



Economic Contributions of the Food & Beverage Industry in Puerto Rico

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Executive Summary

Puerto Rico's food and beverage industry is a foundational segment of the island's economy and is interwoven into the activities of nearly every other sector. At first glance, its outsized importance to the economy is apparent; however, industry trends reveal realities that should influence future policy actions. This study evaluates and quantifies the food and beverage industry's role in Puerto Rico based on first-in-kind public and proprietary data analysis. This analysis supports the following takeaways regarding the importance of the sector to Puerto Rico's economy:

- The food and beverage industry is a significant spending category, constituting roughly one-fifth of retail sales and 15% of consumer spending.
- Food-related businesses are a major provider of jobs, employing upwards of 10% of Puerto Rico's workforce and showing strong growth in the face of negative labor trends across the island. The food and beverage industry's share of total employment has grown from 9.4% in 2000 to 13.6% in 2019.
- The industry is highly resilient to economic shocks, with food and beverage sales much less affected than those across the whole economy.
- Critical trends in the food and beverage industry have the potential to support growth and economic recovery.

Puerto Rico has unique characteristics and circumstances affecting its social and economic viability. *First*, there are limitations and barriers to economic activities and aid due to federal laws and territorial status. *Second*, the island has been impacted by a multitude of harsh economic forces – natural disasters, financial turbulence, population declines, and, most recently, the pandemic. *Third*, certain policy interventions have exacerbated negative outcomes for the island's most vulnerable residents.

As a result of agricultural and historical shifts detailed in the report, Puerto Rico is heavily dependent on imported goods to meet local food and beverage demand. As an industry largely dependent on importation, key trade trends further contextualize the role of food and beverage in Puerto Rico:

- Importation has shown consistent growth, with the per capita value of food and beverage imports exhibiting an average real increase of about 2.5% per year since 2003.

- Over the last two decades, the United States has consistently supplied three-quarters of Puerto Rico's food and beverage imports. In 2019, food and beverage imports from the U.S. totaled over \$6.5 billion.
- Puerto Rico is one of the United States' top destinations for food and beverage commodities in the Western Hemisphere, surpassed in most categories only by Canada and Mexico.

Despite many positive and consistent contributions, the analysis identifies several food and beverage sector trends that warrant concern:

- Over the last decade, the price of food and beverage goods in Puerto Rico has grown nearly twice as fast as other consumer prices in general, necessitating shifts in consumer spending and exposing residents to increasing food insecurity.
- With long-term downward trends in local food and beverage production, residents' nutritional needs are increasingly vulnerable to both the island's economic performance and the ebbs and flows of international trade.
- As evidenced by recent natural disasters, the already-limited local production is easily disrupted and provides little safety-net during difficult times.

This study highlights key areas ripe for policy discussions and subsequent reforms, efforts necessary to bolster food security and affordability and address critical socioeconomic factors related to the industry. These include:

- ***Modernization of existing food-aid programs.*** Puerto Rico requires a new approach to nutrition policy that considers its high poverty, limited local food production, and demonstrated vulnerability to food insecurity.
- ***Implementation of programs to enhance the volume and resiliency of local food production.*** Such programs should focus on goods and processes that effectively alleviate some of the island's reliance on imports and are resilient to natural disasters.
- ***Research into the long-term health impacts of food security issues in Puerto Rico.*** With poverty and food security levels double those of even the most challenged U.S. states, Puerto Ricans are at risk of adverse health outcomes that decrease quality-of-life and increase the burden on overstretched health services. A more in-depth analysis of these challenges can guide public health approaches and ensure that food-aid programs provide proper nutrition to the most at-risk residents.

Puerto Rico Food and Beverage Fast Facts

(Based on the most recent available data)

Spending & Taxation

- Consumers spent approximately 13.3% of their disposable income on food and beverage goods in 2019, a total of \$9.1 billion.
- Food and beverage-related categories made up approximately 17.1% of total retail sales in 2019.
- In 2019, Agriculture and Retail Food Sales alone contributed \$63 million in tax revenue, or 2.3% of total tax revenues for the year.

Employment

- Nearly 13% of all workers, approximately 135,000 people, are employed in the food and beverage industry.
- Employment related to food and beverage activity was responsible for approximately \$2.2 billion in total wages in 2019, 12% of the \$18.5 billion in total non-government wages.
- In 2019, average weekly wages for the sector were approximately \$317, or \$16,475 yearly for a full-time employee, 22% higher than median per capita income.

Imports & Exports

- Food and beverage imports from the U.S. totaled over \$6.5 billion in 2019.
- Food and beverage goods from the U.S. made up approximately three-quarters of all imported foods to the island.
- Exports of food and beverage goods constituted about \$1 billion of Puerto Rico's \$20 billion in total exports in 2019.

Introduction

Puerto Rico's food and beverage industry is one of the most central and vital parts of Puerto Rico's economy. It is a steadfast contributor to its economic resilience and a key barometer of market trends. As one of the most populous entities in the Caribbean region, Puerto Rico plays a significant role in domestic and international trade. With outsized importance, the industry is a mirror to the health and nature of Puerto Rico's economy as a whole.

Over the last two decades, Puerto Rico has faced numerous economic challenges, ranging from the local effects of natural disaster and a long-running debt crisis, to global economic contraction and an ongoing pandemic. The negative economic effects of these challenges are compounded by ongoing population decline and labor market contraction. As such, future policy decisions must lead to ensuring long-term economic stability and returning Puerto Rico to a growth trajectory.

As a United States territory, Puerto Rico finds itself in a unique situation compared to that of sovereign nations and U.S. states. Able to leverage a close, dependent relationship with the U.S. but limited in its ability to independently control macroeconomic policy, effective decision-making requires specific attention to the political and socioeconomic realities on the island.

Throughout this study, both public and proprietary data is used to develop a robust economic analysis of the food and beverage industry in Puerto Rico. The impacts of the industry, both on the local economy and on the broader American marketplace, are quantified. These trends and statistics are then used as the basis for detailed, sound economic arguments, which can be further applied to public policy proposals.

Local Market Environment

The importance of the food and beverage industry within Puerto Rico's economy cannot be overstated. Constituting roughly one-fifth of all retail sales and highly resilient to economic shocks, the industry is a major spending category for the island's consumers. The multitude of food-related businesses are a major provider of jobs, employing upwards of 10% of Puerto Rico's workforce, and showing strong growth despite ongoing labor contractions. In recent years, growth in the price of food and beverage goods has noticeably outpaced that of consumer prices in general, exposing residents to food security concerns that are potentially compounded by ongoing negative macroeconomic circumstances.

A. Food & Beverage Industry Overview

Providing the essential ingredients of life to a population of over three million, Puerto Rico's food and beverage industry is an integral sector of the island's economy. A diverse set of firms make up the food and beverage sector, encompassing entities that produce goods – *e.g.*, agriculture, food, and beverage manufacturing – and entities that distribute those goods to retailers and consumers as a primary business – *e.g.*, wholesalers, grocery stores and other food retailers, along with restaurants, bars, and related food services.

Puerto Rico's food and beverage industry reaches even further. Indeed, it is interwoven with the activities of many other industries, including general merchandise stores, hospitality, entertainment, and other outlets that sell or serve food. Delivering these goods involves a complex supply chain, much of which incorporates modalities and equipment specifically designed for foodstuffs. Altogether, the industry touches almost every aspect of life on the island and directly and indirectly employs well over 100,000 Puerto Ricans, roughly 13% of the total labor force.

Like many other islands, Puerto Rico relies on imports to meet the vast majority of its food and beverage needs. Food and beverage production on the island itself is minimal: agricultural activity on the island is low, constituting less than 1% of GDP.¹ As a result, Puerto Rico relies on U.S. and foreign goods for the majority of its food and beverage consumption.

To appreciate the full scope and impact of Puerto Rico's food and beverage industry, it must be analyzed in relation to unique macroeconomic trends such as steady population decline, shrinking workforce participation rates, and general economic contraction. The interaction of these trends with the food and beverage industry is further detailed below.

B. Consumer Consumption & Prices

Food and beverage products are essential goods with demand across every consumer household. Spending on food and beverage goods is one of the last things consumers cut back on during hard times.² Given Puerto Rico's ongoing economic turbulence and the resulting financial vulnerability of a large swath of residents, recent trends in both prices and consumption provide essential context for an assessment of the island's food and beverage industry.

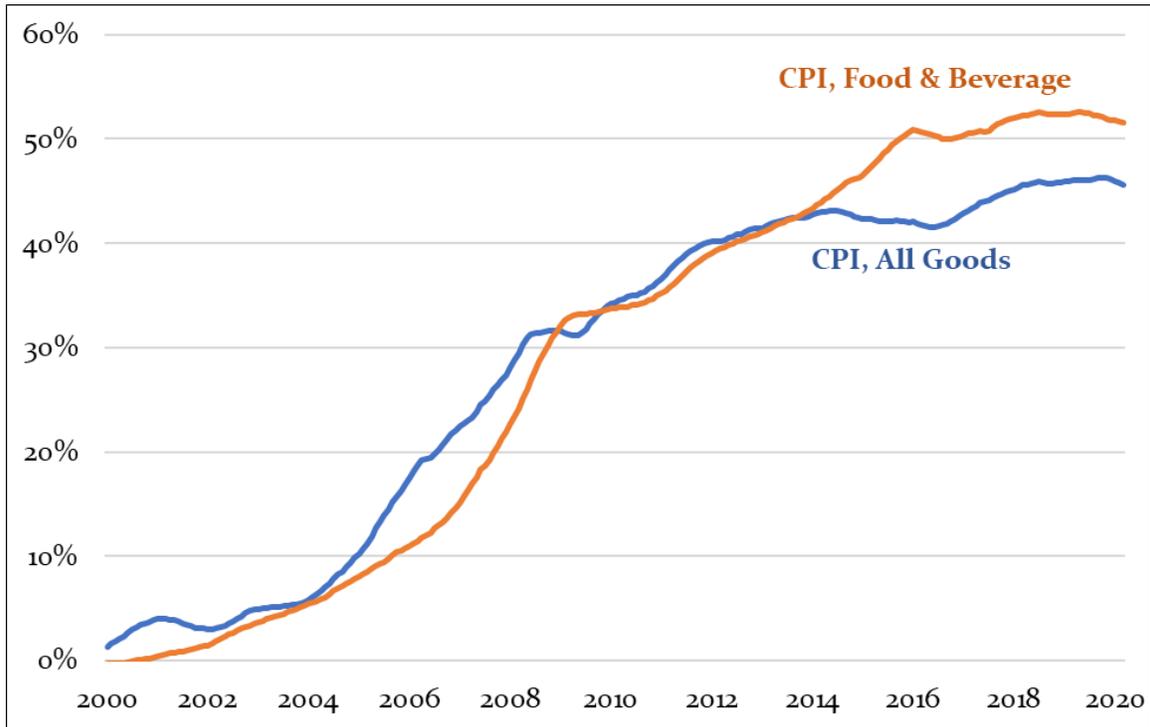
In 2019, Puerto Rican consumers spent approximately 13.3% of their disposable income on food and beverage goods. Overall consumer spending on food and beverage totaled \$9.1 billion, or about \$3,540 per capita. Figure 1 details total and per capita food consumption, and food consumption as a percent of total consumer spending, over the last decade.

Figure 1: Total and Per Capita Consumption (Unadjusted)³

Year	Total (Millions)	Food (Millions)	Food as Pct. of Total	Food Consumption Per Capita
2010	\$56,784	\$8,500	15.0%	\$2,284
2011	\$58,155	\$8,718	15.0%	\$2,370
2012	\$60,897	\$8,911	14.6%	\$2,452
2013	\$62,478	\$9,535	15.3%	\$2,654
2014	\$61,899	\$9,209	14.9%	\$2,605
2015	\$61,641	\$9,401	15.3%	\$2,707
2016	\$60,979	\$8,811	14.4%	\$2,586
2017	\$62,454	\$9,068	14.5%	\$2,727
2018	\$64,849	\$8,994	13.9%	\$2,817
2019	\$68,657	\$9,134	13.3%	\$2,860

The data appear to show that spending on food, as a percentage of total consumption, is decreasing. However, when comparing⁴ the growth in the cost of food versus that of consumer prices as whole,⁵ a different picture emerges. In general, the growth in the price of foodstuffs in Puerto Rico has far outpaced that of consumer goods as a whole. Since 2010, prices for food and beverages have grown approximately 14%, close to double the 8% growth seen in overall consumer prices. To compare, U.S. food and beverage prices have grown at nearly the same pace as overall consumer prices over the same time period.⁶ Food and consumer price trends in Puerto Rico are depicted in Figure 2.

Figure 2: Consumer Price Index, Growth Since 1999, 12 Month Moving Average⁷



As a result of this trend, consumers are spending even more on food and beverages. While some consumers may be able to reduce their food expenditures via the omission of certain products and the substitution of lower-priced goods,⁸ cost-sensitive and lower-income consumers must allocate an ever-increasing share of their disposable income to food and beverages. Coupled with ongoing economic turbulence on the island, this noticeable increase in the relative cost of foodstuffs has the potential to compound nutritional and food security issues in Puerto Rico. Already suffering from long-running⁹ food security issues that have been exacerbated both by natural disaster¹⁰ and economic instability, Puerto Rico also faces a new set of food security challenges as a consequence of the COVID-19 pandemic.¹¹

For low-income and at-risk populations, the impacts of these intertwining factors are often the most profound.¹² Ranging from a shift in diets towards staples and away from more complex and nutritious foods, to hunger and irregular caloric intake, these food insecurities lead to measurable negative health outcomes.¹³ With approximately 44% of its residents living in poverty,¹⁴ Puerto Rico is particularly vulnerable to the long-run consequences of this slow decline in the affordability of food.

Methodology

This section aims to provide an overview of our data sources and analytical processes. Also discussed are a number of data-related challenges and the solutions and assumptions used to account for them in our report.

A. Data Challenges & Solutions

Over the course of our analysis, we encountered a number of interesting challenges regarding the availability, recency, and reliability of publicly available data pertinent to an analysis of Puerto Rico's food and beverage industry. Thanks to Puerto Rico's liminal status, operating in some contexts as a de facto nation and in others as a de facto U.S. state, data aggregation and reporting practices are a patchwork of U.S. processes and ones managed by the Puerto Rican government.

In a few key contexts, Puerto Rican data is available in the same form as that of U.S. states. Chief among these is international trade information, which is provided via the United States Census Bureau's USATrade system.⁷¹ Other data available from primary U.S. sources include occupational statistics from the Bureau of Labor Statistics,⁷² and other general macroeconomic statistics, which are discussed in relevant sections of this methodological overview.

Outside of the information obtained from U.S. databases, our report incorporates data obtained from several Puerto Rican government agencies. The form, availability, and clarity of this data varies greatly. The availability of even some of the most basic economic data, such as GDP,⁷³ has only recently been brought up to international standards.

Puerto Rico has in recent years been working to streamline and centralize the availability of government data, including the establishment of the Puerto Rico Open Data Interconnection Portal.⁷⁴ Despite the significant progress made, those datasets that have been made available in machine-readable formats are sometimes sporadically updated and are often provided in aggregated forms that lack the granularity available from the individual agencies that collect them.

In a few contexts, including labor data available from Puerto Rico's Department of Labor and Human Resources and food consumption data, the most granular data was available only via yearly PDF reports. Using a combination of programmatic conversion and manual data entry, information from tables contained in these reports was converted to a machine-readable format such that it could be used in relevant analyses and to validate data from

ENDNOTES

- ¹ See Gross Product and Gross Domestic Product By Major Industrial Sector, Puerto Rico Planning Board, Program of Economic and Social Planning, Subprogram of Economic Analysis, 2019, <http://jp.pr.gov/Econom%C3%ADa/Informe>.
- ² See, for example, How does consumer spending change during boom, recession, and recovery?, U.S. Bureau of Labor Statistics, June 2014, <https://www.bls.gov/opub/btn/volume-3/pdf/how-does-consumer-spending-change-during-boom-recession-and-recovery.pdf>
- ³ See Personal Consumption Expenditures By Major Type Of Product, Puerto Rico Planning Board, Program of Economic and Social Planning, Subprogram of Economic Analysis, 2019, <http://jp.pr.gov/Econom%C3%ADa/Informe>.
- ⁴ See Consumer Price Indices, Puerto Rico Department of Labor, August 2020, <http://www.mercadolaboral.pr.gov/>
- ⁵ These consumer price indices track the price of a predetermined set of goods across time and are published for a number of different sets of goods, including “food and beverage.” An in-depth discussion of Consumer Price Indices can be found in the Methodology section.
- ⁶ See the Consumer Price Indices for All Items and U.S. Food and Beverages, as maintained by the U.S. Bureau of Labor Statistics, <https://www.bls.gov/cpi/>
- ⁷ See Consumer Price Indices, Puerto Rico Department of Labor, August 2020, <http://www.mercadolaboral.pr.gov/>
- ⁸ See, for example, The impact of food and economic crises on diet and nutrition, Dimova et. al., The Journal of Development Studies, 2014, http://conference.iza.org/conference_files/FutureOfLabor_2013/gang_i109.pdf
- ⁹ For a discussion of recent food security issues in Puerto Rico, see Food Security in Puerto Rico: Vulnerable Food Supply, American Society for Nutrition, Sep 2014, <https://nutrition.org/food-security-puerto-rico-vulnerable-food-supply/> and Food Security in Puerto Rico, Puerto Rico Institute of Statistics, 2019, <https://estadisticas.pr/files/Comunicados/Seguridad%20Alimentaria%20en%20Puerto%20Rico%20-%20Final%20%28300519%29.pdf>
- ¹⁰ For a high-level overview of Hurricane Maria’s long-term effects, see The facts: Hurricane Maria's effect on Puerto Rico, Mercy Corps, 2020, <https://www.mercycorps.org/blog/quick-facts-hurricane-maria-puerto-rico>
- ¹¹ For some recent discussions, see, 'Mamá, I'm Still Hungry': In Puerto Rico, Child Hunger Becomes A Flashpoint, NPR, May 2020, <https://www.nbcnews.com/news/latino/coronavirus-worsens-food-insecurity-puerto-rico-amid-looming-loss-federal-n1241422> and Coronavirus worsens food insecurity in Puerto Rico, NBC News, Sep 2020, <https://www.npr.org/2020/05/13/854734386/mam-im-still-hungry-in-puerto-rico-child-hunger-becomes-a-flashpoint>
- ¹² See Impact of the Financial and Economic Crisis on Nutrition – Policy and Programme Responses , UN Food and Agriculture Organization, 2010 <http://www.fao.org/ag/agn/nutrition/docs/Impact%20of%20the%20financial%20and%20economic%20crisis%20on%20nutrition.pdf>
- ¹³ See Food Insecurity and Health Outcomes, Craig Gundersen and James Ziliak, Health Affairs, November 2015, <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2015.0645>.

¹⁴ See Puerto Rico Community Survey, 2018 5-Year Estimates, U.S. Census Bureau, <http://data.census.gov/>.

¹⁵ See Retail Sales, Puerto Rico Exports and Trade Company, as of July 2020, <http://jp.pr.gov/Econom%C3%ADa/Informe>

¹⁶ In 2016, the methodology used to collect retail sales data was revised by Economic Development Bank to better align with North American Industry Classification System. This restructuring of categories leads to a disconnect between aggregate food & beverage retail sales at the time of the change that cannot be reconciled using available data. As such, retail sales before and after October of 2016 cannot be directly compared, and figures from before the change are best used to analyze trends and not as accurate quantities. More information regarding the 2016 restructuring of retail sales is available in the Methodology section.

¹⁷ See Retail Sales, Puerto Rico Exports and Trade Company, as of July 2020, <http://jp.pr.gov/Econom%C3%ADa/Informe>

¹⁸ Calculated using Retail Sales, Puerto Rico Exports and Trade Company, as of July 2020, <http://jp.pr.gov/Econom%C3%ADa/Informe>

¹⁹ Calculated using Retail Sales, Puerto Rico Exports and Trade Company, as of July 2020, <http://jp.pr.gov/Econom%C3%ADa/Informe>

²⁰ Calculated using annual employment data from the U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages, <https://www.bls.gov/cew/>

²¹ For population figures, see Population, Total for Puerto Rico, World Bank, Sep 2020, <https://fred.stlouisfed.org/series/POPTOTPRA647NWDB>. For additional discussion, see Puerto Rico's population declined sharply after hurricanes Maria and Irma, Pew Research Center, July 2019, <https://www.pewresearch.org/fact-tank/2019/07/26/puerto-rico-population-2018/> and The Causes and Consequences of Puerto Rico's Declining Population, Federal Reserve Bank of New York, 2014, https://www.newyorkfed.org/medialibrary/media/research/current_issues/ci20-4.pdf

²² See Local Area Unemployment Statistics, Puerto Rico, Bureau of Labor Statistics, obtained Sep 2020, <https://data.bls.gov/timeseries/LASST720000000000006>

²³ Calculated using annual employment data from the U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages, <https://www.bls.gov/cew/>

²⁴ For a discussion of our adjustment methods, please see the Methodology section.

²⁵ Calculated using 2015-2019 American Community Survey 5-Year Estimates, <https://www.census.gov/programs-surveys/acs/>

²⁶ Calculated using annual employment data from the U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages, <https://www.bls.gov/cew/>

²⁷ Calculated using annual employment data from the U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages, <https://www.bls.gov/cew/>

²⁸ See An Island in Crisis? A Statistical Portrait of Recent Puerto Rican Migration and Socioeconomic Outcomes between 2005 and 2015, U.S. Census Bureau, Apr 2017, <https://www.census.gov/library/working-papers/2017/demo/SEHSD-WP2017-21.html>

²⁹ See The Causes and Consequences of Puerto Rico's Declining Population, Federal Reserve Bank of New York, 2014, https://www.newyorkfed.org/medialibrary/media/research/current_issues/ci20-4.pdf

³⁰ See Distribution of Sales and Use Tax by NAICS Industry, Puerto Rico Department of Finance, May 2020, <http://www.hacienda.pr.gov/inversionistas/estadisticas-y-recaudos-statistics-and-revenues/>

³¹ Id.

³² Calculated using Food Consumption Tables, Puerto Rico Department of Agriculture, Various-2017, <https://estadisticas.pr/en/inventario-de-estadisticas/tablas-de-consumo-de-alimentos>

³³ Id.

³⁴ Calculated using External Trade Databases, Puerto Rico Institute of Statistics, October 2020, <http://apps.estadisticas.pr/iepr/Publicaciones/Proyectosespeciales/ComercioExterno.aspx>

³⁵ Id.

³⁶ Id.

³⁷ Calculated using External Trade Databases, Puerto Rico Institute of Statistics, October 2020, <http://apps.estadisticas.pr/iepr/Publicaciones/Proyectosespeciales/ComercioExterno.aspx> and U.S. Import and Export Merchandise Trade Statistics, U.S. Census Bureau, obtained October 2020, <http://usatrade.census.gov/>

³⁸ Calculated using Import and Export Merchandise Trade Statistics, U.S. Census Bureau, obtained October 2020, <http://usatrade.census.gov/>

³⁹ As discussed previously, since by-state import data to Puerto Rico is not directly available, we list for each of the following categories a ranked list of the top exporting states for each type of commodity. These rankings are provided both for exports specifically to Central American and the Caribbean, and for total international exports. While these rankings do not necessarily reflect the exact proportional makeup of the states exporting those goods to Puerto Rico, the ranking provides meaningful insights as to which U.S. states are potentially most impacted by Puerto Rico's importation of those commodities.

⁴⁰ Includes HS Code 0207. All figures calculated using External Trade Databases, Puerto Rico Institute of Statistics, October 2020, <http://apps.estadisticas.pr/iepr/Publicaciones/Proyectosespeciales/ComercioExterno.aspx> and U.S. Import and Export Merchandise Trade Statistics, U.S. Census Bureau, obtained October 2020, <http://usatrade.census.gov/>

⁴¹ Includes HS Code 0201 & 0202. All figures calculated using External Trade Databases, Puerto Rico Institute of Statistics, October 2020, <http://apps.estadisticas.pr/iepr/Publicaciones/Proyectosespeciales/ComercioExterno.aspx> and U.S. Import and Export Merchandise Trade Statistics, U.S. Census Bureau, obtained October 2020, <http://usatrade.census.gov/>

⁴² Includes HS Code 0406. All figures calculated using External Trade Databases, Puerto Rico Institute of Statistics, October 2020, <http://apps.estadisticas.pr/iepr/Publicaciones/Proyectosespeciales/ComercioExterno.aspx> and U.S. Import and Export Merchandise Trade Statistics, U.S. Census Bureau, obtained October 2020, <http://usatrade.census.gov/>

⁴³ Figures in adjusted 2019 dollars.

⁴⁴ Includes HS Code 0203. All figures calculated using External Trade Databases, Puerto Rico Institute of Statistics, October 2020,

<http://apps.estadisticas.pr/iepr/Publicaciones/Proyectosespeciales/ComercioExterno.aspx> and U.S. Import and Export Merchandise Trade Statistics, U.S. Census Bureau, obtained October 2020, <http://usatrade.census.gov/>

⁴⁵ Includes HS Codes 1701 & 1702. All figures calculated using External Trade Databases, Puerto Rico Institute of Statistics, October 2020, <http://apps.estadisticas.pr/iepr/Publicaciones/Proyectosespeciales/ComercioExterno.aspx> and U.S. Import and Export Merchandise Trade Statistics, U.S. Census Bureau, obtained October 2020, <http://usatrade.census.gov/>

⁴⁶ See https://www.researchgate.net/publication/328555716_Overview_of_sugar_production_in_Latin_America

⁴⁷ See <https://sugaralliance.org/where-is-sugar-produced> and <https://www.ers.usda.gov/topics/crops/sugar-sweeteners/background.aspx>

⁴⁸ Includes HS Code 1006. All figures calculated using External Trade Databases, Puerto Rico Institute of Statistics, October 2020, <http://apps.estadisticas.pr/iepr/Publicaciones/Proyectosespeciales/ComercioExterno.aspx> and U.S. Import and Export Merchandise Trade Statistics, U.S. Census Bureau, obtained October 2020, <http://usatrade.census.gov/>

⁴⁹ See <https://www.ers.usda.gov/topics/crops/rice/rice-sector-at-a-glance/>

⁵⁰ Includes HS Code 0407 & 0408. All figures calculated using External Trade Databases, Puerto Rico Institute of Statistics, October 2020, <http://apps.estadisticas.pr/iepr/Publicaciones/Proyectosespeciales/ComercioExterno.aspx> and U.S. Import and Export Merchandise Trade Statistics, U.S. Census Bureau, obtained October 2020, <http://usatrade.census.gov/>

⁵¹ Calculated using External Trade Databases, Puerto Rico Institute of Statistics, October 2020, <http://apps.estadisticas.pr/iepr/Publicaciones/Proyectosespeciales/ComercioExterno.aspx>

⁵² Id.

⁵³ Id.

⁵⁴ Id.

⁵⁵ Id.

⁵⁶ See Income and Poverty tables, U.S. Census Bureau, 2019, <https://www.census.gov/data/tables/2020/demo/income-poverty/p60-270.html>

⁵⁷ For U.S. states, see USDA, Economic Research Service, using data from the December 2019 Current Population Survey Food Security Supplement, 2019, <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/> for U.S. states; For Puerto Rico, see Seguridad Alimentaria, Puerto Rico Institute of Statistics, 2015, <https://estadisticas.pr/files/Publicaciones/Seguridad%20Alimentaria%20en%20Puerto%20Rico%20-%20Final%20%28300519%29.pdf>

⁵⁸ See Poverty in Puerto Rico, U.S. Census Bureau, 2019, <https://www.census.gov/library/stories/2019/09/puerto-rico-outmigration-increases-poverty-declines.html>

⁵⁹ See Food Security in Puerto Rico, Puerto Rico Institute of Statistics, 2015, <https://estadisticas.pr/files/Publicaciones/Seguridad%20Alimentaria%20en%20Puerto%20Rico%20-%20Final%20%28300519%29.pdf>

⁶⁰ Calculated as the average median income per household between 2014 and 2018, U.S. Census Bureau, 2019, https://www2.census.gov/programs-surveys/acs/summary_file/2019/

⁶¹ See U.S. Census Bureau, <https://www.census.gov/newsroom/press-releases/2014/cb14-17.html>

⁶² See Land Use, Conservation, Forestry, and Agriculture in Puerto Rico, William Gould, et al., *Forests (8)7*, 2017, 242.

⁶³ For a recent survey on the agricultural sector of Puerto Rico, see the U.S. Department of Agriculture's National Agricultural Statistics Service's (NASS) 2018 Census of Agriculture data for Puerto Rico.

⁶⁴ See Food Autonomy is Impossible in Puerto Rico, September, 2020, https://www.theweeklyjournal.com/business/food-autonomy-is-impossible-in-puerto-rico/article_2622ff42-f22d-11ea-a158-d71aa4411364.html

⁶⁵ For an analysis of the economic value of agricultural damage after Hurricane Maria, see Hurricane Maria's Impacts on Puerto Rican Farmers, October 2018, https://www.researchgate.net/publication/333204111_Hurricane_Maria's_Impacts_on_Puerto_Rican_Farmers_Experience_Challenges_and_Perceptions

⁶⁶ For a thorough review of the potential climate change impact on agriculture in Puerto Rico, see Strengthen the Supply Chain in the Face of Climate Change, Dr. Myrna Comas Pagan in *Harvard Business Review*, 2019, <https://myrnacomas.com/2019/01/22/publicaciones-arbitradas/>

⁶⁷ See, for example, Food Insecurity and Cognitive Function in Puerto Rican Adults, Xiang Gao, et al., <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2667463/>

⁶⁸ See High prevalence of overweight and obesity among a representative sample of Puerto Rican children, Elías-Boneta, et al., 2015, [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4358900/#:~:text=The%20obesity%20prevalence%20in%20PR,Hispanics%2022.6%25\)%20%5B38%5D](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4358900/#:~:text=The%20obesity%20prevalence%20in%20PR,Hispanics%2022.6%25)%20%5B38%5D)

⁶⁹ See Health conditions and lifestyle risk factors of adults living in Puerto Rico: a cross-sectional study
Josiemar Mattei, et al., 2018, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5898045/>

⁷⁰ See The Medical Care Costs of Obesity: An Instrumental Variables Approach, John Cawley and Chad Meyerhoefer, 2012, *Journal of Health Economics* 37(1), 219–230.

⁷¹ For more information regarding the U.S. Census Bureau's USATrade portal, see <https://usatrade.census.gov/>

⁷² For more information regarding the U.S. Bureau of Labor Statistics data series, see <https://www.bls.gov/bls/overview.htm>

⁷³ See, for example, Prototype Economic Statistics for Puerto Rico, 2012-2017, U.S. Bureau of Economic Analysis, Oct 2019, <https://www.bea.gov/news/2019/prototype-economic-statistics-puerto-rico-2012-2017>

⁷⁴ Available at <https://data.pr.gov/en/>

⁷⁵ For an overview, see External Trade Statistics Methodology, Puerto Rico Institute of Statistics, <http://apps.estadisticas.pr/iepr/LinkClick.aspx?fileticket=IRg5dXzjkm4%3d&tabid=277>

⁷⁶ See External Trade Databases, Puerto Rico Institute of Statistics, October 2020, <http://apps.estadisticas.pr/iepr/Publicaciones/Proyectosespeciales/ComercioExterno.aspx>

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⁷⁸ For more information on the distinction between HS and Schedule B, see The Harmonized System, export.gov, Feb 2013, https://2016.export.gov/logistics/eg_main_018119.asp

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⁸⁰ See Retail Sales, Puerto Rico Exports and Trade Company, as of July 2020, <http://jp.pr.gov/Econom%C3%ADa/Informe>

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⁸³ See Local Area Unemployment Statistics, Puerto Rico, Bureau of Labor Statistics, obtained Sep 2020, <https://data.bls.gov/timeseries/LASST7200000000000006>

⁸⁴ See CPI-All Urban Consumers, U.S. Bureau of Labor Statistics, <https://www.bls.gov/cpi/>

⁸⁵ See Consumer Price Indices, Puerto Rico Department of Labor, August 2020, <http://www.mercadolaboral.pr.gov/>

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