Barbados in the Rum Global Value Chain

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Acronyms

ABV	Alcohol by Volume
ACR Marque	Authentic Caribbean Rum Marque
ADOPRON	Dominican Association of Rum Producers
BAMC	Barbados Agriculture Management Corporation
BCIC	Barbados Cane Industry Corporation
BSIL	Barbados Sugar Industries Limited
BSTA	Barbados Society of Technologists in Agriculture
CARICOM	Caribbean Community and Common Market
CBERA	Caribbean Basin Economic Recovery Act
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GI	Geographic Indication
GVC	Global Value Chain
GVCC	Duke University Global Value Chain Center
ILG	Liquor Industry of Guatemala (*Industrias Licoreras de Guatemala*)
ISO	International Organization for Standardization
ISP	Inter-Sugar Partnership
M&A	Mergers and acquisitions
MNC	Multinational Corporation
ONAPI	National Office of Industrial Property of Dominican Republic
PDO	Protected Denomination of Origin
PGI	Protected Geographic Indication
TRIPS	Trade-Related Aspects of International Property Rights
TSG	Traditional Specialty Guarantees
WIPO	World Intellectual Property Organization
WIRSPA	West Indies Rum and Spirits Producers' Association Inc.
WTO	World Trade Organization

Executive Summary

This report uses the Duke Global Value Chain Center (GVCC) framework to examine the role of Barbados in the rum global value chain (GVC) and identify opportunities for the country to upgrade. Rum is an important product category in the growing distilled spirits sector. Rum is a multimillion-dollar industry that depends on key inputs from sugarcane that are then fermented, distilled, bottled and branded for consumption across the globe. Demand is increasing, particularly for premium rum products.

Taking advantage of this trend, Barbados is seeking to increase its participation in the rum GVC. Rum has a long tradition in the country, which is home to the oldest rum distillery in the world. Rum is the primary agro-industrial export in the nation and fourth largest non-service foreign exchange generator. In 2015, Barbados rum exports totaled US$39 million, representing 3% of global trade. However, a declining sugar industry and entry of new rum producing countries threaten Barbados' competitiveness in the industry.

The Rum Global Value Chain

Rum, an alcoholic beverage made from fermented and distilled molasses (a sugar byproduct), is part of the growing spirits industry with rum sales exceeding US$2.6 billion in 2015 and exports passing US$1.4 billion. Rum as a product category is diverse, with the final product dependent on the production method and inputs utilized. Global exports of rum increased 37.5% between 2006 and 2015, peaking in 2013 with over US$1.63 billion in exports. Major suppliers of global rum are highly concentrated in the Caribbean and Latin America, while consumption is concentrated in North America and Europe, led by Germany, Spain, and the United States. Key global trends that influence the organization of the rum GVC include:

- **The rise of premiumization in the spirits industry due to evolving consumer demands.** Premiumization—or preference for luxury products—is increasingly occurring in rum. Premiumization is marked by high barriers to entry for producers, the importance of provenance or location in the production process, and the historical relationship or heritage the product has to these regions.

- **Changes in European trade policies for sugar imports challenge the profitability of sugarcane production in Caribbean nations, indirectly affecting the rum sector.** Since 1975, select developing nations across the globe had preferential access to European markets for raw sugarcane. However, following a World Trade Organization (WTO) dispute and subsequent policy reforms, European Union (EU) suppliers experienced a 36% decline in sugarcane prices. At the same time, other producing nations, especially Brazil, India, and Thailand, are expanding exports to the EU. New competition from highly subsidized rum producing nations, coupled with declining preferential access to markets are leading to the collapse of the sugarcane industry in the Caribbean region.

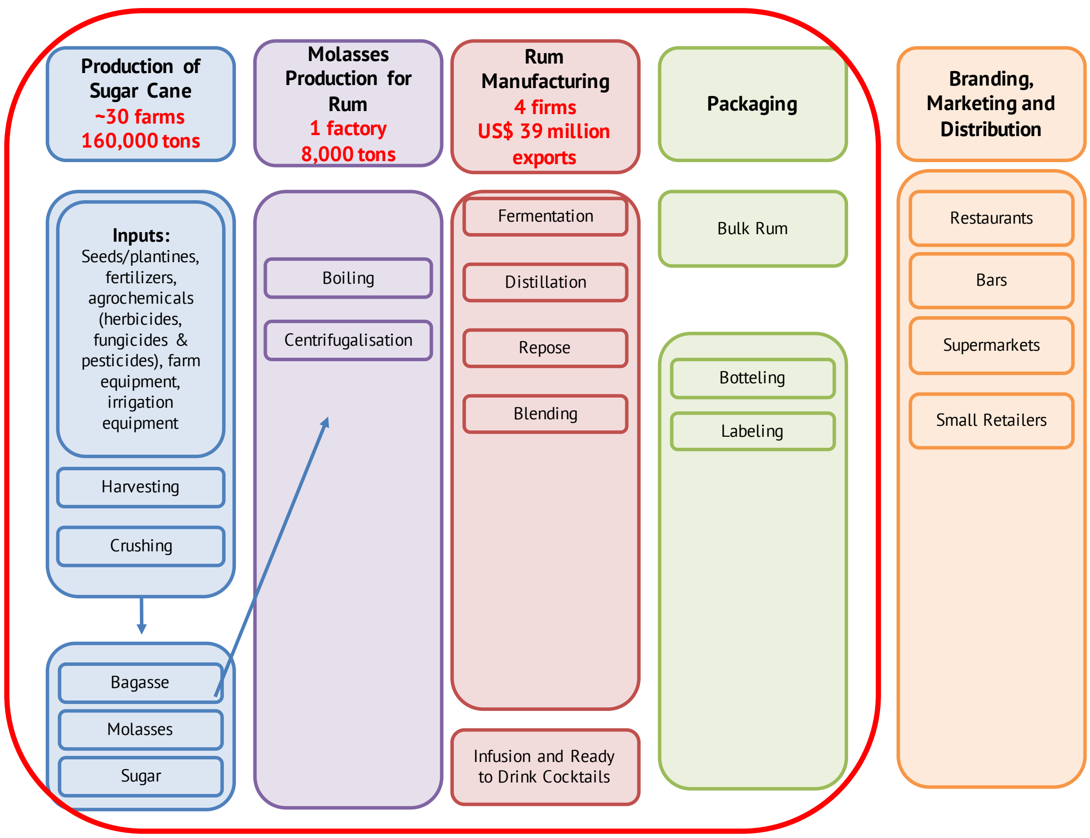
- **Sugar use is diversifying into many products besides food and beverage manufacturing leading to the planting of new varieties that are less suited for rum manufacturing.** In addition to traditional food and beverage use, sugar derivatives now are employed in multiple industries, including bioelectricity, bioplastics, and biofuels. For biofuels—where molasses is most prominent—users can blend sugarcane ethanol with gasoline or use it alone to meet energy needs.

Barbados in the Rum Global Value Chain

Rum represents an important agriculture product for Barbados, both economically and socially. The island has a long history in the industry, and sugarcane—the key input in rum—is seen as a necessary crop to maintain the soil quality on the island and prevent erosion. To maintain the rum industry, however, Barbados must revitalize the domestic sugarcane sector and invest in the development of a national brand to facilitate growth in premium rums.

The country's current participation is illustrated in Figure E-1. Approximately 30 sugarcane farms and one sugar processing plant actively harvest roughly 160,000 tons of sugarcane and produce 8,000 tons of molasses, which primarily serves the rum industry. Four rum producers are active in Barbados. In 2015, rum exports from these four firms totaled US$39 million. However, they are increasingly sourcing inputs from other Caribbean nations as the domestic sugar industry cannot meet the demands of rum producers. The emerging sugar crisis in the Caribbean threatens future molasses supplies from the region and the competiveness of the rum industry in Barbados.

Figure E- 1. Barbados Participation in the Rum GVC



Source: Authors.

Barbados' most pronounced strengths in rum are connected to the importance of sugarcane to the island as well as a long history of rum production. It also benefits from the existence of several globally recognized rum brands. The most prominent advantages include:

1. **Historical legacy and association with rum**. Barbados has a strong yet not fully captured marketing link to rum as the birthplace of rum and home to the oldest distillery in the world through Mount Gay. This association has not been fully exploited. It is particularly useful given recent shifts towards place-based, authentic consumption in spirits. As the birthplace of rum, Barbados has several advantages in creating a rum brand that matches consumer demands.

2. **Established global presence of national brands.** Many rum brands from Barbados are recognized globally. Mount Gay, for instance, is regarded globally as a major rum brand. Similarly, Malibu rum is well known for its coconut flavoring. An existing connection to global consumers via internationally recognized brands represents a key advantage for the nation as it seeks to bolster its competitiveness.

3. **Barbados is well situated for sugarcane production.** Barbados has the climate needed to produce sugarcane as well as a long history of production. Sugarcane is an important economic, environmental and social crop for Barbados. It is also the key input for rum manufacturing. Rum emerged as a direct result of the molasses byproduct made during sugar manufacturing on the island during colonial times. Barbados is geographically situated in an area that is conducive to large scale sugarcane growth.

To capitalize on these advantages, Barbados needs to address several constraints, both in the production of sugarcane and in the development of a national brand that consumers recognize and value. Policy interventions are needed to address the following challenges:

1. **The decline of bulk sugar production in the country threatens molasses supply.** With the erosion of preferential trade access and the lowering cost of sugar on global markets, domestic sugar processing is declining. Sugarcane production has declined steadily as global prices drop and international trade has become increasingly liberalized. Even with the government taking control of failing sugarcane farms, the nation continues to struggle to revitalize the industry.

2. **Actors in the rum GVC are disconnected.** In Barbados, sugarcane producers are not connected to the rum industry. The only point of contact occurs via the sugar processing plant in Port Vale that serves as the sole buyer of domestic sugarcane and a small supplier of molasses to the island. Attempts to connect actors is limited to small brands and producers with vertically integrated operations.

3. **No clear strategy for growth.** Strategies are not unified—rum producers' strategies involve branding around rum as a Barbados product without the ability to source inputs from the nation. Simultaneously, sugarcane producers seek to diversify production to higher value varieties. This includes a shift from bulk production to processing for small volume specialty retail.

4. **Lack of competitiveness of the sugarcane industry due to limited modern agriculture practices, low investments and declining workforce.** Investments in sugarcane are decreasing as global prices drop. As a result, the use of modern equipment and high-quality fertilizers is limited.

Barbados' upgrading path in the cruise tourism GVC should serve to address these challenges. The most immediate upgrading trajectories that will accomplish these aims include:

Short Term Process Upgrading (Sugarcane and Molasses): Barbados should focus on improving its production of sugarcane and molasses through the creation of competitive processing capabilities and the planting of varieties of sugarcane that give the sucrose content needed for the rum industry. Current restructuring of the sugarcane industry is necessary given shifting trade dynamics and lowering revenue for bulk sugar exports. However, any revision in sugarcane policy must account for the importance of molasses in rum manufacturing and ensure a sufficient and stable supply for the high value rum industry. Rather than focusing on sugarcane harvesting and sugar packaging for niche markets, sugarcane should be seen as a byproduct for rum and produced as a way of capturing more value from the rum GVC.

Medium Term Product Upgrading (Premiumization): Barbados does not have rum supplies to compete on scale with large-scale rum suppliers, such as Bacardi. Instead of competition based on scale, the nation should continue to focus on improving rum quality to allow for higher degrees of premiumization. As consumers in developing and developed markets shift preferences to premium rum, Barbados has a strategic opportunity to increase participation by investing in the development and promotion of high-end rums, both through developing a national brand to highlight the historic relevance of rum and the continued development of new rum drinks, such as flavor infused rum. Barbados will have a greater success in premium quality rum markets versus large volume low cost rum production.

Medium Term Function Upgrading (Branding): The establishment of a national identity for rum as well as a national brand will help to differentiate Barbados's rum from others. While Barbados should continue to work with other Caribbean nations to develop and promote a regional label to protect Caribbean rum, further branding of Barbados's product is also crucial. Rum branding should focus on the strengths of the industry in Barbados, particularly around the historical legacy of production on the island. Furthermore, historic stories around Barbados rum, such as its linkage to sailing and prominence in the George Washington administration, are other aspects to build upon in order to capture more value.

Medium-Long Term Chain Upgrading (Deepening Linkages with Tourism): As tourism continues to be a major source of revenue, forging stronger linkages between industries will allow rum producers to increase sales to foreign visitors and build brand awareness. Building on established activities, such as tours at multiple distilleries, the rum industry should continue to develop itself as a tourist destination, partnering with both cruise tourists and foreign visitors to increase visitations to the country. This upgrading requires the development of deeper experiences with the construction of hotels and restaurants at distilleries to provide a longer, more complete experience for tourists.

1. Introduction

Rum, an alcoholic beverage made from fermented and distilled molasses (a sugar byproduct), is part of the growing spirits industry with rum sales exceeding US$2.6 billion in 2015 and exports passing US$1.4 billion (Statista, 2017; UNComtrade, 2017b). The Caribbean is the main production region for rum. Drawing on the availability of sugarcane byproducts and as well as its history with the spirit, the Caribbean is regarded as the birthplace of rum (Pounder, 2010). Regional production in the Caribbean dates back centuries, emerging from sugar production for colonial powers before becoming a major historical industry for many nations. Across the region, rum remains one of the largest non-services export (BPSTT, 2014). However, the sugar industry is collapsing in the Caribbean due to dropping global prices and the erosion of preferential access to European Union (EU) markets since 2006. Sugar production in the region historically relayed on preferential access to these markets without improving competitiveness. Currently, the future of the Caribbean rum sector is uncertain if they cannot continue to source the main input (molasses) from the region. Countries in the Caribbean are trying to revamp the sugar sector, however low economies of scale, dated infrastructure and lack of modern agricultural technologies are making the transition difficult. Additionally, the global sugar industry is highly subsidized further complicating the situation as Caribbean governments struggle to match subsidized competition with an indebted economy.

Barbados plays a major role in the rum industry and is regarded as the birthplace of rum. Situated in the eastern Caribbean, the small island (169 sq. mi) was a major producer of sugarcane during colonial times. With the large supply of available molasses, Barbados entered rum production and has since grown as a major rum producer in the region and globally. Mount Gay, which is headquartered on the island, is considered the oldest distillery in the world that has maintained operations. Simultaneously, as global demand for spirits grows, new global players are entering into rum exports, which presents new challenges for the nation. Nowadays, the country imports molasses for rum manufacturing, since there is not enough production in the country to meet demand. However, the primary trade partner for molasses, Guyana, is also struggling with a sugar industry that is ready to collapse. Barbados faces typical constraints of small islands where infrastructure is weak, and transportation costs are high, making imports costly. Some rum companies in the country are attempting to overcome the sugar industry problems by producing rum directly from sugarcane juice, leapfrogging the capital-intensive sugar manufacturing stage of the value chain that is needed to obtain molasses.

Drawing on the analysis of other nations active in rum as well as those in similar industries like wine, Barbados should build a brand that capitalizes on the long history of rum production in the nation through a marketing campaign. They can do this through coordinated branding efforts, both internationally and domestically, that involves all domestic rum producers. Barbados should also forge deeper linkages with the tourism sector to offer more experiences around rum production on the island. By working with other industries and focusing on the creation of a national brand, Barbados will be able to increase its competitiveness in the industry. However, deeper collaboration among all actors in the industry is required. Currently, there is little communication or cooperation between sugarcane producers, processors and rum manufacturers. Once a national brand is established, and industry connections formed, Barbados will be better positioned to enter into luxury markets where authenticity and place of production are valued.

This paper uses the Duke Global Value Chain Center (GVCC) framework to understand how the rum global value chain (GVC) is evolving, assess Barbados' current position in the GVC, and identify opportunities to upgrade with the goal of promoting economic development. It first provides an overview of the rum value chain to present a clear understanding of the scope of the industry, how markets are structured, and how changing distribution of demand and supply can alter structural dynamics. It then analyzes Barbados' current position in the chain, examining both the advantages and the challenges for domestic industry development. After providing comparative case studies on Guatemala and the Dominican Republic's experiences, it concludes by outlining potential upgrading strategies.

2. The Rum Global Value Chain

2.1. Global Rum Industry

The global spirits industry is large and growing, with sales rising to US$46 billion and exports eclipsing US$18 billion (Statista, 2017).[1] Rum represents an important product category within the spirits industry with total sales exceeding US$2.6 billion and exports passing US$1 billion in 2015 (Statista, 2017; UNComtrade, 2017b). Growth in spirits, including rum, is attributed to many factors, including rising incomes in the Global South and the evolving consumption patterns of millennials in the Global North, particularly the United States (US) (Beaudette, 2015). Rum is a diverse product with the final output dependent on the production method and inputs utilized. Two main types of rum exist on the market: light rum and dark rum. Light rum, also known as white rum, is filtered and bottled after distillation, generally with little or no aging, which gives it its transparent coloring and little odor or flavor. Light rums are frequently used in mixed drinks and cocktails. In contrast, dark rums are aged for varying lengths of time in charred barrels to give them a darker color and richer flavors. These rums are frequently consumed without added ingredients. Increasingly, new varieties such as flavored and infused rums are growing in popularity (Euromonitor, 2015). Rum is evolving in status, from a spirit found in vacation cocktails to one that is increasingly praised for its diverse flavors and uses. The largest consumer markets for rum remain in high income nations, though consumption is growing in emerging economies.

Three major trends have shaped the global rum industry in recent years: (1) The rise of premiumization in the spirits industry due to evolving consumer demands; (2) Changes in European trade policies for sugar imports challenge the profitability of sugarcane production in Caribbean nations, indirectly affecting the rum sector; and (3) Sugar use is diversifying into many products besides food and beverage manufacturing leading to the planting of new varieties that are less suited for rum. Each is discussed below.

(1) **The rise of premiumization in the spirits industry due to evolving consumer demands.** Premiumization or preference for luxury products occurs along several dimensions in the spirits industry, including rum. Premiumization is marked by high barriers to entry for producers, the importance of provenance or location in the production process, and the historical relationship or heritage the product has to these regions (Euromonitor, 2014b). These barriers are even higher in ultra-premium spirits, which are a

[1] Spirits is a category of alcoholic beverage noted for the distillation process used in production and an alcohol by volume(ABV) value between 20% and 90%. It encompasses many alcoholic beverages with the exception of beer, wine, mead and cider. Important varieties include whiskey, rum, vodka, tequila and gin.

special category of premium spirits that denotes even higher quality and rarity on international markets. Developing markets are driving surges in premium brands for certain types of spirits, such as Patron Tequila or Grey Goose Vodka. As incomes rise, consumers are seeking out high quality brands and luxury spirits. Among consumers in developed markets, a primary focus is on authenticity in their consumption choices (Euromonitor, 2015). In mature markets, premiumization features an increased awareness and demand for small batch, artisanal, and place-based spirits.

Beyond these considerations, light spirits, such as white rum, are expanding to attract consumers through new innovations in flavors. Building on the success of Malibu's coconut flavored rum, many producers are now seeking to develop new varieties, following the successful trends in diversification occurring in vodka. Currently, two-thirds of the U.S. based Cruzan's rum product line is flavored and Malibu now has 15 variations in market. However, there is risk with this strategy of flavor fatigue (Euromonitor, 2014b). To minimize this hazard, many major brands, such as Bacardi, are concurrently developing campaigns and products that focus on the historic legacies of rum production (see Box 1).

Box 1. The Rise of Bacardi Premium Rums

Bacardi, a leader in rum sales, is shifting marketing and product lines to reflect changing notions of premium rum among consumers. In recent years, innovation and new product development drove demand and sales for the company. However, Bacardi is now seeking to capitalize on other premiumization trends by marketing a new, high-value rum and tightly linking the special batch to the historical legacy of the company.

Bacardi has a long history in rum production; it began production in Cuba in 1862 but moved outside the nation during the Cuban revolution. Capitalizing on consumer's preference for place-based drinks, Bacardi is promoting its Cuban heritage in the company's "Original Bacardi," a spiced rum. Original Bacardi, launched in 2011, comes in an oak crate box bearing both the name Bacardi name and the birthplace of the rum: Santiago de Cuba. The bottle also is label-free to invoke the historical bottling practices of rum. Bacardi no longer produces the rum in Cuba; however, through branding, it seeks to evoke imagery of its history to attract buyers.

Beyond the rich history of the company, Bacardi is also moving into the super-premium spirits category with another product, Bacardi Gran Reserva Maestro de Ron, a super-premium white rum made for consumption as a sipping liquor, without needing a mixer. The blend relies on old production techniques designed to capitalize on the legacy of Bacardi and the growing trend of high-value spirits among consumers.

Sources: Nesbit (2014); Murray (2014)

(2) **Changes in European trade policies for sugar imports challenge the profitability of sugarcane production in Caribbean nations, indirectly affecting the rum sector.** Since 1975, select developing nations across the globe have had preferential access to European markets for raw sugarcane. Most significant, the Sugar Protocol under the Cotonou Agreement with African, Caribbean and Pacific countries which included a guaranteed the European Union (EU) support price for set quantities of sugar imports

(TCD, 2010).[2] These prices were often three to four times higher than global sugarcane prices (Goodison, 2015). European nations are a global leader in refined sugar product exports but depend on special arrangements with sugarcane producers to maintain input supplies for refining activities. However, following a World Trade Organization (WTO) dispute of the EU policy in 2006, and subsequent policy reforms resulting from the WTO ruling, EU-based suppliers experienced a 36% decline in sugarcane prices (Goodison, 2015). This also reduced the guarantee prices for nations that exported to the EU under the Cotonou Agreement (TCD, 2010). The final outcome was that the EU—the largest importer of Caribbean sugarcane—must nullify its quota regime by the end of September 2017, a structure that allowed Caribbean countries to sell sugar at two or three times the world market price. Consequently, the EU market is no longer as profitable for Caribbean sugar producers as it once was, and trade is declining. At the same time, other producing nations, especially Brazil, India, and Thailand, are expanding exports to the EU. The new competition that it is highly subsidized by their governments (see Box 2), coupled with declining preferential access to markets, is leading to the collapse of the sugarcane industry in the Caribbean region. This is further complicated by Caribbean Community and Common Market (CARICOM) trade rules which place import tariffs on sugar as high as 40%, making sourcing outside the Caribbean region difficult (Field Research, 2017).

Box 2. Sugar Subsidies in Producing Nations

Subsidies have been used to support the sugarcane industry in multiple nations. The United States (US) sets policies to avoid oversupply and maintain favorable prices. Brazil's government spends more than US$2.5 billion per year in programs to support the industry. These efforts include interest rate subsidies, rescheduling and forgiveness of many agricultural debts, and rescheduling tax debts at very favorable terms. It also sets legislation that mandates ethanol blending for gasoline to help bolster local demand. Thailand spends US$1.3 billion per year in direct subsidies as well as guaranteed pricing to farmers to increase sugarcane production. Finally, import tariffs are used by many nations to help protect the industry; for example, India has a 60% tariff on sugarcane imports and Mexico has a 126% import tariff.

Sources: LMC International (2008); Chatenay (2013); Meroit (2015); ASA (2017)

(3) Sugar use is diversifying into many products besides food and beverage manufacturing leading to the planting of new varieties that are less suited for rum manufacturing. In addition to traditional food and beverage use, sugar derivatives now are used in multiple industries, including bioelectricity, bioplastics, and biofuels (UNICA and ApexBrasil, 2017). However, the sugarcane varieties used for industrial purposes are often not fell suited for rum manufacturing due to varying sucrose levels (Field Research, 2017). Molasses is most prominent in biofuels; users can blend sugarcane ethanol with gasoline or use it alone to meet energy needs. Ethanol (maize and sugar based) production from developed nations is expected to grow from 45 billion liters in 2013 to 71 billion liters in 2023 (OECD and FAO, 2017). Brazil is the global leader in ethanol production, reaching 30.23 billion liters in 2015/2016 (UNICA and ApexBrasil, 2017). It is expected to remain the primary sugar ethanol producer despite entry of new producers on smaller scales.

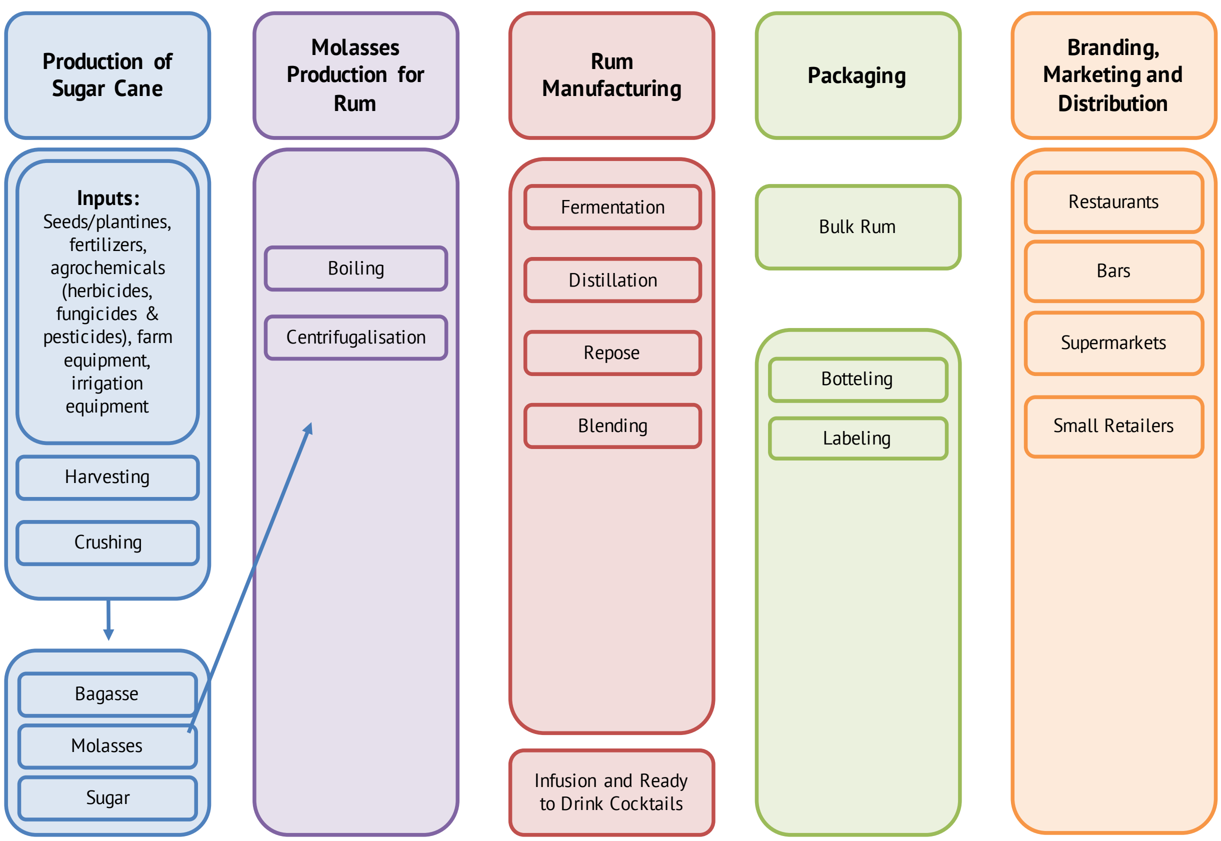
[2] Key participating nations include Swaziland, Belize, Guyana, Jamaica and Barbados and Fiji (Goodison, 2015).

From 2005 to 2014, molasses production increased by 27% from 50 million tons to 64 million tons. Growth occurs in two phases, with initial surges in supply occurring until 2007. Following a production decline, global stocks reached a high of 68 million in 2013. The top three producers, Brazil, India, and Thailand, accounted for 47% of the global supply in 2014 (UNComtrade, 2017a). Increases in molasses are linked to diversified uses, moving increasingly into human consumption and industrial purposes, discussed in detail in Section 2.2 below. This is important for rum industry actors because molasses is the traditional input for rum production. With diversified uses, the available supply suitable for rum manufacturing could be threatened. Molasses export unit prices also increased from US$0.14 US$/kg in 2006 to US$0.17 US$/kg in 2015 (UNComtrade, 2017a).

2.2. The Rum Global Value Chain

The rum GVC involves several activities from farms to distilleries and retail locations. The chain begins with the production of sugarcane which is harvested and processed into sugar, creating the by-product of molasses. Rum manufacturing occurs in distilleries using a variety of production methods and inputs (traditionally using molasses or other sugarcane based products). Once manufactured, rum is then either placed in oak barrels for ageing or immediately packaged for sale. Packaging can be either bulk rum packaging in large vats for export and further blending or can consist of bottling and labeling for sale at a variety of retail locations. The chain is presented in Figure 1 below.

Figure 1. The Rum Global Value Chain



Source: Authors.

Production of Sugarcane.[3] Sugarcane is the primary input in the rum GVC. Sugarcane is a species of grass that grows in tropical and subtropical regions. It requires 12-18 months to mature and is a perennial plant, meaning it regrows from the roots after cutting. Though sugarcane cultivation requires several months, harvesting is a relatively quick process, which must be completed within a few days of the plants reaching peak maturity. Harvesting is typically carried out manually, though some farms have been shifting to mechanized methods (Deininger & Byerlee, 2011).

Harvested sugarcane is crushed to produce three byproducts: bagasse, sugar, and molasses. Molasses is the primary product used in rum; sugar is used in the food and beverage industry as a sweetener. Bagasse is utilized in the production of industrial goods, such particle board and paper, fuel production, and as an input in several products, including animal feed (Chen & Chou, 1993).

Production of sugarcane is increasingly shifting to new regions. Brazil, India and Thailand are continuing to establish their position as global leaders in sugarcane production while Caribbean producers are in decline due to lack of competitiveness in the face of loss of preferential trade access and dropping global prices. Between 2005 and 2014, Brazil and India experienced 74% and 49% growth in sugarcane respectively (FAOSTAT, 2017). This is compared to Caribbean countries where growth is lower or production is declining. For example, Guyana sugarcane production declined 15% between 2005 and 2014, from 3 million tons to 2.5 million tons (FAOSTAT, 2017). Barbados had an even more dramatic decline, from 440,000 tons to 160,000 tons in the same time period (FAOSTAT, 2017). Shifting production regions, coupled with diversified uses mentioned above will pose a threat to sugarcane supplies for rum.

Molasses Production for Rum. After the harvesting and crushing of sugarcane, the juice is then brought to a boil to make molasses, the key ingredient for rum. Boiling of sugarcane juice helps to separate sugar crystals from the molasses syrup. The process is further aided by centrifugation, or using a centrifuge with a rotating cylindrical basket to aid in the separating the sugar crystals from the molasses. Depending on the particular region where sugarcane was harvested and the number of times the molasses was boiled, the taste will vary (Hamilton, 2017).

After production, molasses can go to a variety of uses as an input for both human and industrial products. Specifically, molasses can be used for:

- **Human consumption**: Sugarcane molasses is used as a sweetener in baking as well as an ingredient for ales and fermented spirits. However, due to its strong taste it is not directly consumed. Molasses made from sugar beet is used for cattle feed due to an unappealing taste.

- **Industrial use:** Molasses is used to aid in the fermentation of industrial alcohols and ethanol. It is also an input for liquid fertilizers and wastewater management as well as in construction to help in the setting of concrete and the binding of various materials including steel and glass (BirlaSugar, 2017).

[3] This section is based on the work of Abdulsamed et al (2015).

Rum Manufacturing. Rum manufacturing follows the production of molasses. Water and yeast are added to the molasses, and the mixture is then fermented. Variations in fermentation processes are common, with some producers choosing natural fermentation in open vats while others use laboratory methods to have more control of the process (Hamilton, 2017). Commercially branded rum is typically fermented in a controlled environment for one to three days at temperatures between 30-33°C (Distillery Trail, 2015).

After fermentation of the molasses, the liquid undergoes a process of distillation before a rest period in barrels, known as repose. The distillation process is straightforward—fermented liquid is heated in sealed vats, also known as stills, to a temperature of 78.3°C, which causes the alcohols to evaporate. Evaporated alcohol, once re-condensed, is then collected as a raw spirit (Hamilton, 2017). After distillation, the spirit is aged in charred oak barrels. Aging time varies among producers and can range from no time to decades. After aging, rum can be passed through a charcoal filter to give it a clear appearance, making light rum. Alternatively, it can be left as is, resulting in a different flavor profile and a darker rum.

Blending, as well as the infusions of other flavors, occurs post-aging and is the most skill-intensive activity in the chain. Blending involves the mixing of different rums, most often from the same distillery but from different batches and with varying ages to create unique flavors (Hamilton, 2017). Increasingly, rum manufacturers are seeking to produce new flavors by infusing rum with spices or fruits for added flavor as well as adding them to ready to drink cocktails (see Box 3).

Box 3. Ready to Drink Cocktails and Rum Innovations

Rum is increasingly infused with flavors and used as an ingredient in ready-to-drink cocktails, reflecting a broader trend in the spirits industry. Both trends reflect evolution in the market where consumers are expanding their tastes toward new drinks and convenience drinks that require minimal preparation.

While flavored rum is not new, brands are expanding production to introduce new flavors. These variations include many flavors, including tropical fruits such as mango and passion fruit, to unique products such as peaches and cream or strawberry float. Beyond fruit flavored infusions, other producers are expanding to include spices, such as the use of cinnamon in Captain Morgan's cannon blast brand of rum introduced in 2015.

In addition to the new flavors, pre-mixed drinks (also known as ready-to-drink cocktails) represent another growing product category. Pre-mixed drinks contain rum and other flavorings to create cocktails that are ready for consumption with minimal preparation. This category of alcoholic beverage product is growing in popularity, with sales exceeding 3.6 billion liters in 2014. Growth is projected at 3.2% through 2020.

Sources: Euromonitor (2014b); Euromonitor (2015); BreakThru (2015); Malibu (2017)

Packaging. Once produced, rum is either sold as bulk rum or is bottled and labeled for sale. Bulk rum is shipped in large vats for purchase and further refining by small bottlers for specialty brands, as well as for use in other rum based drinks. Bulk rum is shipped in International Organization for Standardization (ISO) certified containers that are cleaned and prepared for food shipment. Food cleaning requirements for ISO tanks can be capital intensive. For example, in 2012, the Jamaican Trade and Investment Agency, in partnership with JLB International Shipping and Scottish based Isocon, constructed a new food container cleaning facility that cost US$560,000 in startup capital and employed seven skilled workers (Holmes, 2012). Bulk rum is shipped across the globe to various rum brand owners. The actors that move the rum are frequently not associated with branding and unknown to most consumers (see Box 4).

Box 4. Bulk Rum and E&A Scheer

Producers in the Caribbean, Central America, and other producing regions occasionally sell bulk rum to smaller rum brands that do not possess the capital needed to own production or blending operations. The companies that link these producers to bottlers play an important, yet often overlooked, role in the rum GVC. While they do not own a direct brand, their rum blends are seen in a variety of places, from inexpensive labels in supermarkets to high-end brands known for quality, because they supply small scale bottlers and small volume brands.

The largest of these companies, E&A Scheer, is a privately held enterprise located in the Netherlands and has been in operation since 1762. They sell 33-35 million bottles of rum each year, making them one of the largest sellers globally, despite not owning any rum brands or production. Rather than selling direct to consumers, E&A Scheer imports bulk rum from over 20 countries and does in-house blending. The company sells blended rum to brands in over 45 nations. In 2001, the company acquired the Main Rum Company based in Liverpool, England, which focuses more on rare and vintage rum in cask form.

Despite the high amount of market activity, E&A Scheer, and others like them, are not widely known beyond those managing the brands they supply. This anonymity allows each brand to develop a marketing strategy and maintain its identity.

Source: Pietrek (2016)

Branding, Marketing and Distribution. This segment of the value chain incorporates all activities corresponding to the reception of rum in the end market and delivery to sales outlets as well as the point of sale for the final consumer. Rum in this segment of the GVC is no longer bulk rum; instead it is branded rum. There are four types of branding strategies:

- Large rum brands, like Bacardi and Appleton, that own their production sites.
- Rum brands that have private labels—Cana Brava and Real McCoy are examples—and source from a particular distillery but do not directly own the production facilities. These actors outsource rum production.
- Another category of private labels rum brands does not market the distilleries and areas they source from, instead relying on rum from multiple facilities or aggregate blenders (see Box 4 above).
- Finally, some rum branders function as independent bottlers that source high quality and rare rum casks from distillers in the Caribbean and other regions and market them in high-value end markets as specialty products. These small operations are not global brands; they often are sold only to local markets (Pietrek, 2016).

Rum sales occur in a variety of channels, with restaurants and bars representing the most critical points of purchase. However, as more consumers are choosing to consume alcohol at home with friends, supermarkets and small retailers are growing in importance. Finally, the surge in popularity of artisanal spirits is also helping to boost rum sales at distilleries, where consumers seek to gain greater insight into the production process and determinants of quality and also buy rum at the production site (Taylor, 2016).

Similar to growing consumer preferences for artisanal production, consumers are increasingly seeking greater knowledge about the places and methods used in the production of different spirits and brands. As a result, geographic indication (GI) labels are increasing in popularity. GIs are labels for food and drink products that have a specific geographical origin and possess unique qualities or reputations attributed to the place of production (WIPO, 2015). Advocates of GI labels often cite the positive economic outcomes for rural communities (Bowen, 2010). Empirical studies of GIs support claims of economic benefits via price premiums. A meta-analysis of 22 different GI products found in each case that these products received a price premium (averaging 15%) (Areté, 2013). GIs have a strong local focus with several institutions and actors who seek to establish, promote and protect production regions. At the international level, the World Intellectual Property Organization (WIPO) and the WTO's Agreement on Trade-Related Aspects of International Property Rights (TRIPS Agreement) are the two primary institutions that administer international treaties related to GIs. The TRIPS Agreement and the WIPO advocates for and protects GIs through the establishment of agreements between nations to designate various products as unique to specific regions. Box 5 below discusses the various types of GIs available.

Box 5. Sub-types of Geographic Indications

Geographic Indication labels are collectively shared labels that showcase the unique value derived by having one or all aspects of production in a specific place while also protecting the product from imitations. These labels are growing in popularity and are increasingly being used by developing nations as a strategy to develop rural areas. Three primary sub-types of GIs exist, with varying degrees of protection and regulation:

Protected designation of origin (PDO): The most stringent version of GIs and requires that all stages of processes and production occur in a given geographic region and follow set guidelines. Examples of PDO products include: La Mancha wine in Spain; Roquefort Cheese in France; Tequila in Mexico; and Pomme du Limousin apples from France.

Protected Geographic Indication (PGI): Similar protections and requirements to PDOs but requires only one stage of production occur within the region. Examples of PGI products include: Scotch beef in the UK; Lammefjordsgulerod carrots in Denmark; and Melton Mowbray Pork Pie from the UK.

Traditional Specialty Guarantees (TSG): The more flexible of GI labels used for products that employ traditional production methods. These designations focus exclusively on production techniques employed and do not account for the geographic spaces where a product is made. Examples of TSG products include: Trójniak, an alcoholic beverage from Poland; Mozzerella Cheese from Italy, and Jamon Serrano ham from Spain.

PDO labels account for 57% of GI marks obtained before 2007 compared to 41% for PGI and only 2% for TSG. Similarly, research shows PDO products typically receive a higher price premium compared to the other subsets of GIs.

Sources: DeSoucey (2010); Areté (2013); WIPRO (2015); Taste of Europe (2015)

2.3. Global Trade in the Rum GVC

The Caribbean is the main production region for rum (Pounder, 2010). Drawing on the availability of sugarcane byproducts and its long history of production, the Caribbean is regarded as the true birthplace of rum. Over the last decade, global rum exports steadily increased from US$1 billion in 2006 to over US$1.4 billion in 2015 (UNComtrade, 2017b). Molasses exports also increased, but exports fluctuated between 2006-2015 (UNComtrade, 2017a).
Top importers for molasses reflect the varied uses of the product. Meanwhile, the leading importers of rum highlight the dominance of developed nations as end markets for global spirits. However, many emerging economies are also increasing imports of spirits, reflecting the further globalization of the industry. This section discusses first the evolution of global supply over the past ten years, followed by an analysis of the growing global demand.

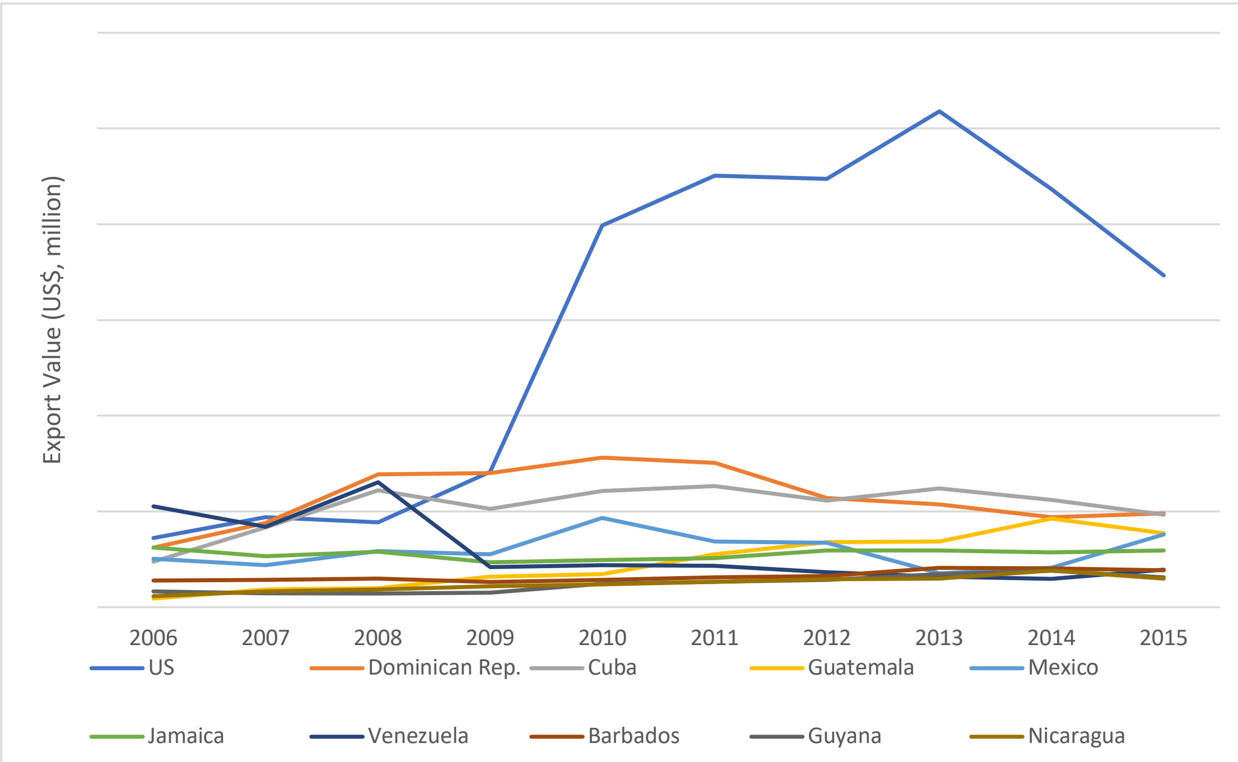
2.3.1. Global Supply

Global **exports of rum** increased 37.5% between 2006 and 2015, peaking in 2013 with over US$1.63 billion in exports. The major suppliers of global rum are highly concentrated in the Caribbean, Central America, and Latin America (see Figure 2). All of the leading exporters in 2015 were from those regions; together the top 10 accounted for 61.5% of total exports (UNComtrade, 2017b).[4] The US remained the top exporter for all years (except 2008) due to large scale production of Bacardi rum in Puerto Rico. In 2015, the US had triple the market share (approximately 24%) of the other leading producers. Except for Venezuela, all top producers saw their exports increase between 2006-2015.

The last decade also saw the emergence of new rum manufacturers. These producers, most often from Central America, built their rum industries to capitalize on growing global demand as well as burgeoning sugar industries. Guatemala grew from less than US$10 million in 2006 to US$78 million in 2015, making it the 4th largest rum exporter (UNComtrade, 2017b). This represents a 766% growth over one decade. Other non-traditional exporters such as Guyana and Nicaragua followed a similar pattern with 94% and 150% growth, respectively (UNComtrade, 2017b).

[4] European Union members listed as top exporters in UN Comtrade were omitted from analysis because they serve primarily as traders and do not produce rum.

Figure 2. Top Ten Rum Exporters by Value, 2006-2015 (US$, million)[5]



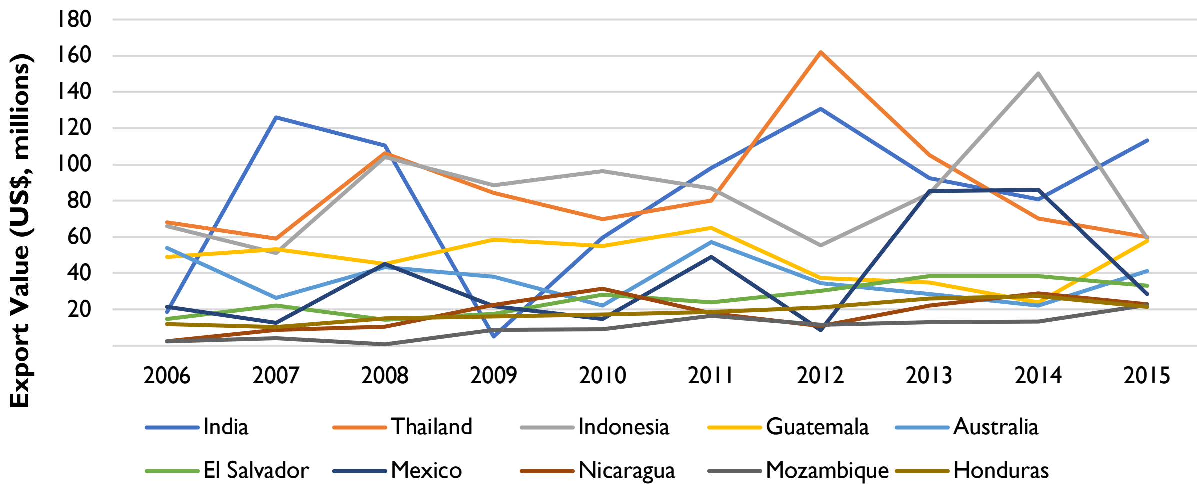
Source: UN Comtrade, HS 220840, based on mirror data. Downloaded on April 25, 2017.

Molasses exports, unlike rum, is geographically dispersed and occurs in many nations. Despite the fact that 47% of global molasses production is concentrated in three countries—Brazil, India, and Thailand—exporters are highly diverse (FAOSTAT, 2017; UNComtrade, 2017a). Brazil, the global leader in molasses production, is not a major exporter; instead, the country uses molasses as an input for the domestic industry. The leading exporters are geographically disbursed and have changed over time as production fluctuated between 2006 and 2015.

Globally, exports increased from 2006 to 2015 but were volatile. Exports rose from US$597 million in 2006 to a high of US$863 million in 2013 and have since declined, reaching only US$678 million in 2015 (UNComtrade, 2017a). Throughout the 10-year period, growth was unsteady, fluctuating year to year. Many of the top exporting nations followed these trends, with volatile export numbers during the time period (see Figure 3 below). In 2015, the top 10 exporters of molasses accounted for 67.7% of total molasses exports (UNComtrade, 2017a). The top exporter, India, accounted for nearly 17% of total exports. Despite its prominent role in the rum GVC, no Caribbean nation is a top molasses exporter, though many Central American countries export molasses.

[5] See table A-1 in the Appendix for more detail.

Figure 3. Top Molasses Exporters by Value (US$, million), 2006-2015[6]



Source: UN Comtrade, HS 1703, based on mirror data. Downloaded on April 25, 2017.

2.3.2. Global Demand

Global demand for rum is led by developed countries.[7] These countries are increasingly seeking higher quality spirits that have historical ties to their areas of production (Euromonitor, 2014b). Imports are concentrated in North America and Europe, led by Germany, Spain, and the US. Demand is growing, though global demand declined slightly in recent years following a peak in 2013 (UNComtrade, 2017b). Between 2006 and 2013, rum imports increased nearly 53%. Since then, global exports have shrunk, totaling US$1.45 billion in 2015 (UNComtrade, 2017b). In 2015, Germany was the leading importer, accounting for 20% of the global imports. It was followed by Spain and the USA, with 16% and 9%, respectively (see Figure 4).

In addition to North American and European markets, select emerging economies such as Chile and South Africa are also major importers of rum. South African imports, however, have declined since 2006. In 2009 imports to South Africa peaked at US$19 million, although they have since fallen to US$6 million. In contrast, rum grew in popularity in Chile, peaking at US$60 million in 2011. It has since declined to US$23 million but remains higher than the demand levels in 2006 (UNComtrade, 2017b).

Demand is shifting towards higher quality products. Beyond shifts from local spirits to internationally recognized spirit categories, rum is also experiencing a surge in demand for higher quality products, understood as products that are from traditional production regions or with high quality ingredients and artisanal production methods (Euromonitor, 2015). This trend is more pronounced in dark rum, which links quality to the ageing process, than in light rum which is not aged and often used as an ingredient in cocktails (Euromonitor, 2016a).

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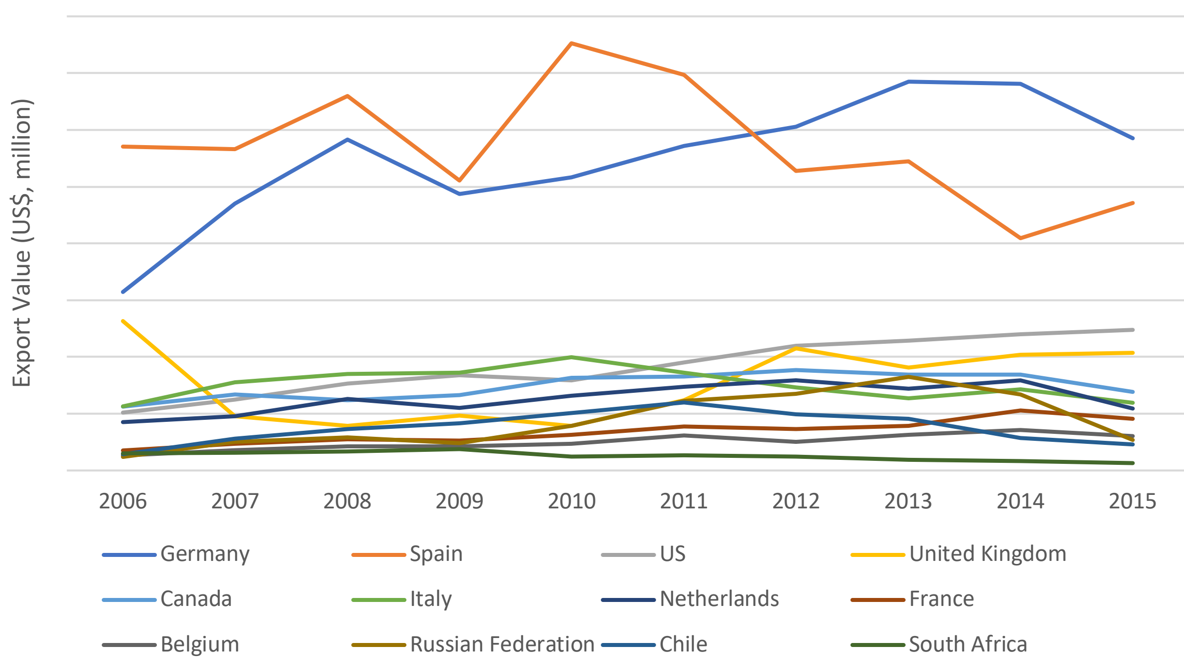
[6] See table A-2 in the Appendix for more detail.

[7] Molasses trade is geographically diverse and due to multiple end uses does not reflect true trends in rum. The majority of molasses for rum is traded regionally in the Caribbean. For a table of the top importers, see table A-4 in the Appendix.

Figure 4. Top Rum Importers by Value (US$, million), 2006-2015[8]



Source: UN Comtrade, HS 220840, based on imports. Downloaded on April 25, 2017.

2.4. Lead Firms and Governance

Many of the top selling rum brands are owned by distilled spirit multinational corporations (MNCs) who derive power primarily through their global distribution networks. Firms with the ability to source, transport and sell a variety of spirits, have more power compared to firms that concentrate on either 1) one product type (rum, vodka or gin); or 2) one geographic area. Distilled spirit MNCs own different spirits brands that reach consumers. Many of the top rum brands are owned by a handful of distilled spirits MNCs that own and distribute rum globally. These MNCs frequently own multiple brands across different types of spirits and have also developed sophisticated distribution and logistical capabilities. The firms have gained their leading position not through owning unique intellectual property or strategic production facilities, but rather through strategic mergers and acquisitions (M&A) that allow them to own top selling brands (da Silva Lopes, 2007). Table 1 shows the top spirit MNCs active in the rum GVC.

[8] See Table A-3 in the appendix for more details.

Table 1. Leading Distilled Spirits MNCs Active in Rum GVC

Firm	Headquarters (Year Established)	Key Rum Brands	% Spirits Volume Share (2014)	Total Sales (2016)
Diageo	United Kingdom (1997)	• Captain Morgan • Zacapa • McDowell's No.1 Celebration	9.3%	US$13.6 billion
Pernod Ricard	France (1975)	• Malibu • Havana Club	4.5%	US$10.3 billion
Bacardi	Bermuda (1862)	• Bacardi • Havana Club (US)	1.5%	US$4.6 billion (2014)
Allied Blenders and Distillers	India (1986)	• Jolly Rogers Rum	1.3%	US$520 million (2013)

Source: Euromonitor, 2015; Mann, 2015; Statista, 2017

Beyond distribution networks, alcohol MNCs gain power through brand ownership. Many of these globally recognized brands are traded among alcohol MNCs via M&As. Distilled spirits MNCs have long histories, such as Bacardi, which began operation in the 1800s. With increased frequency, they are merging with other firms to build their market share. For example, Diageo, formed in 1997, was the result of a merger between Guinness and Grand Metropolitan (IAS, 2017). More recently, Diageo has sought to expand into developing economies by acquiring popular local spirits brands. For example, it owns a majority share in United Spirits, an Indian based alcohol producer and owner of the largest rum brand by volume, McDowell's No.1 Celebration (IAS, 2017; Statista, 2017). As a result of these expanded operations and acquisitions, Diageo is now the main global firm active in the rum GVC (Euromonitor, 2016b).

Mergers and acquisitions in the spirits industry are driven by two distinct trends. First, the acquisition of regional and domestic spirit types by leading spirit MNCs to expand their global reach.[9] Beyond the need to build a presence in new and growing markets, consolidation among companies occurs as firms seek to expand product categories, gaining access to new types of spirits to expand their portfolio. For example, Campari has made investments to grow its products beyond bitters to a range of goods. In 2006, it acquired many Scottish Whiskeys from Pernod Riccard before moving into US bourbon sales in 2009. At the same time, Pernod Ricard was making strategic divestments and acquisitions to create a larger global presence, moving beyond the European markets (Euromonitor, 2014a). This strategy included the 2005 acquisition of Allied Domecq, which gave Pernod Riccard ownership of Malibu Rum (Wiggins, 2005).

The rum GVC mirrors these trends with distilled spirits MNCs seeking to extend their portfolio through the acquisition of rum brands. For example, Diageo acquired Captain Morgan in the early 2000s from Seagram (Kapner, 2000). More recently, Maison Ferrand purchased the Barbadian West Indies Rum Distillery Ltd. with the goal of using their own distillery in the Caribbean to help expand

[9] Diageo's 2012 acquisition of Ypióca to further expand their presence in Brazil is an example.

their existing rum brand, Platinum Rum, while also gaining access to rum from Jamaica. Despite the acquisition, brands currently supplied by West Indies Rum Distillery will continue to maintain their existing relationship, underscoring the complex relationship where owners of certain rum products also serve as supplier to other rum brands (Maison Ferrnad, 2017). As Table 2 shows, with the exception of Tanduay, a brand from the Philippines that largely serves the domestic market, top selling rum brands are owned by distilled spirits MNCs but recently began exporting to other nations.

Table 2. Top Rum Brands by Sales Volume, 2015

Brand	**Owner**	**Rum Sales by Volume (9-liter cases, millions), 2015**
McDowell's No.1 Celebration	Diageo/ United Spirits Limited	17.8
Bacardi	Bacardi	17.4
Tanduay	Tanduay Distillers	16.5
Captain Morgan	Diageo	10.6
Havana Club[10]	Pernod Ricard / Bacardi	4

Source: Statista, 2017, Euromonitor, 2016

In contrast to distilled spirits MNCs, sugarcane producers and smaller-scale distillers and bottlers have limited power. They depend on lead firms and their distribution networks to reach consumers. Despite having geographic advantages that facilitate production, producers often face large distances to consumer markets and depend on intermediaries to help access retail locations. Competitiveness of countries in sugarcane is linked to government subsidies to help bolster the industry (see Box 2 for more details).

3. Barbados in the Rum Global Value Chain

3.1. Introduction

Rum has a long tradition in Barbados, home to the oldest rum distillery in the world. Rum is the primary agro-industrial export in the nation and fourth largest non-service foreign exchange generator after sugar, bauxite, and bananas (BPSTT, 2014). In 2015, Barbados exported US$39 million in rum, representing 3% of the global market. As demand for spirits, especially those perceived as authentic, grow internationally, Barbados is positioned to increase its participation in the rum sector. Sugarcane is historically linked to Barbados as a major export to the United Kingdom during colonial time. As bulk sugar exports diminished, rum rose to prominence. In recent

[10] Havana Club is owned through a joint venture between Pernod Ricard and the Cuban government. However, Bacardi also distributes a brand of rum under the name Captain Morgan, resulting in an ongoing dispute over ownership of the brand name.

years, both sugarcane and rum remain vital to Barbados' economy. However, the sugar industry in the country is in crisis, nowadays just one sugar plant is opened in the country.

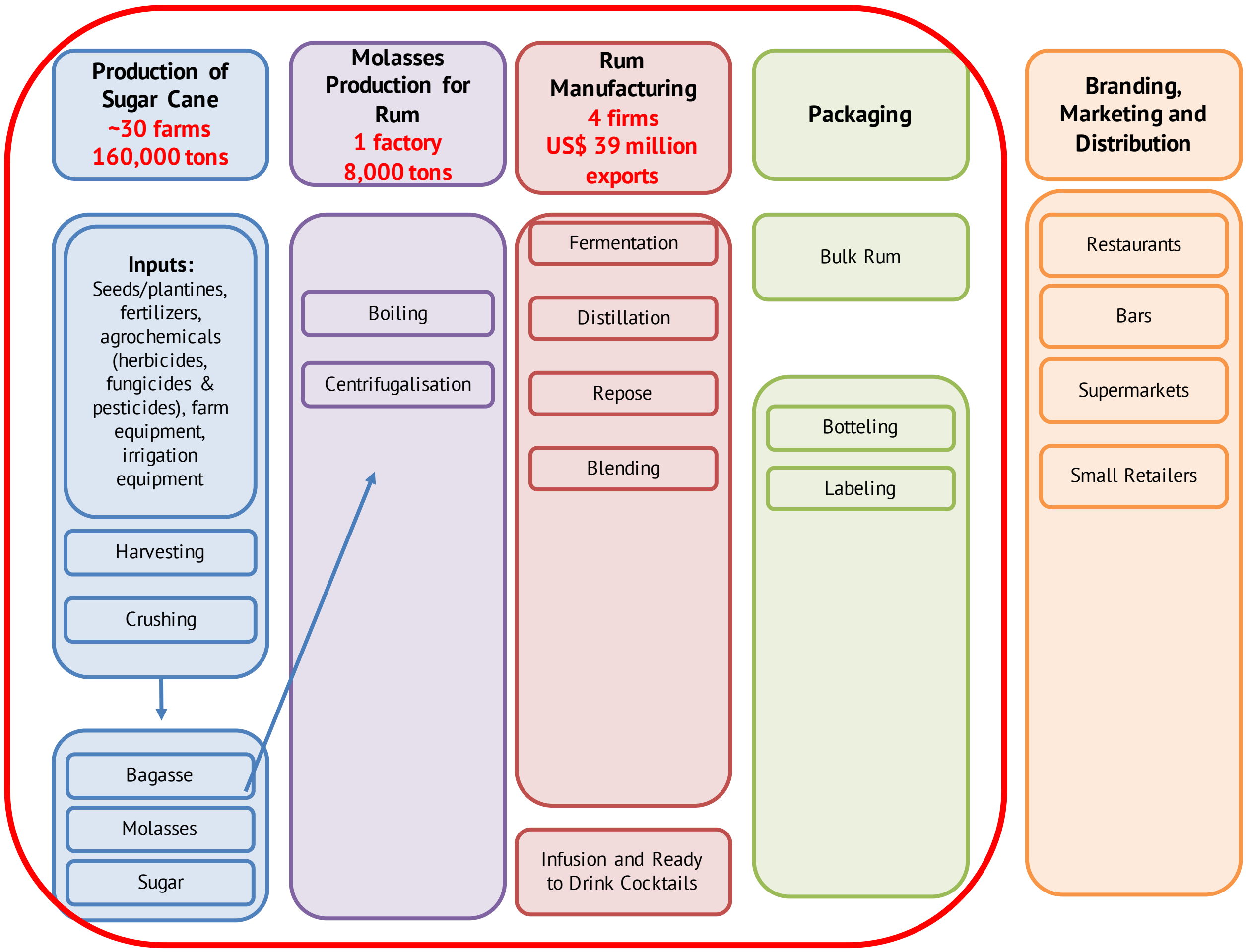
Rum manufacturing is concentrated among four rum producers who face shrinking domestic supplies of molasses. All are increasingly importing molasses from other regional producers. These rum manufacturers are a diverse group of actors, varying in both scope and their participation in the rum GVC. Mount Gay produces globally recognized brands of rum under their name but are owned by Rémy Cointreau, a MNC distilled spirit. West Indies Rum Distillery and Foursquare own a variety of rum brands under multiple names. Saint Nicholas Abbey, in contrast, is a boutique sugarcane and rum manufacturer and depends on linkages to tourism to drive sales.

This section seeks to further understand the depth and breadth of GVC participation in Barbados to provide a foundation for analyzing how the country can take advantage of available opportunities. First, current products and exports are examined using available trade and firm-level data. It then outlines the structure of the industry and key firms active in the country at each stage of the value chain. It concludes with advantages and constraints that will shape future participation in the rum GVC.

3.2. Barbados' Current Participation in the Rum GVC

As discussed in Section 2.2, five major segments comprise the rum GVC: production of sugarcane, molasses production, rum manufacturing, packaging, and marketing & distribution. Figure 5 highlights the current position of Barbados in this rum GVC with red rectangles. Industry actors are mostly disconnected—only one rum producer is vertically integrated while another uses cane produced from their farms only for select brands of rum. Within Barbados, the majority of the molasses needed for rum manufacturing is imported.

Figure 5. Barbados in the Rum Global Value Chain



Source: Authors

Sugarcane Production: Sugarcane production is an important historical industry in Barbados and is tightly interwoven into the social and economic history of the island. The island has the appropriate soil and climate for sugarcane cultivation, and harvesting occurs between January and June. The sugarcane plant helps provide nutrients to the land to promote food crops that are intercropped in the fields. In 2014, sugarcane was harvested from 9,443 hectares (ha) in Barbados, a growth in production area of 28% since 2005 (FAOSTAT, 2017). Farms are either managed by independent landowners or operated by the Barbados Agriculture Management Corporation (BAMC), a quasi-government corporation. Production reached 160,000 tons across approximately 30 farms in 2015 (FAOSTAT, 2017; Field Research, 2017). Yields varied widely across farms, with some farms reporting harvests of over 30MT/ha (Field Research, 2017). Average yields of 17 MT/ha were considerably lower than the global average of 69 MT/ha (FAOSTAT, 2017). A two-year drought is a primary reason for lower yields, though the drought was exacerbated by the lack of agricultural best practices in Barbados; for example, production is still rain-fed and not irrigated (Field Research, 2017).

Production of Molasses: Historically, molasses production on the island emerged as a result of the burgeoning sugar industry. A byproduct of sugar processing, molasses was absorbed into the rum industry and helped establish Barbados' position as a major rum producer. During the peak of the sugarcane industry, molasses was made at over 300 plants that processed sugarcane into refined sugar. The molasses was then sold, primarily to rum producers, who would use it as the primary input for rum. However, as the domestic sugar industry declined due to dropping global prices and the erosion of preferential trade agreements (see Section 2.1 above), molasses production shrank. Currently, only one plant processes sugarcane into molasses on the island, the Port Vale Plant. The plant has a capacity of producing 20,000 tons of molasses annually and employees approximately 230 people (Field Research, 2017). Production numbers for the country vary, with the FAO reporting 8,000 tons of molasses produced in Barbados in 2014 (FAOSTAT, 2017). Additionally, Port Vale Plant is facing several productivity issues due to lack of technical expertise, old equipment, and dwindling supplies of sugarcane from island producers (Field Research, 2017).

Rum Manufacturing: Barbados is a major exporter in the global rum industry. Rum is the largest agri-industrial export from the nation, with exports totaling US$39million in 2015 (BPSTT, 2014; UNComtrade, 2017b). Rum exports from Barbados are increasing in value. From 2006 to 2015, export value grew 39%, while export volumes remained largely constant during the time frame, indicating a shift towards premium rums (UNComtrade, 2017b). Barbados currently supplies approximately 3% of globally traded rum. The nation is regarded by many as the birthplace of rum with evidence of production dating back to the 1600s. Four major firms are active in the rum GVC with multiple varieties and brands generated by each firm. Producers use a variety of methods to produce rum and have a variety of price points and scales from the small, artisanal production at Saint Nicholas Abbey to large-scale production at Mount Gay for international markets. Due to the shortage of molasses, rum manufacturers need to import this product from neighboring countries, especially Guyana. In 2015, Barbados imported US$5 million (14,000 MT) of molasses and 93% came from Guyana (UNComtrade, 2017b).

3.2.1. Industry Organization

Sugarcane production in Barbados is divided between government managed farms, overseen by the BAMC, and independent farms managed by land owners. The government gained control of approximately 40-60% of sugarcane fields in the early 1990s when declining sugar prices and rising costs created high levels of debt that many farmers were unable to repay (Field Research, 2017). To help maintain the industry, the government seized control and managed the indebted farm lands. Despite the government presence, independent farmers still exist in the sector. The Barbados Sugar Industries Limited (BSIL), a holding company, represents the interests of the approximately 12 independent sugarcane producers in the country, who account for roughly 60% of the sugarcane produced in Barbados (Field Research, 2017). Overall, the sugarcane production sector is struggling in Barbados with declining global prices straining government budgets due to set prices paid to local farmers, thereby reducing the amount of funds for training and farm-level upgrades.

Due to the historical importance of sugarcane to the island, Barbados has developed a well-functioning R&D sector that provides research services for sugarcane for the region. R&D programs in Barbados are housed at the West Indies Central Sugar Cane Breeding Station, the longest running cane breeding station globally and a supplier of cane varieties for many Caribbean nations.

All sugarcane farms in Barbados, except for Saint Nicholas Abbey, sell to the government managed Port Vale plant for processing. The plant has a set buying price for sugarcane, which all producers receive. In 2017, the price was estimated at US$90/ton plus a price support system to help the industry adjust to the erosion of the EU supports (Madden, 2017). However, the government hopes to reduce price supports over time as the sector recovers from the shock. Furthermore, farmers report actual payment is much less, totally only US$22.50 as of April 2017 (Field Research, 2017; Madden, 2017).

The Port Vale processing plant primarily processes sugarcane into raw brown sugar, which is exported in bulk to Europe. However, the nation is hoping to shift away from bulk sugar exports toward packaged sugar in an attempt to upgrade into higher-value activities. The industry's ultimate goal is to capitalize on the quality connotation of Barbados in the UK to move into high-end niche sugar with domestic packaging.

Due to the shrinking sugarcane sector, the majority of molasses for rum manufacturing is imported, with a small amount coming from Port Vale. Imports of molasses come from other Caribbean countries, primarily Guyana. Regional molasses However, due to the end of preferential access to EU markets under the Cotonou Agreement, the Caribbean sugar sector is in crisis and future supplies of sugarcane products, such as molasses are questionable. Recent planning to modernize sugarcane processing in Barbados through the construction of a new processing plant is ongoing (see Box 6).

Box 6. The Inter-Sugar Partnership

Revitalizing the sugar industry is a major and ongoing activity with multiple actors involved. The Inter-Sugar Partnership (ISP) is one initiative designed to help strengthen sugarcane processing in Barbados to help make the industry competitive and to meet the demands of other sectors, such as rum. The initiative is a Public-Private Partnership (PPP) with government involvement through the Ministry of Agriculture and the Ministry of Finance. The ISP mandate is to oversee the construction of a self-sustaining sugar-processing facility that does not depend on government support.

The factory will use modern techniques to crush the sugarcane, allowing for higher sucrose extraction, which can then be used in multiple products, including electricity generation. It will also be able to increase the quality of molasses extract and the quantity. While projected molasses production will not replace the need for imports to sustain the domestic rum industry, it will lower import dependency. It will also be able to process the sugar into higher value end-products, allowing Barbados to upgrade into packaged sugar.

The factory is in hold for lack of financial resources and is hoping to open operations in 2020.

Source: Field Research (2017)

Four major firms are active in Barbados' rum manufacturing (see Table 3). These companies vary in size and scope, offering many different products. Many have long histories in rum; Mount Gay, for example, has records dating production to 1703, making it the oldest continuing rum distillery in the world (Totally Barbados, 2017).

Table 3. Lead Rum Manufactures in Barbados

Rum Manufacturer	Year Established	Estimated Production and Exports (2016)	Major Brands
Mount Gay Distillery	1703	Data not available	• Mount Gay XO • Mount Gay Eclipse • Mount Gay 1703 • Mount Gay Black Barrel • Mount Gay Silver
West Indies Rum Distillery Ltd.	1893	9 million liters (export data not available)	• Malibu • Cockspur Fine Rum • Gilbey's • Popov
Foursquare Distillery	1730s	1.5 million liters (75% exported)	• Foursquare Rum • Rum Sixty-Six • Doorly's • RL Seale 10 year • Old Brigand
Saint Nicholas Abbey Distillery	2009	3,500 liters* (<1% exported)	• St. Nicholas Abbey White Rum • St. Nicholas Abbey 5 year aged rum • St. Nicholas Abbey 12 year aged rum • St. Nicholas Abbey 18 year aged rum

* Volume Sold

Source: Field Research, 2017; West Indies Rum Distillery, 2017

3.3. Upgrading and Industry Evolution in Barbados Rum GVC

Programs designed to increase trade are a major driver of competitiveness in the region. The Sugar Protocol under the Cotonou Agreement with African, Caribbean and Pacific countries guaranteed the EU support price for set quantities of sugar imports and drove much of the development in the industry in the second half of the 20th century (Goodison, 2015). The industry was aided further by the Caribbean Basin Economic Recovery Act (CBERA), which gives rum producers duty-free exports and other preferential access the US market (Guyana Chronicle, 2013; US CBP, 2017).[11] Both of these programs helped to maintain price competitiveness in the region; however, the WTO ruling against the Cotonou Agreement makes the regional sugar industry vulnerable to global competition and low market prices.

Beyond trade programs to help bolster competitiveness, Barbados is capitalizing on growing global demand for premium spirits. The move towards premiumization is driven by regional and national initiative to define Caribbean rum as a high-quality product. The West Indies Rum and Spirits Producers' Association Inc. (WIRSPA) is the regional body overseeing the move to premiumization. This is largely accomplished via the establishment and overseeing the Authentic Caribbean Rum Marque (ACR Marque). The ACR Marque sets quality standards for participants and allows for a

[11] Other traditional products of the CBERA include bananas, bauxite and aluminum ores, and coffee.

special label on rum bottles to denote that the rum is a premium Caribbean product. Recent efforts were largely aided by the EU funded Caribbean Rum Sector Program which sought to transform Caribbean rum producers, including Barbados from bulk exporters to high-value producers (see Box 7).

Box 7. The Caribbean Rum Sector Program

In 2002, the EU approved a program to support Caribbean producers by reducing their dependence on commodity bulk exports. Plant upgrading and marketing support was undertaken to improve competitiveness and support moves towards higher-value branded products. The Program provided co-financing for upgrading projects, technical expertise and specialized services to the Caribbean rum industry. Completed in June 2010, the Caribbean Rum Sector Program led to:

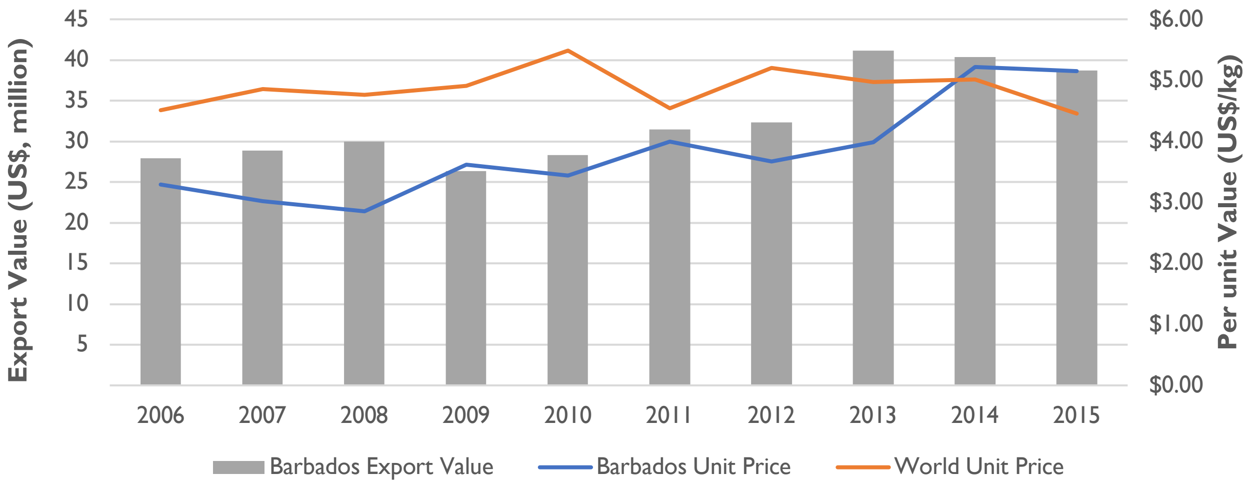
- The introduction of 18 new brands and 39 brand variants to the EU market;
- Participating companies maintaining employment at 6,000 people;
- A 20% increase in direct female employment in the sector since 2003;
- The undertaking of 20 waste treatment projects by 15 companies in 12 countries;
- The undertaking of 11 energy and conservation projects in 8 countries;
- A 40% increase (approximately US$250 million) in tax revenues received from participating producers since 2003;
- A 140% increase in the number of tourists visiting rum facilities since 2003;
- Companies in the region investing approximately €68 million in capital projects.

In 2012, a second project was launched, with the overall objective of building long-term viability of the Caribbean rum sector in international markets as a significant source of employment, tax revenues and foreign exchange. The specific goal is to implement a marketing and communications campaign for the ACR Marque, and promoting technical collaboration, quality and best practice among producers.

Source: Renwick (2011); WIRSPA (2017)

Barbados is benefiting from these programs to move toward premiumization. Despite a slight decline in exports by volume, from 8,500 MT in 2005 to 7,500 MT in 2015, Barbados' export value grew in total amounts as well as in per unit value. This trend indicates a shift into higher value rum exports, which Barbados mirrors in its passing of the global average per unit rum prices in 2014 (See Figure 6). The shift towards premium rums is part of a larger trend to capitalize on the historical association of Barbados as the birthplace of rum and to promote the provenance of the island in rum manufacturing (Tisdall, 2013).

Figure 6. Rum Per Unit Prices (US$/kg), 2006-2015



Source: UN Comtrade, HS 220840, based on mirrored imports. Downloaded on April 25, 2017.

Beyond gearing towards premiumization, Barbados is also engaging in further premiumization via the establishment of a PGI for Barbados rum. The Barbados rum PGI would protect mislabeling of rum abroad as Barbados rum, thereby helping to protect and promote the rich heritage of rum production in the nation. However, many actors, including several rum manufacturers, question the appropriateness of the strategy citing the broad definitions of rum production and its inability to capture the diverse methods—continual versus batch distillation and use of molasses versus sugarcane juice, for example—used in the nation. Critics also note it does not have specifications for the type of input or sourcing location (Field Research, 2017). In contrast, other rum manufacturers, such as Guatemala and the Dominican Republic, secured the stricter PDO label for rum for specialized rum varieties produced in their respective nations (see Section 4.1).

Due to the lack of molasses in the region because of the Caribbean sugar crisis, some companies are experimenting with the use of sugarcane juice to prepare rum. While common in French speaking Caribbean islands, this is a novel approach for other regional rum actors. This approach leapfrogs a capital-intensive segment of the value chain –sugar manufacturing and molasses production. In Barbados, Saint Nicholas Abby (see box 8) only produces rum from sugarcane juice and sells bottles of rum for over US$200. This allows Saint Nicholas Abby to have a vertically integrated industry without depending on sugar manufacturing to obtain molasses. Other companies in the country are beginning to experiment with the use of sugarcane juice in rum preparation, but in limited quantitates. Outside the Caribbean, Zacapa from Guatemala uses sugarcane juice instead of molasses to produce rum. Zacapa is the fastest growing rum brand in the world and highly recognized for its quality.

Finally, Barbados is engaging in chain upgrading as rum distilleries now offer tours of their production facilities to tourists. Mount Gay offers tours to 25,000-30,000 visitors each year. Many of the visitors are cruise passengers, given the distilleries proximity to the port. Similarly, Foursquare, located in Heritage Park, offers a free, self-guided tour to visitors daily. Heritage Park also offers visitors the chance to explore arts and craft stores and offers food and beverages (Visit Barbados, 2017). Tourism most closely intersects with the rum industry at Saint Nicholas Abbey, where visits to the Abbey help to drive most rum sells (see Box 8).

Box 8. Chain Upgrading into Tourism: Saint Nicholas Abbey

Saint Nicholas Abbey entered modern rum production in 2009 but has a long history of sugarcane production and processing in Barbados. Established over 250 years ago, the Abbey first functioned mainly as a sugar plantation with some processing-crushing for cane syrup. The Warren family—who obtained the property in 2008—sought out to make rum from the cane syrup, a departure from traditional molasses-based rum manufacturing found in Barbados.

Saint Nicholas Abbey attributes over 90% of its rum sales to tourism, underscoring the interconnections of the industry. The Abbey offers daily tours to visitors allowing them to see the historic buildings, steam mill, and gardens on the grounds. Tourists explore the gardens and trails of the plantation as well as learn about sugarcane processing at the functional equipment on site. Visitors can also see the rum manufacturing operations including the bottling and labeling process, both done manually with specialized labels possible to commemorate special occasions and the visit to the distillery. The plantation features a gift shop that sells rum produced by Saint Nicholas to visitors as well as other products made from the sugarcane harvests. Additionally, guests may rent the grounds for special events, including weddings.

Saint Nicholas Abbey represents an example of functional upgrading in the rum industry into tourism. A small-scale producer of rum, revenue is also earned by being a tourist destination on the island and promoting the unique history and beauty of the Abbey. The Abbey has buses to transport cruise passengers from the port and works with ten cruise companies, mainly with smaller, luxury cruises. Plans to expand attractions, including adding a train around the lands will help to bring more tourist in the future.

Source: Field Research (2017); Saint Nicholas Abbey (2017)

3.4. Industry Institutionalization

Actors along the rum GVC remain disconnected from one another, despite the long history of sugarcane production and rum manufacturing on the island. Barbados does have several industry associations and coordinating bodies among specific types of actors, including BSIL for sugar farmers and the Barbados Rum Committee for rum manufacturers. However, industry actors act atomically, with sugarcane farmers selling to the one processor on the island and rum producers sourcing molasses from multiple suppliers, with a high dependence on imports. There is no uniform industry strategy to increase competitiveness. Sugarcane producers are focused on moving away from bulk exports toward niche marketing, a strategy that limits the availability of local molasses. At the same time, rum producers are seeking to protect Barbados rum from imitations and counterfeits outside of the Caribbean without developing strategies to increase input supplies domestically.

Only two rum firms have established linkages across the value chain. Saint Nicholas is vertically integrated, allowing it to mitigate the impact of fluctuating sugarcane prices and create a product that is completely from Barbados. Mount Gay is using a similar integration strategy to support its premium rum brand by tracing inputs from a Mount Gay plantation on the island to its distillery. Mount Gay even has an agreement with the only sugar processor in the island for single batch processing to create a rum that was made from 100% Mount Gay products. Except for these two activities, there is a limited connection between sugarcane harvesters, molasses producers, and rum companies. Table 4 provides an overview of key stakeholders in the rum GVC and their role.

Table 4. Key Stakeholders in the Rum GVC

Actor	Description	Role
Ministry of Agriculture	Government agency charged with overseeing policy related to sugarcane production and processing	Sets policies and prices for sugarcane and processed sugar products. Government organization overseeing BAMC
Barbados Agriculture Management Corporation (BAMC)	Government owned private company formed in 1990s to manage failing sugarcane fields.	Management of sugarcane land and the production of sugar on government leased land; ownership of the sole sugar factory in Barbados
Barbados Sugar Industries Limited (BSIL)	Holding company for Independent sugarcane farmers	Negotiate and represent interests of sugarcane farmers that are not part of the BAMC
West Indies Rum and Spirits Producers' Association Inc. (WIRSPA)	Collective association comprised of 13 national associations of rum producers in the Caribbean	Represents the regional interest in rum and other spirits internationally; Currently developing a regional label to promote rum produced in member countries and implementation of best practices
Barbados Cane Industry Corporation (BCIC)	Government owned private company formed in 2007 to revitalize sugar sector	Overseeing development of new processing facility and also working at field level to help growers increase production
Barbados Society of Technologists in Agriculture (BSTA)	Not for profit association to promote best practices and research in agriculture. Originally focused exclusively on sugar, it now spans multiple agricultural products	Provides support information and addresses agriculture research gaps to promote local sustainable agriculture
West Indies Central Sugar Cane Breeding Station	Regional developer of various sugarcane varieties to meet diverse needs of growers, established in 1932, it is one of the oldest breeding stations globally	Breed new varieties of sugarcane to meet needs of English speaking Caribbean nations
Department of Agronomy and Research Variety Testing Unit	BAMC managed office that helps to test and select best sugarcane varieties for Barbados and address pressing agronomic issues in sugarcane sector	Carry out variety development assessment and conduct agronomy research on how to improve the sugarcane sector in a variety of aspects including disease and pest control
Barbados Rum Committee	Association that represents the interests of the four major rum producers in Barbados	Represents and promotes the Barbados rum sector in the nation as well as in WIRSPA

Source: Authors.

3.5. Advantages and Constraints

Barbados' potential in the rum GVC depends on a set of structural strengths and weaknesses, elaborated in Table 5. These allow for strategic opportunities that should be capitalized on as well as threats that must be addressed for the country to improve its position in the industry.

Table 5. SWOT of Barbados Rum Industry

Strengths	**Weaknesses**
• Historical legacy and association with rum • Established global presence of national brands • Ideal environmental conditions for sugarcane	• Decline of bulk sugar production in the country threatens molasses supply • Disconnection of actors • No clear industry strategy • Lack of competitiveness of the sugarcane industry due to: Limited modern agriculture practices, low investments and declining workforce
Opportunities	**Threats**
• Growing global demand for premium rum • Linkages with tourism industry • Consumer demand for "authentic" products • Historical legacy for branding purposes	• Increasing exports from competitors • Imitation from other nations • Declining molasses production in Caribbean

Source: Authors.

3.5.1. Advantages

Barbados has many strengths that favor strong competitiveness in the rum GVC. It continues to be a major actor in the rum GVC and has advantages that allow it to maintain a strong position in the industry. The advantages elaborated below are a few of Barbados' key strengths.

1. **Historical legacy and association with rum**. Barbados has a strong yet not fully captured marketing link to rum as the birthplace of rum and home to the oldest distillery in the world through Mount Gay. This association has not been fully exploited. It is particularly useful given recent shifts towards place-based, authentic consumption in spirits. As the birthplace of rum, Barbados has several advantages in creating a rum brand that matches consumer demands.

2. **Established global presence of national brands.** Many rum brands from Barbados are recognized globally. Mount Gay, for instance, is regarded globally as a major rum brand. Similarly, Malibu rum is well known for its coconut flavoring. An existing connection to global consumers via internationally recognized brands represents a key advantage for the nation as it seeks to bolster its competitiveness.

3. **Barbados is well situated for sugarcane production.** Barbados has the climate needed to produce sugarcane as well as a long history of production. Sugarcane is an important

economic, environmental and social crop for Barbados. It is also the key input for rum manufacturing. Rum emerged as a direct result of the molasses byproduct made during sugar manufacturing on the island during colonial times. Barbados is geographically situated in an area that is conducive to large scale sugarcane growth. It also is positioned south of major trade winds, limiting its exposure to hurricanes and tropical storms which could damage the crop (Barbados Weather, 2017). Furthermore, sugarcane is still an important maintainer of soil quality as well as protector of the natural beauty on the island. Finally, sugarcane also intercrops well with many other plants farmed for nutrition and to meet dietary needs on the island.

3.5.2. Constraints

Despite the advantages listed above, several constraints threaten Barbados' ability to maintain or increase its participation in the rum GVC. These constraints, elaborated below, are the result of both global pressures on the local industry as well as internal issues.

1. **Decline of bulk sugar production in the country threatens molasses supply.** With the erosion of preferential trade access and the lowering cost of sugar on global markets, domestic sugar processing is declining. Sugarcane production has fallen steadily as global prices drop and global trade becomes increasingly liberalized. Even with the government assuming control of failing sugarcane farms through the creation of the BAMC, the nation continues to struggle to revitalize the industry. For example, there is currently only one sugarcane processor on the island; moreover, it lacks modern equipment to remain competitive on the global level. Additionally, local production is not sufficient to meet the demands of rum producers. Consequently, rum producers are increasingly importing molasses from other nations which exposes them to global prices shocks and limits the effectiveness of geographically centered marketing efforts.

2. **Actors in the rum GVC are disconnected.** Sugarcane producers are not connected to the domestic rum industry. The only point of contact occurs via the sugar processing plant in Port Vale that serves as the sole buyer of domestic sugarcane and a small quantity supplier of molasses to the island. Attempts to connect actors is limited to small brands and producers with vertically integrated operations.

3. **No clear strategy for growth.** Strategies are not unified, with rum producers focusing on branding around rum as a Barbados product without the ability to source domestic inputs. Simultaneously, sugarcane producers have sought to diversify production to higher value varieties, shifting from bulk production to specialty retail. These strategies are not complementary—sugar will either need to be produced in high volumes to supply the rum industry or rum will need to source molasses from outside Barbados, limiting its tie to the island.

4. **Lack of competitiveness of the sugarcane industry due to: limited modern agriculture practices, low investments and declining workforce.** Investments in sugarcane are decreasing as global prices drop. As a result, the use of modern equipment and high-quality fertilizers is limited. This creates a drop-in productivity, from 2009's yields of 30 tons per acre to the present 15 tons per acre (Field Research, 2017).

4. Lessons for Barbados Upgrading from Global Experiences

While Barbados has experienced considerable success in the GVC and global demand remains strong, it will need to undertake upgrading to remain competitive in the face of rising premiumization and upgrading in countries such as Guatemala or Dominican Republic. By adopting improved technologies, generating a new product or engaging in an entirely fresh set of activities, upgrading can also allow actors to capture greater value from their participation in GVCs (Humphrey & Schmitz, 2002). Table 6 summarizes the key upgrading trajectories that have typically been pursued by countries in the rum GVC.

Table 6. Selected Upgrading Strategies in the Rum GVC

Upgrading Trajectory	Description
PROCESS UPGRADING **(Agroprocessing)**	Primarily focused on increasing molasses production. The loss of preferential access to EU markets is threatening the domestic sugar industry of Caribbean countries. However, increases in the production of molasses will allow greater diversification of end uses for sugar beyond traditional food and beverage. Sugar derivatives now are employed in multiple industries including bioelectricity, bioplastics, and biofuels. *Example:* Increases of molasses production is linked to diversified uses of molasses into human consumption and industrial purposes. For instance, Brazil, the global leader in molasses production, is also the leader in ethanol production. The country is not a major exporter of molasses, utilizing most of the production as an input for domestic industry, which currently does not include rum at a significant level.
PROCESS UPGRADING **(Manufacturing)**	Primarily focused on expanding the distilleries productive capacities. Achieving this upgrading requires access to training to familiarize producers with new production methods and providing support to industry workers through skill development. It also entails supporting the integration of new technologies into the production operations. *Example*: Between 2006 and 2015, Guyana's rum exports grew at an annual average rate of 9%, doubling the global market average annual growth rate (UNComtrade, 2017b). In addition, during this period, the unit price per kg. grew from US$1.26 to US$3.11. The successful performance is attributed to the strategic investments of the local rum producers (Banks DIH and Demerara Distillers Limited, DDL) in human capital (e.g. implementing scholarships and graduate management trainee programs to develop skills in chemistry, engineering and management). In addition, both firms invested in technologies that increased the automation of manufacturing facilities (Guyana Chronicle, 2013).

PRODUCT UPGRADING	Product upgrading can include producing new and more highly demanded varieties or a better-quality rum (premiumization). *Example:* In 2015, building on the success of flavored rums in 2014, Dominican Republic rum exporters produced more varieties than the year before. Macorix launched an apple-flavored rum (Macorix Appletini) and a premium craft-spiced rum (Macorix Rebel). Similarly, Brugal launched a major line of flavored-infused white rums known as Fusion. These flavored rums have performed well due to their appeal to women and young people. They also offer the versatility of mixing with juices, sodas or as an ingredient in other cocktails. These products have been promoted extensively throughout social media and online marketing, coupled with tasting activities and events for small audiences (often organized with major retailers) (Euromonitor, 2016c) *Example:* In 2010, the National Association of Alcoholic Drinks and Liquors of Guatemala, with the support of the government, obtained the PDO "Ron de Guatemala", a crucial achievement for the upgrading trajectory of the country in the rum industry (Ron de Guatemala, 2012).
FUNCTIONAL UPGRADING	Entry into the distribution and marketing stage, especially through branding. Caribbean rum manufacturers invest strongly in marketing, mainly through cooperation and the technical assistance offered by state agencies (Pounder, 2010). *Example*: In 2016 Brugal & Co (Dominican Republic) led the sponsorship of a series of music concerts and events held throughout the year, which the company helped to promote. This upgrading allowed Brugal & Co to record a higher increase in its volume share than most of its rivals. In the same year, a redesigned limited-edition bottle was released by Ron Barceló (Dominican Republic) for its iconic rum brand; the illustration on the bottle's label was inspired by the Electric Paradise art and music festival, held in Cap Cana in December 2016 (Euromonitor, 2016d).
END-MARKET UPGRADING	Includes moving into more sophisticated markets whose consumers require better quality rums or a wider variety of flavored rums. *Example:* In 2008, Diageo was granted the exclusive distribution of the ultra-premium brand of the Guatemalan rum "Zacapa", and in 2011, Diageo started controlling 50% of the stakes of its rum manufacturing company (*Industrias Licoreras de Guatemala*). This allowed the company to significantly invest in branding and marketing and become more widely distributed, capturing a relevant share of the small ultra-premium category market. To illustrate, they starting hosting the "Zacapa room" tastings paired with top world chefs, as well as by showcasing the brand at prestigious art shows in the US (Webber, 2015). As a result, the country experienced major growth in rum exports by value and unit price, as a result of the access to new markets such as the US and Europe.

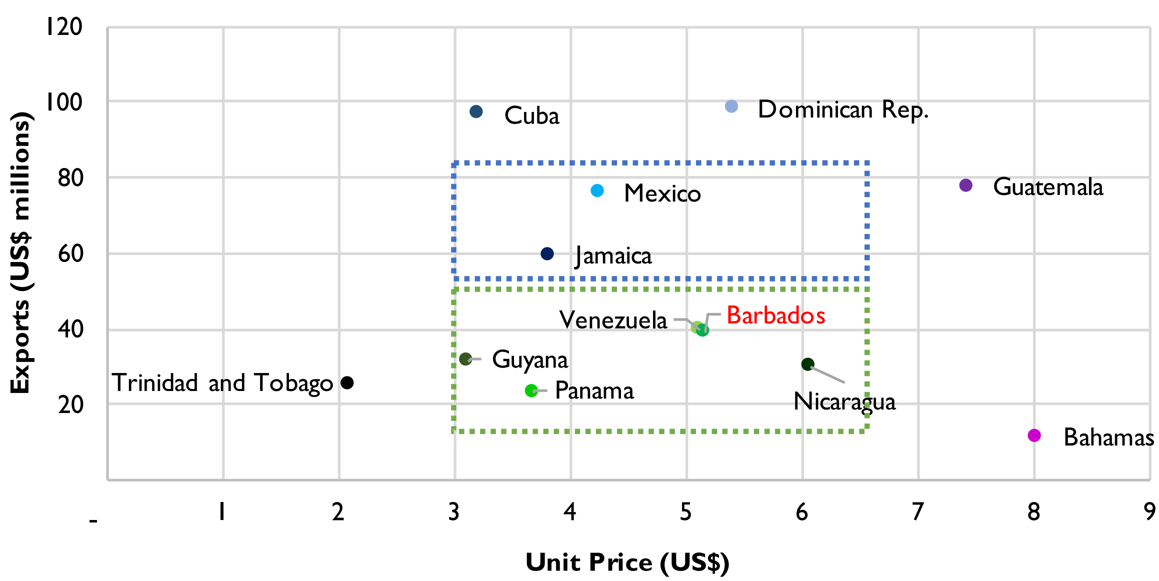
INTER-SECTORAL UPGRADING	Intersectoral upgrading entails moving into or creating strong linkages with other industries, namely, with the tourism industry. *Example:* In Barbados, the rum sector has important linkages to both the agriculture and tourism sectors. According to WIRSPA, in 2009 visitors to rum facilities increased by 100% since 2003. The Food, Rum and Wine Festival in Barbados is another hallmark of the importance of rum to the tourism marketing strategy (BPSTT, 2014).

Source: Authors

4.1. Case Studies

This section examines the upgrading experiences of Guatemala and the Dominican Republic. Each represents a successful case of upgrading trajectories in the industry and offers insights for Barbados on how to upgrade in the rum GVC. Guatemala is an interesting benchmark—its export unit price is the second highest among Caribbean countries, and it is the third largest exporter after Dominican Republic and Cuba (see Figure 7). Dominican Republic, on the other hand, exhibits a similar export unit price than Barbados; however, it accounts for the highest export value of all Caribbean countries in 2015.[12]

Figure 7. Top 10 Caribbean Rum Exporters by Value, Unit Price (US$) and Exports (US$ millions), 2015



Source: UN Comtrade, HS 220840, based on mirrored imports. Downloaded on April 25, 2017.

[12] Puerto Rico is excluded.

4.1.1. Guatemala

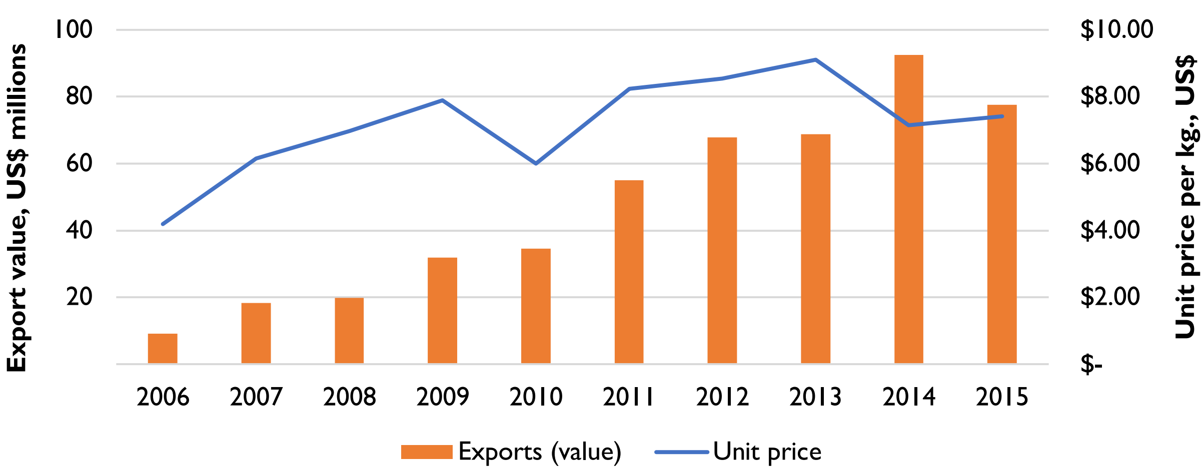
Guatemala's rum industry started in the early 20th century through the foundation of several family owned distilleries. Due to the significant contribution of the industry to the country's economic growth, the Guatemalan Government issued the Aging Act in the 1940s to force distillers to create reserves of aged spirits to guarantee the quality of their products.

The internationalization of the rum industry began around 1980, but it was not until 2010, after Diageo acquired Zacapa, that Guatemalan-branded rum entered American and European markets. During that period, lead local firms successfully developed the required infrastructure to access sophisticated markets and the duty-free business with premium rums (Revista M&T, 2008). The quality of Guatemalan rums is reflected in the unit price of its exports, which is the second highest value among the top 10 exporters (excluding EU nations) in 2015, after the US (UNComtrade, 2017b).

In 2015, rum exports reached US$78 million, allowing Guatemala to become the fourth major exporter in the world by value (excluding EU nations) (UNComtrade, 2017b). This gave the country a 5% share of the world market, 2 percentage points higher than Barbados. The country's top export markets are the US (16% of total exports), followed by Germany (15%), Italy (11%), Mexico (11%), and UK (9%) (UNComtrade, 2017b).

The Guatemalan rum industry experienced outstanding growth in recent years. Between 2006 and 2015, rum exports multiplied by a factor of roughly nine, growing at an annual average rate of 31%, the highest among the top 10 exporters (UNComtrade, 2017b). During this period, the unit price also grew from US$4.19 per kilogram to US$7.41; the variation of US$3,22 is the second highest increase from the top 10 exporters, after the US (see Figure 8).

Figure 8. Guatemala's Rum Exports by Value and Unit Price, US$ (2006 – 2015)



Source: UN Comtrade, HS 220840, based on mirrored imports. Downloaded on April 25, 2017.

A key characteristic of Guatemalan rum is that producers use sugarcane juice, known locally as "virgin sugarcane honey" as the primary input instead of molasses. Sugarcane juice is the liquid produced from the first press of ripened sugarcane; afterwards, it is heated, clarified, filtered and evaporated (Ron de Guatemala, 2012). One relevant aspect of Guatemala's rum industry is its long history of high productivity in sugarcane production. In 2014, the country performed as one of the top five sugarcane producing countries of the world in terms of yield, reaching 104 MT/ha, while Barbados' yield was just 17 MT/ha (FAOSTAT, 2017).

Guatemala's rum industry is primarily led by *Industrias Licoreras de Guatemala* (ILG), a private group of companies dedicated to the production, processing, distribution and marketing of fine aged rums and other high-quality spirits.[13] ILG was founded in 1914 by the Spanish Botran family after the fusion of several distilleries (Business Review Latin America, 2016). Currently, the distillery of ILG (Darsa) is the largest of the country and the pioneer in the elaboration of ultra-premium rums, including Botran and Zacapa. ILG controls every stage of the value chain through different companies, each dedicated to a particular step of rum production, from sugarcane production to global distribution and branding (Business Review Latin America, 2016). In addition, ILG has created and maintains high-quality standards for external providers (e.g. fertilizer, chemicals, machinery, bottles and labels) based on a ethical code that is shared by ILG representatives through training programs (Business Review Latin America, 2016).

Upgrading Trajectories and Policies

In recent decades, Guatemala's rum industry has enlarged its global range and improved its competitiveness through firm and industry-level efforts. Broadly, two upgrading trajectories can be observed: 1) *Product upgrading,* with the introduction of a wide new variety of rum products through new techniques and technologies; and 2) *End-market upgrading,* with an exclusive distribution and marketing agreement with a lead company. The following section explores the development of Guatemala's rum industry in greater detail, providing relevant details on government policy that supported the upgrading.

- **Product upgrading with the introduction of new varieties.** In 2015, ILG become the most active company in the country's industry in terms of new products, launching a limited-edition dark rum and a special blend of dark rum that has been aged 12 years. The total production volume of these rums is exported. In the same year, ILG also launched the first white aged rum in the world (Botrán Añejo Carta Blanca). Finally, the company was also active in the flavored category, where it launched Quezalteca Especial Rosa de Jamaica—with lemon lime soda in a glass bottle—and Venado Cubata Botrán in the Cimarrona flavor (Euromonitor, 2016c). These new products entail not only a product upgrading trajectory, but also a process upgrading trajectory since new aging techniques and blending technologies had to be incorporated to create the new products.

- **End-market upgrading with an exclusive distribution and marketing agreement with a lead company.** Guatemala's major growth in rum exports and access to demanding markets is mostly due to a 2008 distribution and marketing agreement between Diageo and ILG that granted Diageo the exclusive global distribution of the Zacapa brand outside Guatemala for three years. Since the end of that period, the global company holds a controlling stake (50%) in the Guatemalan rum producer, which allowed ILG to invest in the brand and become more widely distributed, capturing a relevant share of the small ultra-

[13] Industrias Licoreras de Guatemala consists of several companies that participate in the value chain, from Ingenio Tululá (dedicated to sugarcane production) to two bottling companies.

premium category market. In addition, under Diageo's tutelage, ILG has been further refining its offerings, adding a limited-edition reserve vintage annually since 2013 (Webber, 2015). This end-market upgrading had a great impact in Guatemala's positioning in the global market, particularly in Europe: from 2008 to 2013, branded rum exports to the EU multiplied by 3 approximately, from €72,556 to €310,302 (Eurostat, 2017).

Guatemala's current position in the rum GVC is the result of several firm level strategies, as well as government support. In 2010, the National Association of Alcoholic Drinks and Liquors of Guatemala, with the support of the government, obtained the PDO label (See box 5) "Ron de Guatemala".

In 2012, the registration was published in the Official Journal of the European Union, which recognized the PDO, becoming one of the first GI of spirits drinks from a not-EU country. This achievement has been crucial for the end-market upgrading trajectory of the country as well as the process upgrading—since the Administrative Body of "Ron de Guatemala" is now responsible for quality assurances, overseeing compliance with the processes and ensuring that the conditions are in place for production. As part of the control system, the Body also certifies and assures compliance with the following: a) origin, including the geographic indication, the crops, the raw material production processes, the Solera ageing system and the bottling aspects are all compliant with PDO standards for Ron de Guatemala; and b) Solera Classification System, which is the type of rum according to the PDO nomenclature for Ron de Guatemala at the point of destination (Ron de Guatemala, 2012). These certifications are developed to ensure that operations are conducted in accordance with standardized procedures, which suggests that the PDO was created not only to protect the product, but also to provide quality assurance and end-market upgrading opportunities.

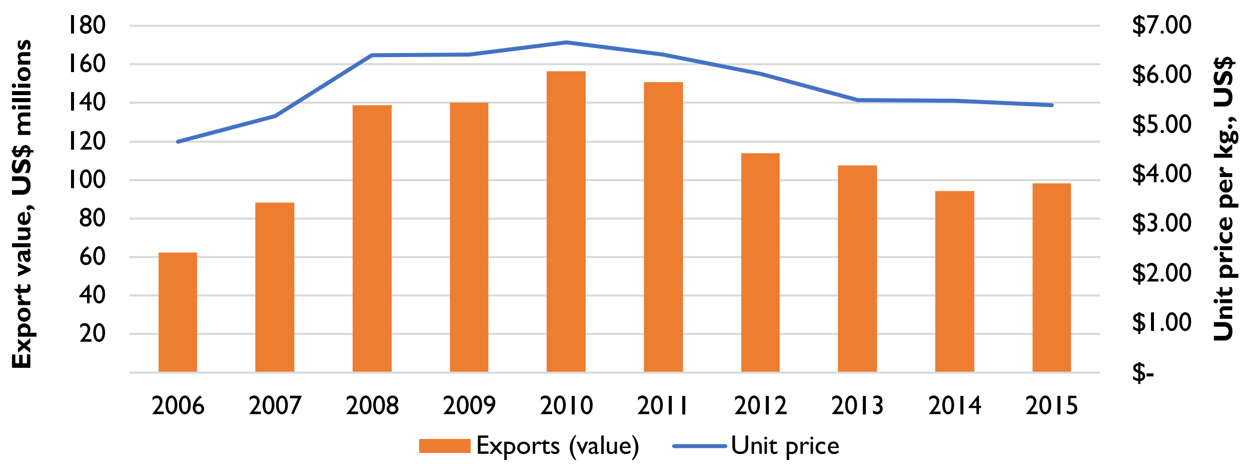
4.1.2. Dominican Republic

The rum manufacturing industry in the Dominican Republic started in the 18th century. The industry is a significant employer (1,500 direct positions), and produces around 52-58 million liters of the spirit annually (Soto, 2015). Much of the rum produced in the Dominican Republic is exported—between 2010 and 2014, official figures suggest the country exported around 60% annually on average. Currently, rum is the only spirits category with significant levels of local production destined for export (Soto, 2015).

The Dominican Republic entered the rum GVC in the 1980s through exports to the US. In the following decade, it expanded its network by entering the Spanish market (Brugal, 2012; Ron Barceló, 2017). In 2015, the country exported US$98 million, becoming the third major exporter in the world by value and accounting for 7% of the global market (excluding EU nations). As Figure 9 shows, rum exports grew at an annual average rate of 8% between 2006 and 2015; and the unit price per kilogram experienced 2% average annual growth (UNComtrade, 2017b). Thus, during this period, the unit price per kilogram grew from US$4.66 to US$5.39, always higher the world average unit price (UNComtrade, 2017b). Principal export markets for Dominican rum include the EU (specifically Spain, Italy and Germany), the US, Haiti and Chile, among others (Euromonitor, 2016d).

The positive trends are partially based on the fact that Dominican Republic´s rum industry managed to come out of Hurricane Sandy relatively unharmed, with no major damage reported, unlike Jamaica that experienced a 10% decline in production (The Business Year, 2013). In addition, the Dominican Republic derives its strong competitiveness in the rum industry from its rigorous distillation and ageing processes. Interestingly, Dominican rum differs from its Caribbean peers because of its purity and because less content of elements are released by the decomposition of the sugars in the manufacturing process (Domínguez, 2017).

Figure 9. Dominican Republic's Rum Exports by Value and Unit Price, 2006-2015



Source: UN Comtrade, HS 220840, based on mirrored imports. Downloaded on April 25, 2017.

The majority of the rum is produced by three companies: Beica (Ron Barceló), J. Armando Bermúdez & Co., and Brugal & Co. While Brugal & Co. leads rum production in terms of volume, Beica is a significant contributor to Dominican Republic's exports and winner of the "World's Best Rum" prize from the Chicago Beverage Tasting Institute, with a record 97 score out of 100 (The Business Year, 2013).

In 2013, Beica's exports exceeded 1.7 million cases, accounting for 75% of their production (Ron Barceló, 2017; The Business Year, 2013). The company exports to around 55 countries, Spain being the most important destination market, with a share of 53% of total international sales. In recent years, the company has experienced great success and dynamism, achieving the fourth position in the global rum market in terms of sales while switching from molasses to sugarcane juice as its primary rum input, leading to a unique product that is in line with the French-style '*rhum agricoles*' (Caribbean Journal, 2013; The Business Year, 2013).

Upgrading Trajectories and Policies

Similar to Guatemala, Dominican Republic's rum industry has enlarged its global range and improved its competitiveness as a result of firm and industry-level efforts. Broadly, two upgrading trajectories can be observed: 1) *Product upgrading,* with the introduction of premium rum products: 2) *Functional upgrading,* through brand marketing. The following section explores the development of the Dominican Republic's rum industry in greater detail, providing relevant details on government policy that supported upgrading.

- **Product upgrading with the introduction of premium products.** One of the most recent product developments of the Dominican Republic rum industry is the "Sibone 1920

Gran Reserva Familiar", from Bodegas Barceló (Beica). This rum premiered in late 2016 and its launch is in line with the premium rum on offer in the country, especially those of domestic origin. Another signal of the premiumization process experienced by Dominican Republic was already reveled by Brugal in 2013 with the launch of its first super premium rum "Ron Papá Andrés", valued at US$1,500 (Vora, 2015).

- **Functional upgrading through branding and marketing success.** Brugal & Co. led the sponsorship of a series of music concerts and events through 2016. These events were linked to the 40th anniversary celebration of the Extra Viejo brand, the first premium rum produced in the Dominican Republic. To commemorate the anniversary, a new presentation of the product was introduced featuring a handsome case, and this was highlighted during in-store promotions (Euromonitor, 2016d). In addition, Brugal's premium rum "Papá Andrés" was bottled in a heavy crystal decanter designed by the 2012 Oscar-nominated Javier Mariscal, that decorated the bottle with a pattern inspired by the colors of the Dominican Republic. The artist also illustrated the book accompanying the bottle that recounts the story of Papá Andrés and the history of Brugal (Vora, 2015). This upgrading allowed Brugal & Co to record a higher increase in its volume share than most of its rivals. Similar to Brugal & Co, Ron Barceló released a redesigned limited-edition bottle in the same time period for its iconic rum brand; the illustration on the bottle's label was inspired by the Electric Paradise art and music festival, held in Cap Cana in December 2016 (Euromonitor, 2016d).

In recent years, the Dominican Association of Rum Producers (ADOPRON) and the so-called 'rum cluster' have been especially active in seeking to promote greater export-oriented activity among manufacturers (Dominican Today, 2015).[14] The 'rum cluster's' main goal is increasing the industry competitiveness through quality assurance and standardization of processes (Dominican Today, 2015). From its inception to 2015, the 'rum cluster' has been working on the projects: i) design of a draft law to update the regulatory framework of the industry; ii) implementation of a spirits´ industry observatory; iii) development of a traceability system for the industry; iv) implementation of a training program for the cluster's members and the regulatory institutions of the spirits' industry; v) and design of a communication campaign for the PDO as a key component of the country brand strategy (CNC, 2015). These programs are currently being reviewed by the National Office of Industrial Property of Dominican Republic (ONAPI). To comply with the proposed PDO standard, rum producers must harvest the sugarcane, ferment, distill, and age the alcohol in oak barrels for a minimum of one year, all within the Dominican Republic (Ron Barceló, 2017).

The PDO is an important step for the development of the rum industry. In recent years, the country has been struggling with the smuggling of rum from Haiti as well as with unregulated production within the country (Soto, 2015). In addition to its fight against smuggling by the domestic market, the Dominican rum industry faces issues in the global market since some local brands do not meet the quality standards (Soto, 2015). Accordingly, producers have shown a notable interest in defending the national industry and the production processes to continue delivering the highest quality (Soto, 2015). The PDO will allow space for large and small producers to make the fermented, distilled and aged rum of 12 years in oak barrels in the Dominican Republic

[14] The 'rum cluster' is composed by all producers that meet the production characteristics of "Dominican Rum" and is supported by the National Council of Competitiveness and the Inter-American Development Bank.

according to previously established standards. This way, producers will be able to share more than 50 international markets (Soto, 2015).

4.2. Lessons Learned for Barbados

Rum has been a commodity of the Caribbean from as far back as the 17th century and, while the significant value-addition was historically based in refineries in Europe, firm-level efforts have enabled countries to incorporate many other stages of the value chain aside from sugarcane production or distilling the liquor.

The cases presented offer examples of how two countries have moved up the value chain. One of the most important upgrading that Guatemala and Dominican Republic have pursued is the development of national branding strategy. In both countries, rum manufacturers have been investing strongly in marketing and branding, with some form of cooperation or technical assistance offered by state agencies. As mentioned, most rum manufacturers deliberately display and emphasize the territorial location of their product, knowing that this attribute is just as likely to secure a sale (Pounder, 2010); thus, both Guatemalan and Dominican Republic rum brands relate to the country brand. The strength of having Caribbean-branded rum in the market is such to the extent that some companies not located in the Caribbean region have even gone as far as to label their rums with Caribbean addresses and lingo (Pounder, 2010).

Another lesson learned from the case studies is the opportunity of pursuing a GI under its most stringent version (PDO) to promote the uniqueness of the product and highlight the association between product and place of birth. In general, a PDO tends to achieve higher economic premiums compared to PGI products (Areté, 2013). Nonetheless, both Guatemala's and Dominican Republic´s upgrading trajectories suggest the PDO will only be successful if a national brand is established beforehand, highlighting the country of origin and the positive characteristics that are related to that location, such as relaxation, warmth and comfort. To illustrate, the PDO in Guatemala was approved in 2010; before that, both international sales and unit price were growing at a significant annual growth rate (45%) (UNComtrade, 2017b).

Lastly, the case studies suggest the importance of developing domestic inputs (molasses) and backward linkages with sugarcane production to create a singular country product that is functional to the both PDO and branding strategy.

5. Recommended Upgrading Trajectories for Barbados

Typical upgrading trajectories around the world in the agro-processing sector follow a linear path, in which once there is a stable and competitive production of the crop then the nation moves to the processing stages (manufacturing) of the chain (Fernandez-Stark et al., 2012; Lee et al., 2012). Barbados' participation in rum is no different with a steady supply of sugarcane precipitating rum manufacturing, though it occurred several centuries ago. Now, Barbados must maintain competitiveness in a shifting global landscape through the revitalization of production, improvements in marketing and the establishment of linkages into other industries (chain upgrading).

1. **Short Term Process Upgrading (Sugarcane and Molasses):** Barbados should focus on improving its production of sugarcane and molasses through the creation of competitive

processing capabilities and the planting of varieties of sugarcane that give the sucrose content needed for the rum industry. Current restructuring of the sugarcane industry is necessary given shifting trade dynamics and lowering revenue for bulk sugar exports. However, any revision in sugarcane policy must account for the importance of molasses in rum manufacturing and ensure a sufficient and stable supply for the high value rum industry. Rather than focusing on sugarcane harvesting and sugar packaging for niche markets, sugarcane should be seen as a byproduct for rum and produced as a way of capturing more value from the rum GVC. This is especially crucial given the rise in consumer demand for spirits that are closely tied to one geographic location.

2. **Medium Term Product Upgrading (Premiumization):** Barbados does not have rum supplies to compete on scale with large-scale rum suppliers, such as Bacardi. Instead of competition based on scale, the nation should continue to focus on improving rum quality to allow for higher degrees of premiumization. As consumers in developing and developed markets shift preferences to premium rum, Barbados has a strategic opportunity to increase participation by investing in the development and promotion of high-end rums, both through developing a national brand to highlight the historic relevance of rum and the continued development of new rum drinks, such as flavor infused rum. Barbados will have a greater success in premium quality rum markets versus large volume low cost rum production.

3. **Medium Term Function Upgrading (Branding):** The establishment of a national identity for rum as well as a national brand will help to differentiate Barbados's rum from others. While Barbados should continue to work with other Caribbean nations to develop and promote a regional label to protect Caribbean rum, further branding of Barbados's product is also crucial. Rum branding should focus on the strengths of the industry in Barbados, particularly around the historical legacy of production on the island. Mount Gay's position as the oldest continuing operating distillery in the world is one factor to exploit while building the national brand. Furthermore, historic stories around Barbados rum, such as its linkage to sailing and prominence in the George Washington administration, are other aspects to build upon in order to capture more value (Mount Vernon, 2017).

   Beyond branding at the local level, the rum industry needs to be further promoted on an international scale via participation in key rum and spirits expos, such as the Tales of the Cocktail and the Miami Rum Fest. Showcasing rum from the nation at these events will help to build awareness in the spirits industry. This should be a campaign of all rum producers in the nation and not limited to select producers. After promoting Barbados rum to actors in the spirits industry, a marketing campaign in major international and regional press and television outlets will help build consumer awareness of the history of rum production in Barbados and the high-quality product the country offers the global market.

4. **Medium-Long Term Chain Upgrading (Deepening Linkages with Tourism):** As tourism continues to be a major source of revenue, forging stronger linkages between industries will allow rum producers to increase sales to foreign visitors and build brand awareness. Building on established activities, such as tours at multiple distilleries, the rum industry should continue to develop itself as a tourist destination, partnering with both cruise tourists and foreign visitors to increase visitations to the country. Building distilleries into destinations with multiple experiences, such as the activities offered and planned at St. Nicholas Abbey represents one avenue of upgrading into tourism (see Box 7). This upgrading

requires the development of deeper experiences with the construction of hotels and restaurants at distilleries to provide a longer, more complete experience for tourists.

6. Appendix[15]

Table A- 1. Top Ten Rum Exporters by Value, 2006-2015 (US$, million)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
USA	72	94	89	141	399	451	447	518	437	347
Dominican Republic	62	88	139	140	156	151	114	108	94	98
Cuba	48	83	122	103	122	127	111	124	112	97
Guatemala	9	18	20	32	35	55	68	69	93	78
Mexico	51	44	59	56	93	68	67	35	41	76
Jamaica	62	54	58	47	49	51	59	59	57	60
Venezuela	105	84	131	42	44	43	36	32	30	39
Barbados	28	29	30	26	28	31	32	41	40	39
Guyana	16	15	14	15	24	26	29	35	38	31
Nicaragua	12	16	18	22	24	27	29	30	38	30
World	**1058**	**1189.5**	**1349**	**1230**	**1448**	**1599**	**1597**	**1637.5**	**1617**	**1455**

Source: UN Comtrade, HS 220840, based on mirror data. Downloaded on April 25, 2017.

Table A- 2. Top Molasses exporters by value (US$, million), 2006-2015

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
India	19	126	110	5	60	98	131	92	81	113
Thailand	68	59	106	84	70	80	162	105	70	60
Indonesia	66	51	104	89	96	87	55	84	150	59
Guatemala	49	53	45	58	55	65	37	35	24	58
Australia	54	26	43	38	22	57	35	29	22	41
El Salvador	15	22	14	17	28	24	30	38	38	33
Mexico	21	13	45	22	15	49	9	85	86	29
Nicaragua	2	9	11	23	31	18	11	22	29	23
Mozambique	2	4	1	9	9	17	12	13	13	22
Honduras	12	10	15	16	17	19	21	26	27	21
World	**597**	**587**	**857**	**714**	**689**	**771**	**756**	**863**	**807**	**678**

Source: UN Comtrade, HS 1703, based on mirrored data. Downloaded on April 25, 2017.

[15] Exports for rum exclude EU exporters who are not engaged in large scale rum manufacturing.

Table A- 3.Top Rum Importers by Value (US$, million), 2006-2015

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Germany	157	235	291	244	258	286	303	342	341	293
Spain	285	283	330	256	376	348	264	273	205	236
USA	51	63	77	84	80	95	110	114	120	124
United Kingdom	132	48	39	48	39	62	107	91	102	104
Canada	56	67	62	66	82	83	88	84	84	69
Italy	56	78	85	86	100	86	73	63	72	60
Netherlands	43	48	63	55	66	74	79	72	79	54
France	18	23	27	27	31	39	36	39	53	46
Belgium	13	18	21	21	23	31	25	32	36	30
Russian Federation	12	25	29	24	39	61	68	82	67	27
Chile	14	28	36	42	51	60	49	45	29	23
South Africa	15	16	17	19	12	14	12	10	8	6
World	**1058**	**1189**	**1349**	**1230**	**1448**	**1599**	**1597**	**1637**	**1617**	**1455**

Source: UN Comtrade, HS 220840, based on imports. Downloaded on April 25, 2017.

Table A- 4. Top Molasses Importers by Value (US$, million), 2006-2015

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
USA	144	109	115	154	106	140	175	151	145	131
Rep. of Korea	79	59	94	106	128	115	115	143	138	114
United Kingdom	51	57	97	75	80	85	106	129	99	81
Netherlands	41	46	69	49	41	46	42	53	55	35
France	27	36	50	42	32	46	34	49	41	33
Japan	24	21	21	21	30	28	21	28	24	29
Belgium	15	14	24	16	11	18	18	38	24	26
Other Asia, nes	19	20	34	25	31	40	24	20	29	25
South Africa	1	5	10	11	11	17	19	16	18	25
Ireland	16	16	18	22	17	15	20	31	25	20
World	**597**	**587**	**857**	**714**	**689**	**771**	**756**	**863**	**807**	**678**

Source: UN Comtrade, HS 1703, based on imports. Downloaded on April 25, 2017.

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