from these studies is that sustained company and industry growth depends on finding ways to increase value-creating propositions. With respect to all four agro-processing cases, the weaknesses in the local raw material supply link of the chain stand out as major constraints. Since these economies are traditionally producers and exporters of primary products such as sugar in the case of Guyana, fresh peppers in Trinidad and Tobago, and fresh fruit and vegetables in St Vincent, the processing stage is an attempt at increasing the value retention to the respective countries. The challenge is to sustainably develop the primary production element of the value chain such that a reliable and cost efficient source of input can be fed into processing so that this second stage too can continually expand.

All the studies revealed that value-added processing continues to be dominated by developed countries which import raw agricultural products (largely from developing countries) at very low prices, then process and re-export at significantly higher values. Strengthening the local supply of raw materials provides a more competitive positioning of these industries globally. The BFL outgrower contractual model with farmers appears to be an efficient one which can be duplicated by the pepper sauce industry in Trinidad and Tobago and VincyFresh in St Vincent. This can result in a win-win situation wherein farmers engage in higher productivity-driven agricultural practices (thus increasing their respective incomes), while industry gets the supply it needs to access higher-value markets. It must be noted that even though the BFL contract model with farmers has been largely successful, it still suffers from inconsistency in the quality and supply of raw materials. The state could therefore play a significant role in strengthening its technical and financial support to farmers.

The dominance of developed country firms is also evident in the cases that are not agro-based – solar energy and ship repair. In the case of the former, the global industry is monopolized by European and Chinese manufacturers. The local industry evolved largely in response to government policy through an attractive incentive scheme to household users of solar-generated heaters. Given the small size of the Barbadian market, this industry has now exhausted the benefits to be derived from this scheme and must be creative in its growth plan or face stagnation.

The ship repair industry in Trinidad and Tobago emerged in response to emergency ship repair needs, largely because of the country's prime shipping route location. Though long in existence, it is yet to be recognized in the global industry as a ship repair hub; and for local industries to grow along the value chain, rationalization of purpose and potential is needed.

In the case of solar energy, the recommendation emerging is that the industry needs to engage in research and development towards new product development, and with respect to ship repair, a clearly defined strategy, investment in new technology, marketing and human resource development is needed. A cluster approach that brings together and harnesses the capabilities of all stakeholders would be useful in developing this industry.

Another important finding is the opportunity for niche positioning so that premium prices can be attained. This is highlighted in both the pepper sauce and rum cases. In the case of pepper sauce, the global lead suppliers are increasingly moving into specialty flavoured pepper sauces, and in the case of rum, although Guyana is largely an exporter of bulk rum, the evidence suggests that there are significantly higher margins in the production of premium high-quality rums. Given the availability of a variety of pepper flavours and potential fruit additives available in Trinidad and Tobago, Guyana and indeed the Caribbean region, there are opportunities to differentiate on premium pepper and rum flavours – allowing both industries to potentially expand along the value chain, capturing greater value.

This implies that focused research into optimizing the special and differentiated qualities of tropical peppers, molasses, fruits and vegetables can further enhance prospects for adding value along the production chain. Herein lies a role for research institutions such as the University of the West Indies, the Caribbean Industrial Research Institute and the Caribbean Agricultural Research and Development Institute in support of such initiatives. An important role for policy also emerges, as the state, through its incentive programmes, can create product specific inducements to encourage the emerging structure described above.

The case of Guyana rum reveals many interesting peculiarities of the industry which are important for industry expansion. Guyana and other Caribbean nations largely export bulk rum into Europe where global lead firms blend, age and bottle. In addition, marketing is critical to upscale product branding, so companies have to be prepared to allocate as much as 19 per cent of sales to this effort in order to win and secure markets. The weight-to-value ratio also brings great value to bottling close to markets. In essence, this implies that the rum business favours those with deep pockets, although it provides tremendous opportunity for deriving surplus value. In the case of Guyana, there are challenges with raw material input that must be resolved for industry expansion based on local molasses input to be successful.

The rum industry might explore collaboration among the key players. In particular, firms and the state should strategize for greater expansion, which could involve the acquisition of an ageing and bottling plant by private producers of bulk rum in the consumer market. To address the shipping challenges, the state must be involved in the provision of a deep-water harbour to accommodate larger ships. Such an investment cannot be justified simply on the needs of the rum industry, so the expanded port facility must be rationalized on the basis of the expansion of other industries that could benefit from it.

The need for human resource training and development stands out as a major inhibitor to growth in several of the cases, particularly Baron, solar power and ship repair. In all instances there was a shortage of training opportunities designed for the specific skilled human resource needs of the industry. Since education in all these countries is largely state driven, a more market needs driven approach to training curriculum development is indicated.

In other instances, as in the case of solar power, it was found that the industry needs to engage in research and development to transcend the current mature stage of the industry. This would require moving to a higher level of value creation to sustain its competitiveness.

Meeting international standards as a prerequisite to competing in export markets emerges as another vital find, requiring investment in standards certification by firms and industry. There is also an important role for national and regional standards institutions – such as the Bureau of Standards in Trinidad and Tobago and its counterpart in other Caribbean countries – to play a greater role in supporting industries in this regard.

Through value chain analysis local firms and industries can gain a strategic understanding of the global markets in which they operate and the strategies which lead firms use to gain and maintain competitive advantage. They can further gain a comprehensive understanding of the value-adding activities which occur along the chain so that decisions with respect to better positioning can be made.

From a policy position, analyses such as these provide market-driven information and state-of-the-industry analyses which can help policymakers to develop targeted initiatives that can support the growth and development of sectors targeted for expansion. In the current circumstances where countries of the Caribbean region are grappling with negative growth and the need for economic diversification, understanding the value chain within which existing industries operate can allow for the efficient alignment of policy to the specific needs of growth strategies which can be distilled from global industry study. In conclusion, what emerges are specific areas which respective firms, industries and policymakers must address in order to capitalize on opportunities for improved competiveness along the value chain continuum and which contributes to the overall growth and sustainable competitiveness of firms, industries and countries.

Note

1. OECD (2013) notes that "the income from trade flows within GVCs has doubled between 1995 and 2009: for China it has increased 6-fold, India 5-fold and Brazil 3-fold".

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