Texas A&M Transportation Institute

Potential Transportation Impacts of Expanded U.S.-Cuba Trade

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Potential transportation impacts of expanded U.S.-Cuba trade

U.S. trade with Cuba has been strictly regulated since 1960. This study aimed to identify the potential trade and transportation impacts of a more open U.S.-Cuba trade relationship. Specifically, the study aimed to examine and better understand the impact of an open U.S.-Cuba relationship on Texas' sea ports and the infrastructure linking those ports to various regions of the state. This study was, however, prepared prior to the current Presidential administration's establishment of policy related to trade with Cuba.

- Although strictly limited, U.S. exports to Cuba totaled about $299 million in 2014, 95 percent of which consisted of agricultural products. For the most part, U.S. imports from Cuba are prohibited. In 2014, the United States supplied only 3 percent of Cuba's total imports.
- Cuba's close proximity to the U.S. would translate to low transportation costs and quick delivery times for goods; U.S. production efficiencies make this especially true for agricultural exports, the value of which could reach $18.6 million annually for Texas, creating a total economic impact of $42.9 million for the state.
- Texas's agricultural commodities most likely to benefit from an easing of trade restrictions with Cuba are: poultry meats ($10 million), grain ($6.1 million), beef and meat products ($0.5 million), dairy ($0.3 million), and other products such as animal feed, cotton, and potatoes ($1.7 million).
- The trade possibilities for non-agricultural products are less certain, but experts believe the potential is greatest for: oil and gas well supplies, resins, software, telecommunications, and pharmaceuticals.
- Traditionally, Texas seaports play an important role in trade with Cuba, having handled 18 percent of U.S. exports to Cuba from 2003 to 2009. Currently, the lack of a direct container vessel service between Texas and Cuba represents a significant limitation.
- Texas seaports appear to be well equipped to handle expanded exports to Cuba, but Cuban infrastructure concerns create capacity limitations for the island nation. Addressing those limitations – which include highway and rail improvements – would require an investment of up to $25 billion in Cuba's transportation infrastructure.
- If Texas-Cuba trade rose to $2.68 billion per year (two times the value of Dominican Republic trade), Cuba would become Texas' 25th largest trading partner, but would still represent only 0.6 percent of Texas' total international trade.
- Even over the long-term, Cuba is likely to represent a relatively small market for Texas exports.

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Executive Summary

Note: This study examined the potential impacts of open trade between Texas and Cuba. It was written prior to the Trump administration's establishment of policy regarding trade with Cuba.

Before 1960, the United States and Cuba were major trading partners. At that time, Cuba was the seventh largest export market for U.S. products. In the years since then, U.S. trade with Cuba has been highly regulated. Exports have been mostly prohibited, with some exceptions for agricultural products, medical supplies, and telecommunication devices and services.

Establishment of a more open economic relationship with Cuba offers the potential to increase U.S.-Cuba trade, to foster greater productivity in the Cuban economy, to increase demand for U.S. imports among Cuban consumers, and to allow for the resumption of U.S. imports from Cuba. Against this background, this study aimed to identify the potential Texas trade and transportation impacts of a more open U.S.-Cuba relationship. Specifically, the study aimed to understand the impact of an open U.S.-Cuba relationship on Texas's seaports and the infrastructure linking the ports to the regions of the state.

In 2014, Cuba's imports comprised 79 percent ($7.3 billion) nonagricultural products and 21 percent agricultural products ($2 billion). Cuba's major trading partners for agricultural, fish, and forestry products are the European Union (specifically France, Spain, and Germany), Brazil, the United States, Argentina, and Canada. Crude petroleum products at $3.2 billion accounted for 44 percent of nonagricultural imports in 2014. Most of Cuba's energy imports are supplied by Venezuela. Finally, Cuba imported only $2.5 billion in services in 2013. This is largely attributable to Cuba's strong tourism and medical services sectors.

In 2014, U.S. exports to Cuba consisted primarily of agricultural products (i.e., $285 million, or 95 percent). Poultry comprised the majority of the value of those exports, at 52 percent. Other major agricultural U.S. exports to Cuba included soybean meal, soybeans, and corn. In 2015, U.S. exports of nonagricultural goods reached 18 percent of total U.S. exports to Cuba, including chemical and medical goods, as well insecticides and herbicides.

Trade restrictions have impacted the U.S. trade relationship with Cuba. The United States could, however, be a very cost-competitive supplier to Cuba because of the close proximity between the United States and Cuba, resulting in lower transportation costs and faster delivery times. Moreover, U.S. agricultural exports are very cost competitive because of U.S. production efficiencies. The removal of restrictions on U.S. trade with Cuba is therefore expected to result in increased exports of U.S. and Texas agricultural products to Cuba in the short term and some exports of manufacturing products in the short term, with more potential over the long term.

It is estimated that Texas's agricultural exports to Cuba could reach $18.6 million per year, consisting of grain ($6.1 million), dairy ($0.3 million), poultry meats ($10.0 million), beef and meat products ($0.5 million), and other (e.g., animal feeds, cotton, and potatoes) amounting to $1.7 million after removing trade restrictions and assuming a more open Cuban economy. In

addition, these exports would result in total economic impacts of $42.9 million throughout the Texas economy. Further, a more open U.S.-Cuba relationship could also increase exports of U.S. agricultural and food exports through Texas ports regardless of U.S. origin—particularly in the case of U.S. wheat and rice exports to Cuba.

Uncertainty exists about the potential market for U.S. and Texas export of nonagricultural products. Interviews with members of the Texas-Cuba Trade Alliance and the Engage Cuba Coalition listed the following Texas commodities with greatest potential for export to Cuba: oil and gas well supplies, resins, software, telecommunications, pharmaceuticals, financial and investor services, and tourism services. There is, however, great uncertainty about the volumes and value that Texas would export to Cuba.

The interviews also revealed that while Texas ports seem well positioned to handle increased exports with Cuba, some concerns remain about Cuba's transportation infrastructure. Specifically, Cuba's unpaved road network that still largely connects highways to large cities, a need for a more efficient rail system that also provides on-dock or near-dock port access, and delays in accessing the dock at the Port of Mariel due to the narrow entryway and restrictions on ships entering the port under dangerous wind conditions. It is estimated that the transportation sector alone needs at least $25 billion in infrastructure investments. Despite these limitations, the Cuban government has focused on the development of Port Mariel. Port Mariel is the largest port in Cuba and handles 85 to 90 percent of Cuba's international trade. Port Mariel has a modern container terminal with 702 m of dock space and has capacity to handle super post-Panamax vessels. Cuba has also partnered with Brazil and Russia, among other countries, for needed investments in transportation infrastructure that facilitate trade.

Finally, in an effort to understand the potential market size for Texas-Cuba trade, the study team compared Cuba to the Dominican Republic. The Dominican Republic is similar to Cuba with regard to tourism being an important economic sector, population size, and gross domestic product (GDP) per capita. In 2016, the Dominican Republic was Texas's 41st largest trading partner at a value of $1.34 billion. Even if Texas trades twice with Cuba what it trades with the Dominican Republic (i.e., $2.68 billion), Cuba would be Texas's 25th largest trading partner and Texas-Cuba trade would amount to 0.6 percent of Texas's total international trade (or 1.5 percent of Texas's trade with Mexico). Even over the long term, it therefore seems that Cuba will be a comparatively small market for Texas exports, and Texas's transportation infrastructure is currently adequate to accommodate an increase in trade with Cuba.

Chapter 1. Introduction

Establishment of a more open economic relationship with Cuba is believed to hold the potential for generating an increase in U.S. and Texas trade with Cuba, to foster greater productivity in the Cuban economy, to increase demand for U.S. products by Cuban consumers, and to allow for a resumption of U.S. imports from Cuba. This study aimed to identify the potential trade and transportation impacts of a more open U.S.-Cuba relationship. Specifically, the study aimed to understand the impact—if any—of an open U.S.-Cuba relationship on Texas's seaports and the infrastructure linking the ports to the regions of the state. This document captures the study effort and includes:

- A discussion of the various laws and regulations that impact U.S. trade with Cuba.
- Information on the economic profile of Cuba.
- Information on the transportation infrastructure in Cuba.
- A discussion of the potential for Texas agricultural exports to Cuba.
- A discussion of the potential for Texas manufactured exports to Cuba.

Chapter 2. U.S. Laws and Regulations Impacting U.S. Trade with Cuba

Trade with Cuba has been regulated by a series of laws and regulations over the past 55 years. Figure 1 outlines the statutes and regulations pertaining to U.S.-Cuba trade. For additional context, the Appendix provides a more detailed timeline of U.S.-Cuba relations during this time.

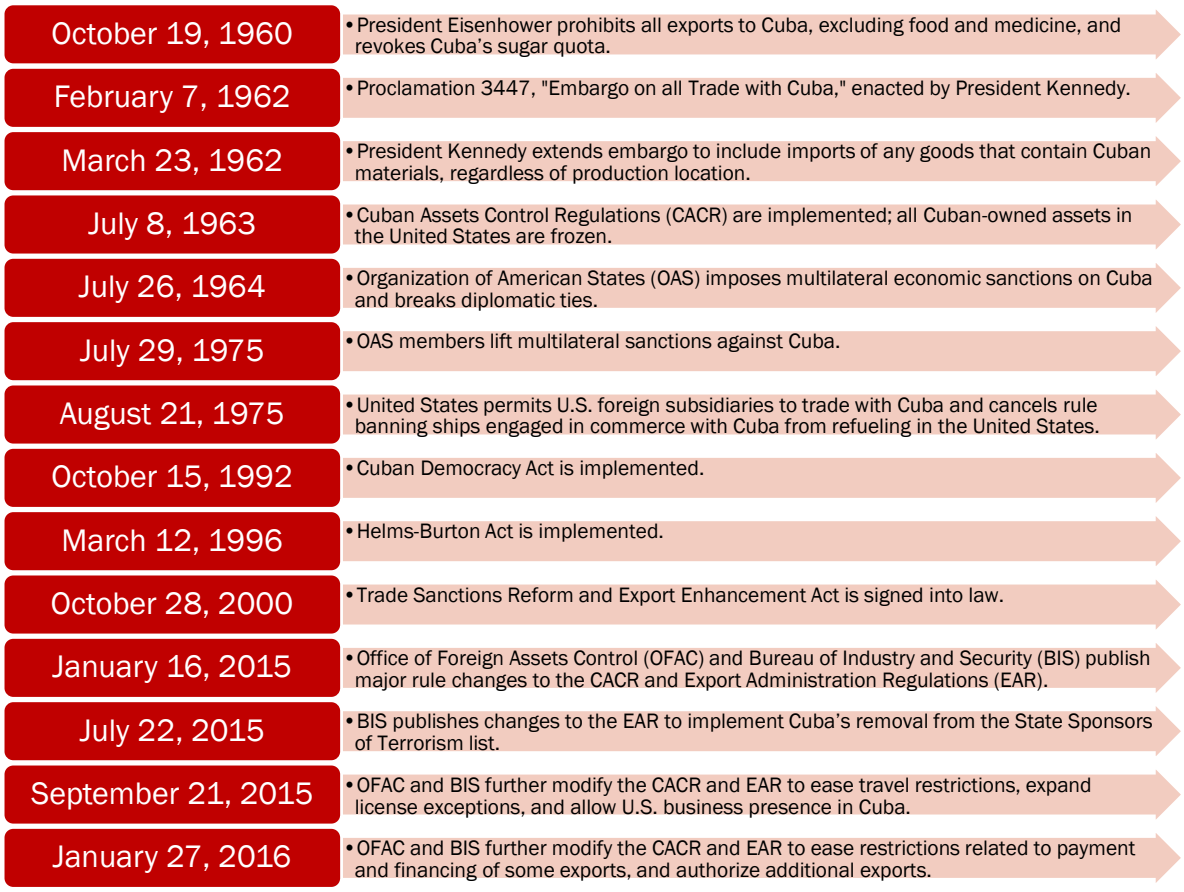


Figure 1. Timeline of U.S.-Cuba Trade Regulations.

While there is no single piece of legislation that regulates all aspects of trade with Cuba, there are three main statutes that provide a general framework for U.S.-Cuba relations:

- The Cuban Democracy Act of 1992 (CDA).
- The Cuban Liberty and Democratic Solidarity Act of 1996 (Libertad or Helms-Burton Act).
- The Trade Sanctions Reform and Export Enhancement Act of 2000 (TSRA) (*1*).

Each of these pieces of legislation govern trade with Cuba by specifically stating what is allowed in terms of investment, imports and exports, and provision of services. The legislation also outlines the situations in which the President may waive restrictions. Although the CDA provides

the President the power to waive its provisions, the Helms-Burton Act limited the conditions under which the President could waive provisions of the legislation. The Helms-Burton Act also provided the regulations that established the embargo, including the Cuban Asset Control Regulations (CACR). CACR-prohibited transactions can therefore only be changed with legislative action. The CACR can only be suspended if there is a transitional government in Cuba or once property claims are resolved. The following sections provide additional detail on the legislation.

Restrictions on Trade with Cuba

For the most part, U.S. imports from Cuba have been prohibited since 1960, with a few exceptions. For example, imports of select goods produced by independent Cuban entrepreneurs are approved. Persons authorized to travel to Cuba may also import $400 worth of goods to the United States. Last, CACR allows for the U.S. import of information, including art, from Cuba (*1*).

Since the embargo, there have also been exemptions that apply to U.S. exports of medicine, medical supplies, and agricultural products to Cuba. TSRA codified agricultural product exemptions into law. The authority to implement these exemptions lies in the License Exemption Agricultural Commodities (AGR). TSRA allows for the export and re-export of U.S. agricultural products under AGR, as long as specific contracting requirements are met. TSRA, however, also prohibits U.S. government agencies from providing any export assistance, including credit for exports to Cuba, marketing assistance, or technical trade assistance (*1*).

CDA allows exemptions for medicine and medical goods exports to Cuba. These goods may be exported to Cuba under a license, within two years of license issuance. CDA requires that these exports be verified on site to ensure they are used for their intended purpose (*1*).

In addition, presidential directives established several licensing exemptions under the EAR. These exemptions allow goods to be exported and re-exported without a license. The exceptions are:

- *License Exception Consumer Communication Devices* permits the export of some consumer communication devices related software, hardware, applications, and services. Commercial sales and donations of consumer communication devices—such as cell phones, televisions, computers, recording devices, and software—are allowed.
- *License Exception Support of the Cuban People* permits the export of items that may improve quality of life in Cuba; strengthen civil society; increase the free flow of information; and support independent economic activity, trade, and commerce. Items under this exception include building materials and equipment, tools for agricultural activity, and supplies and equipment for entrepreneurs—these items can only be for private-sector use.

- *License Exception Gift Parcels and Humanitarian Donations* permits the export of items to be donated by an individual, of a value not exceeding $800. These items may include food, medical supplies, and some consumer communication devices (*1*).

On January 27, 2016, the EAR was revised to further support the Cuban people. The revision added approval of (*1*):

> *(1) license applications for exports and re-exports of certain telecommunications items to improve communications to, from, and among the Cuban people;*
>
> *(2) certain commodities and software to human rights organizations, individuals, and nongovernmental organizations to promote independent activity;*
>
> *(3) agricultural items outside the scope of AGR and other licensing exceptions; and*
>
> *(4) items to ensure the safety of civil aviation.*

In 2016, OFAC also revised the CACR. The revision included the omission of limitations to payment and financing of 100 percent U.S. origin exports, as well as changes to regulations concerning air carrier services and transactions related to information, professional meetings, performances and competitions, exhibitions, and humanitarian projects (*1*).

Restrictions on Investment in Cuba

CACR prohibits most U.S. firms from investing in Cuba. Some U.S. firms may, however, have warehouses, offices, or retail spaces to facilitate authorized transactions. Telecommunications and Internet-based service providers, for example, may have a physical business presence in Cuba under licensing procedures.

Permitted financial transactions are limited to credit and debit card use by travelers and, in some cases, the opening of Cuban bank accounts. These accounts may be opened by travelers and depository institutions to facilitate authorized transactions, including those to facilitate trade.

Finally, U.S.-owned foreign subsidiaries are prohibited from licensing exports to Cuba, and vessels carrying goods or passengers to and from Cuba are restricted (*1*).

Trump Administration Memorandum

On June 16, 2017, the Trump administration released a memorandum entitled "Strengthening the Policy of the United States Toward Cuba." The memorandum seeks to restrict travel to Cuba by limiting the ability of Americans to travel on their own, without permission from the U.S. government. With regard to trade, the memorandum notes that the administration will "end economic practices that disproportionately benefit the Cuban government or its military, intelligence, or security agencies or personnel at the expense of the Cuban people" (*2*). The memorandum singles out Grupo de Administracion Empresarial S.A. (GAESA), as well as its affiliates, subsidiaries, and successors, as an organization affiliated with the government. Further, the memorandum established that the United States will not prohibit transactions that "concern

air and sea operations that support permissible travel, cargo, or trade" or "support the sale of agricultural commodities, medicines, and medical devices sold to Cuba consistent with the Trade Sanctions Reform and Export Enhancement Act of 2000 (22 U.S.C. 7201 et seq.) and the Cuban Democracy Act of 2002 (22 U.S.C. 6001 et seq.)" (*2*).

The details of the memorandum are to be refined in the future by U.S. federal agencies. Since GAESA is involved in many sectors of the economy, the policy change may severely limit trade. However, it is expected that the policy will "make an exception for U.S. companies already doing business with GAESA" (*3*).

Chapter 3. Cuba's Economic Profile

Cuba is a centrally planned, nonmarket economy. Prices and wages are largely determined by the Cuban government. In 2014, Cuba's GDP was $82.8 billion (expressed in current US$) and Cuba's GDP per capita was $7,274.30 (expressed in current US$) (*4*). Cuba's external debt is estimated at $25.2 billion (or about 30 percent of GDP), and it is estimated that Cuba had approximately $10 billion in foreign currency reserves in 2014 (*5*).

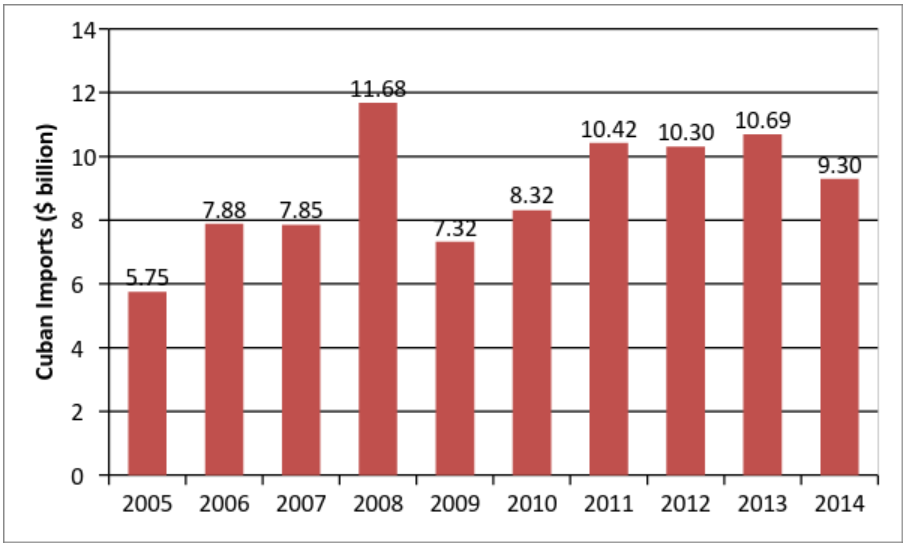
The World Bank classifies Cuba as an upper-middle-income economy. Other international organizations, however, classify Cuba as a developing country or an emerging economy given the reported average wage of most Cubans of approximately $20 per month.[1] The Cuban government provided food rations, education, health care, and a number of other benefits to the Cuban population of approximately 11.4 million people in 2014. Furthermore, it is estimated that Americans send between $1 and $3 billion in cash remittances to relatives in Cuba each year in addition to an estimated $2 to $3.5 billion in goods each year (*5*).

Major Trading Partners

Before 1960, the United States was a major trading partner of Cuba. At that time, Cuba was the seventh largest export market for U.S. products. In 2014, U.S. exports to Cuba amounted to approximately $299 million, making Cuba the 125th largest U.S. export market (*5*). In 2015, U.S. exports to Cuba further declined to $180.3 million, before increasing again in 2016 to $245.5 million (*6*).

Figure 2 shows Cuba's imports between 2005 and 2014. Cuba's imports peaked at $11.7 billion in 2008 before sharply reducing to $7.3 billion in 2009 as a result of the global recession. Cuba's imports increased to $10.7 billion in 2013 before declining to $9.3 billion in 2014. In 2014, the United States supplied only 3 percent of Cuba's total imports (*5*).

[1] A Texas-Cuba Trade Alliance representative, however, remarked that Cubans in the tourism sector have significantly higher monthly earnings due to the tips they earn. Cuba has also created the political and economic space for Cubans to substantially increase their earnings (e.g., cooperative farms have proven economically very successful).



Source: (*5*).

Figure 2. Cuban Imports (2005 to 2014).

Table 1 shows Cuba's major import trading partners. Cuba's three major import trading partners since 2005 have been Venezuela, the European Union (specifically Spain, Italy, and Germany), and China (*5*). Cuba's three major trading partners supplied almost 70 percent of total Cuban imports (in terms of value) in 2014.

Table 1. Cuba's Imports by Trading Partner ($ million).

Trading Partner	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Venezuela	1,240	1,934	1,382	3,426	2,266	2,808	3,983	3,807	3,629	3,234
European Union	1,567	2,115	2,023	2,413	1,466	1,713	2,108	2,222	2,416	2,141
China	636	1,264	1,170	1,354	972	1,067	1,044	1,173	1,374	1,063
Brazil	246	343	324	527	277	415	550	568	528	508
Canada	371	453	528	725	275	379	469	423	455	406
Mexico	222	194	190	309	251	307	357	387	373	362
United States	369	341	447	712	533	363	363	464	360	299
All Other	1,102	1,240	1,787	2,212	1,282	1,264	1,551	1,260	1,556	1,284
Total	5,751	7,884	7,851	11,677	7,322	8,317	10,425	10,304	10,691	9,297

Source: (*5*).

Table 1 shows that the value of U.S. exports to Cuba fluctuated between a low of $299 million in 2014 to a high of $712 million in 2008.

Major Trade Commodities

In 2014, Cuba's imports comprised 79 percent ($7.3 billion) nonagricultural products and 21 percent agricultural products ($2 billion). Crude petroleum products at $3.2 billion accounted for 44 percent of nonagricultural imports in 2014.

Although Cuba's external trade is concentrated in a few products, there have been some changes in recent years. In 2006, mining products (mainly nickel) constituted almost half of Cuban exports, yet these products only represented 13.4 percent of the total export value in 2013. In contrast, fuel and lubricants, as well as chemical products (including those from the Cuban pharmaceutical industry), increased from 9.5 percent of total exports to 12.9 percent.

With regard to imports, there is a significant concentration of products within intermediate goods (i.e., goods such as sugar that will be used in the production of final goods). These goods represented 57.3 percent of exports in 2009 but increased to 76.9 percent in 2013. In addition to a reduction in participation in consumer goods, there was a significant decrease in the representation of capital goods within imports during the 2006–2013 timeframe. This is linked to the low level of capital accumulation in the Cuban economy as well as the high percentage of imports that fuel and agricultural products represent. In fact, between 2006 and 2013, the average annual growth rate of imports more than doubled that of the GDP, which points to the Cuban economy's reliance on imports.

Additionally, Cuba's transactions with Latin America and the Caribbean in the trade of intermediate goods are cross-industry in nature—a sign that the country remains largely uninvolved in regional value chains (*7*).

Agricultural Products

Cuba is an island nation[2] and as such imports a significant share of the Cuban population's dietary staples, such as wheat, rice, corn, soybeans, dry beans, meats, and dairy products. Cuba's major trading partners for agricultural, fish, and forestry products are the European Union (specifically France, Spain, and Germany), Brazil, the United States, Argentina, and Canada (*5*). Alimport (Empresa Comercializadora de Alimentos) is the only agency that can import U.S. agricultural products for Cuban entities. Agricultural products imported are distributed by the state to state-run ration and non-ration stores where the products are sold to the Cuban population at subsidized prices.

In 2014, U.S. exports to Cuba consisted primarily of food and agricultural products (i.e., $285 million, or 95 percent). This was less than half the amount of Cuba's agricultural imports from the United States in 2008 (when it peaked at $701 million). In 2014, poultry (specifically frozen chicken cuts) accounted for almost 52 percent (i.e., $147.8 million) of total U.S. agricultural exports to Cuba. Other major agricultural U.S. exports to Cuba included soybean meal, soybeans, and corn (*5*). In 2015, U.S. exports of poultry to Cuba dropped to $77.8 billion. In 2016, the United States exported $160.5 million in food and $57.6 million in agricultural products to Cuba. Texas accounted for $143.3 million (approximately 89.3 percent) of the U.S. food exports to Cuba in 2016 (*6*).

[2] Cuba produces mostly sugar, cement, and tobacco (*5*).

Nonagricultural Products

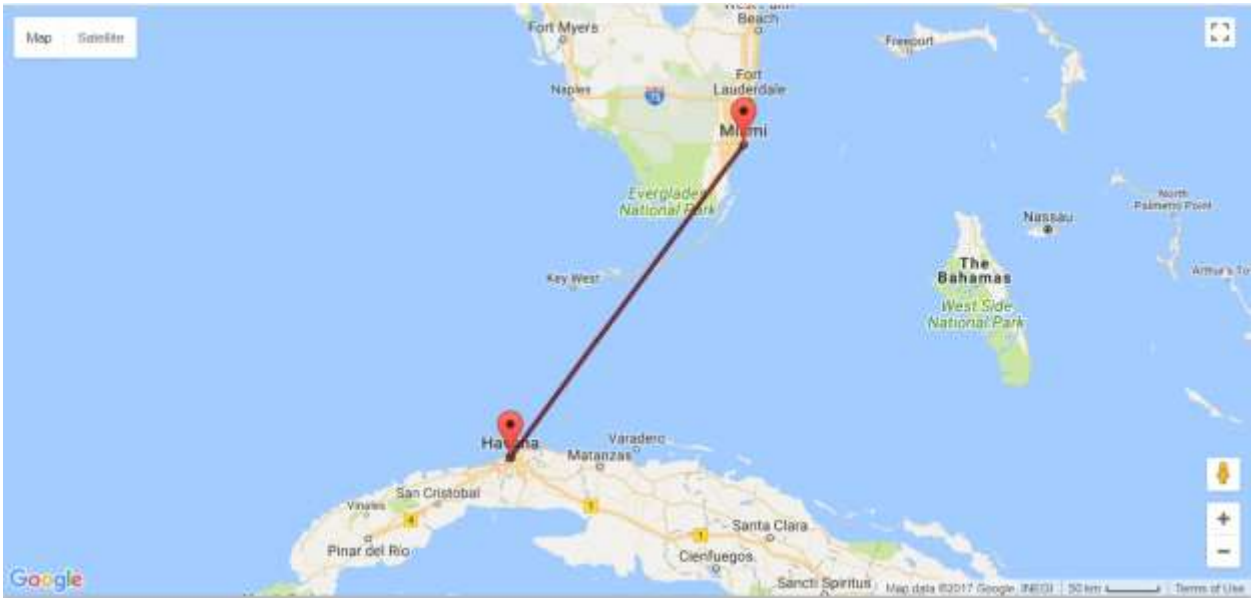
Cuba is also a major importer of energy products. Venezuela is Cuba's most important trading partner for energy products. Venezuela supplies crude petroleum products to Cuba at subsidized rates in exchange for Cuban professionals who work in Venezuela. The latter includes doctors, teachers, sports trainers, and military advisors (*5*).

In 2014, U.S. exports of nonagricultural goods to Cuba represented approximately 5 percent of U.S. exports to Cuba. In 2015, U.S. exports of nonagricultural goods reached 18 percent of total U.S. exports to Cuba. This was largely due to a "doubling of U.S. exports of insecticides, fungicides, herbicides, disinfectants, and similar products, as well as other manufactured products. . . . U.S. exports of nonagricultural goods totaled $31.9 million in 2015, and consisted primarily of chemicals and medical goods" (*5*).

In 2016, U.S. exports of nonagricultural or food products to Cuba represented 11 percent of U.S. exports to Cuba. Chemicals represented 5.8 percent ($14.3 million) of U.S. exports to Cuba. The remaining commodities included transportation equipment; computer and electronic products; miscellaneous manufactured commodities; machinery, except electrical; beverages and tobacco products; and electrical equipment, appliances, and components (*6*). Texas exported only $30,000 in computer and electronic products, $28,695 in transportation equipment, and $16,626 in chemicals to Cuba in 2016 (*8*).

Commodities to Benefit from Open U.S.-Cuba Relationship

The distance between Miami and Havana is only 231 mi (about 198 nautical mi), as shown in Figure 3. This close proximity between the United States and Cuba results in lower transportation costs, making the United States a very cost-competitive supplier to Cuba.



Source: (*9*)

Figure 3. Proximity of Havana, Cuba, to Miami, Florida.

The removal of restrictions on U.S. trade with Cuba is expected to result in:

- Significant exports of U.S. agricultural products to Cuba over the short term.[3]
- Some exports of U.S. manufactured products to Cuba over the short term with larger prospects over the longer term.
- No substantial exports of U.S. services to Cuba over the short term (*5*).

Table 2 lists Cuba's major agricultural imports, the dollar value imported in 2014, major U.S. production states, the value of Cuban imports from the United States in 2014, and the United States' major international competitors for Cuban market share.

Table 2. Major Cuban Agricultural Imports, Demand, Potential U.S. States to Benefit, and International Competitors.

Agricultural Commodity	Major U.S. Production States	Cuban Demand Market ($ Imported in 2014)	Value ($) of Cuban Imports from the United States (2014)	International Competitors
Wheat	Kansas, Texas, Oklahoma, Montana, North Dakota	$235 million	$0	France, Canada, Germany
Rice	Arkansas, Louisiana, Mississippi, Missouri, Texas	$173.6 million	$0	Vietnam, Brazil, Argentina
Corn	Iowa, Illinois, Nebraska, Minnesota, Indiana	$204.1 million	$28.2 million	Argentina, Brazil, Canada
Soybeans, soybean oil, and soybean meal	Arkansas, Illinois, Minnesota, Missouri, Nebraska, Iowa, Indiana	$323.4 million	$65.4 million	Argentina, Brazil, China, Russia
Pulse (dry beans, chickpeas, peas, and lentils)	North Dakota, Michigan, Nebraska, Minnesota, Idaho	$68.5 million	$0	Canada, China, Argentina
Poultry	Georgia, Arkansas, North	$202.2 million	$147.8 million	Brazil, Canada

[3] U.S. agricultural exports to Cuba are very cost competitive because of production efficiencies and the proximity of the United States to Cuba. Specifically, U.S. proximity to Cuba results in comparatively lower transportation costs and faster delivery times. The latter is specifically important to perishable commodities. The United States can also accommodate smaller shipments and use smaller ships to access smaller Cuban ports (*5*).

	Carolina, Alabama, Mississippi			
Pork	Iowa, North Carolina, Minnesota	$14.3 million	$1.3 million	Spain, Canada
Beef	Texas, Nebraska, Kansas	$14.1 million	$0	Italy, Canada, Chile, Brazil
Dairy (milk powder and evaporated and condensed milk)	California, Wisconsin, Idaho, New York, Pennsylvania	$221.3 million	$0	New Zealand, Uruguay, Belgium, Poland, Netherlands, Canada, Brazil

Source: (*5*).

Rosson, Adcock, and Manthei estimated that agricultural exports to Cuba could reach $0.9 billion per year within five years after removing trade restrictions and assuming a more open Cuban economy, fewer U.S. and Cuban regulations, strong tourism, and remittances (*10*). In November 2015, Adcock, Ribera, and Rosson estimated that Texas's agricultural exports to Cuba could reach $18.6 million per year, consisting of grain ($6.1 million), dairy ($0.3 million)[4], poultry meats ($10.0 million), beef and meat products ($0.5 million), and other (e.g., animal feeds, cotton, and potatoes) amounting to $1.7 million (*11*). Table 3 illustrates the likely effects of the removal of restrictions on U.S. trade with Cuba on certain dietary staples of the Cuban population (*5*).

Table 3. Potential for U.S. Agricultural Export Commodities.

Agricultural Commodity	Likely Effect of Normalization of U.S.-Cuba Relations
Wheat	Likely that U.S. wheat exports would resume and expand after several years. Exports could exceed $150 million per year.
Rice	Likely that U.S. rice exports would resume and expand to about $60 million per year (within two years). United States to face strong competition from Vietnam, which offers favorable credit terms to Cuba.
Corn	Likely to expand with the ability of U.S. exporters to offer credit.
Soybeans, soybean oil, and soybean meal	Likely to expand because of production efficiencies and logistical advantage.
Dry beans, chickpeas, peas, and lentils	U.S. dry bean exports could potentially resume, but United States faces competition from Argentina, China, and, more recently, Canada.
Poultry	United States is already the lead supplier of Cuban

[4] A Texas-Cuba Trade Alliance representative noted that before the Great Recession Texas sold $28 million a year in powdered milk to Cuba, which indicate the potential for higher dairy product sales in the future than $0.3 million.

	poultry imports.
Pork	Likely to expand to higher-value pork cuts in the future. Over the short term, imports will mostly consist of low-value pork muscle cuts and variety meats. United States to compete with frozen pork from Canada.
Beef	Likely to expand in future, particularly lower-priced cuts and frozen offal for Cuban population and higher-end beef cuts for tourists. Potential market competition from Canada and the European Union.
Dairy	Likely to resume and reach 30 percent of Cuban dairy imports by 2020.

Source: (*5*).

U.S. agricultural exports are very competitive because of production efficiencies and the proximity of U.S. producers to Cuba, resulting in lower transportation costs, faster delivery times, and the ability to offer frequent deliveries with smaller ships that can access more of Cuba's seaports (*5*).

The export of most U.S. manufactured products to Cuba has largely been restricted, although certain adjustments have been made to allow for the export of specific products such as medical supplies (including pharmaceuticals, medical devices, instruments, equipment, and equipped ambulances) and telecommunications equipment. Furthermore, a substantial share of U.S. shipments to Cuba are donations as opposed to commercial sales. Past donations have included food as well as medical goods, pharmaceuticals, apparel, and other miscellaneous products. Table 4 lists Cuba's major manufactured imports, the dollar value imported in 2014, major U.S. production states, the value of Cuban imports from the United States in 2014, and the United States' major international competitors for Cuban market share.

Table 4. Major Cuban Manufactured Imports, Demand, Potential U.S. States to Benefit, and International Competitors.

Commodity	Major U.S. Production States	Cuban Demand Market ($ Imported in 2014)	Value ($) of Cuban Imports from the United States (2014)	International Competitors
Energy and energy-related products		$3.4 billion		Venezuela (crude petroleum)
Refined petroleum products (primarily kerosene jet fuels and fuel oils)	U.S. Gulf Coast states (primarily Louisiana and Texas)	$265.6 million	$0	Algeria, Venezuela, European Union, Latin America, Mexico
Fertilizers and pesticides	Fertilizers: California, Florida, and Texas Pesticides: Midwest and Gulf Coast (e.g., Louisiana)	$260.2 million	$6.4 million	China, Canada, Mexico, Germany, Russia, Netherlands, Italy, Ukraine, Spain
Construction and agricultural machinery	Georgia, Illinois, Iowa, Louisiana, Nebraska, North Dakota, Pennsylvania, Tennessee, Wisconsin	$111.3 million	$0	Brazil, China, Spain, Italy, Netherlands, France
Building materials*	Southeastern states	$467.8 million	Less than $50,000	Spain, China, Mexico, Italy, Canada, Honduras, Netherlands
Telecommunications equipment	California, Florida, Maryland, North Carolina, Texas	$60.8 million	Less than $50,000	China, France, Spain, Sweden, Canada
Medical devices	California, Massachusetts, Texas	$88.7 million	$600,000	Germany, China, Japan, Spain, Italy
Motor vehicle parts	Southeastern states	$104.3 million	$0	Spain, China, Russia, France, Netherlands, Canada, South Korea

* Materials that are directly consumed by the construction sector, such as finished steel products; paint, caulking, and adhesives; insulated conductors, optical fibers, and electrical insulators; and base-metal builders' wares. The new rules following the December 2014 announcement of the U.S. administration to restore diplomatic ties with Cuba allow for the export of "certain building materials to the Cuban private sector for the construction and renovation of privately owned residences, businesses, and other buildings for private and recreational use" (5).
Source: (5).

Table 5 illustrates the likely effects of the removal of restrictions on U.S. trade with Cuba on certain manufactured goods (*5*).

Table 5. Potential for U.S. Manufactured Export Goods.

Agricultural Commodity	Likely Effect of Normalization of U.S.-Cuba Relations
Refined petroleum products	Unlikely for United States to export refined petroleum products to Cuba in short term because U.S. refinery products (motor fuels) are high in octane and chemicals that make them not suitable for Cuban automobiles, electric power plans, or industrial purposes. Venezuela is a major supplier of crude petroleum to Cuba.
Fertilizers and pesticides	Likely opportunities for U.S. exports of fertilizers and pesticides*
Construction and agricultural machinery**	Likely opportunities for U.S. construction and agricultural machinery exports.
Building materials***	Immediate opportunities for U.S. building material exporters.
Telecommunications equipment	Likely small potential for telecommunications equipment (e.g., telecommunications and Internet networking equipment) exports initially followed by wireless infrastructure equipment.
Medical devices	Potential for U.S. exports of state-of-the-art medical equipment over the long term.
Motor vehicle parts	Potential for some U.S. aftermarket parts (e.g., classic car parts) in the short term. Also, potential for U.S. exports of original equipment and aftermarket parts over the long term.

* Two Cuban government priorities are to (a) increase domestic agricultural yields, and (b) reduce Cuba's dependence on imported food. The use of fertilizers and pesticides can help to achieve these two priorities.
** Colby-Oizumi and Tafti reported that in 2013, 87 percent of Cuba's tractors were more than 30 years old.
*** Building materials, equipment, and tools used by the private sector to construct or renovate private buildings, tools and equipment for private agriculture, and tools, equipment, supplies, and instruments used by private entrepreneurs are eligible for export and re-export to Cuba under the License Exception Support of the Cuban People under EAR.
Source: (*5*).

Cuba is largely an exporter of services ($12.3 billion in 2014), primarily health and travel services. Service imports are mostly foreign management services pertaining to hotels, transportation, telecommunications, and architecture and construction services. Service imports amounted to $2.5 billion in 2014 (*5*).

More than 3 million tourists visited Cuba in 2014. Most of these tourists were from Canada (1.2 million), followed by Germany (140,000), the United Kingdom (124,000), Italy (112,000), and France (104,000). According to official statistics, 91,300 U.S. citizens visited Cuba in 2014, but this number excludes almost 259,000 Cuban Americans who visited the island. Cuba

considers Cuban Americans citizens of Cuba and records their arrival separately. It is estimated that if all restrictions on U.S. travel to Cuba were lifted, an additional 1.5 to 3.5 million U.S. tourists would visit Cuba, resulting in a net increase of 2 million tourists (since it is expected that U.S. tourists would substitute some tourists from other countries). Tourism is Cuba's largest earner of foreign exchange, and it is foreseen that increased tourism could benefit U.S. suppliers of fruits and vegetables, meats, wine and other beverages, and processed foods (*5*).

Chapter 4. U.S. Restrictions on Trade with Cuba

U.S. restrictions that hinder trade with Cuba include the following:

- U.S. exporters are unable to offer credit. U.S. commercial credit cannot be provided for most U.S. exports to Cuba, which means that Cuba has to pay the exporter in cash or through a third-country financing vehicle.[5]
- Business travel to facilitate trade is restricted. This restriction extends to Cuban buyers traveling to the United States.
- U.S. tourist travel restrictions to Cuba directly and indirectly reduce the demand for U.S. goods and services.
- U.S. investment in Cuba is restricted, which limits the U.S. business presence in the Cuban market (*5*).
- U.S. government funds cannot be used in Cuba. U.S. government agencies cannot provide "export marketing assistance, technical trade assistance, and credit or credit guarantees for exports to Cuba" (*5*).
- Cuba lacks foreign currency, so countries that are willing to provide Cuba with generous credit terms or enter into barter agreements with the Cuban government have been in a position to increase their market share (*5*).

Finally, shipping costs are higher because of U.S. restrictions on the cargo movements between Cuban and U.S. ports. Specifically, ships off-loading authorized cargo from the United States in Cuba cannot secure return loads from Cuba, therefore increasing shipping costs. Similarly, ships loading in Cuba cannot continue to the United States. Higher shipping costs limit the amount of Cuban imports because of the limited amount of foreign currency at Cuba's disposal (*5*).

[5] A Texas-Cuba Trade Alliance representative commented that the offering of credit is "one of the most misunderstood points in the relations" between the U.S. and Cuba. According to the representative, most U.S. vendors have no intention of offering the favorable credit terms – nor does Cuba expect the terms - offered by China or Vietnam. Rather Cuba wants the third-party financing vehicle to be replaced by the transactional terms that are regularly seen in U.S. and international commerce; negotiated between buyer and seller.

Chapter 5. Cuban Measures and Factors Impacting U.S. Trade with Cuba

Cuban measures that hinder trade with the United States include the following:

- The Cuban government controls trade and the distribution of trade.
- Limits are placed on foreign investment and property ownership.
- Trade and investment decisions are often politically motivated.

The Cuban government controls most aspects of Cuba's international trade, including the distribution of trade. About 130 state importing entities (empresas) connected to Cuban government ministries oversee all imports into Cuba. For example, the Cuban government requires that all U.S. agricultural exports to Cuba be handled by Alimport. These state importing entities receive a budget from the relevant Cuban ministry that can be spent on a specific list of products provided by the Cuban government. Finally, the storage and distribution of imports beyond delivery to the Cuban port are mostly controlled by the Cuban government. Cuba's storage capacity is limited, and Cuba specifically lacks refrigerated warehouse capacity (i.e., cold storage) and a fleet of refrigerated trucks (*5*).

A Cuban government authority, such as the Council of State, the Council of Ministers, or a Council of Ministers' appointed authority, must approve all investments in Cuba. Most of Cuba's approved foreign direct investments are joint ventures (with at least a 51 percent Cuban equity share) or contract investment. The U.S. International Trade Commission found that joint ventures listed in the Cuban government's Portfolio of Opportunities for Foreign Investment, projects in the Mariel Special Economic Development Zone, and projects that meet Cuban government objectives are approved quickly. Economic sectors that have been designated high priorities for foreign direct investment "include pharmaceuticals and biotechnology, tourism, transportation, agriculture, renewable energy, and light manufacturing" (*5*). Of concern to foreign investors are foreigners' lack of rights to own land and some physical goods.

Trade and investment decisions are often politically motivated and are therefore impacted by the government's foreign policy agenda, domestic social policies and programs, a preference for diversifying Cuba's trading partners, and historical relationships. For example, it is reported that Cuban officials believe that having diverse trading partners is a requirement for national security and sustainable development (*5*).

Other concerns include Cuba's legal system (specifically, all Cuban lawyers are employees of the Cuban government), the lack of transparency in Cuba's domestic arbitration system, Cuba's

outdated copyright law (i.e., "copyright infringement reportedly is widespread and pervasive"), and Cuba's dual currency[6] and exchange rate (*5*).

[6] Cuba has two currencies: the Cuban peso (CUP) and the convertible peso (CUC). The CUC is pegged to the U.S. dollar and used for international trade, in the tourism sector, in restaurants, in high-end stores, and by the private sector. The CUP is used to pay Cuban wages and in most domestic transactions. Neither currency is convertible outside of Cuba (*5*).

Chapter 6. Cuba's Transportation Infrastructure

It has been estimated that Cuba needs $2 to $2.5 billion in foreign direct investment per year to ensure an economic growth rate of above 5 percent. It is estimated that the transportation sector alone needs at least $25 billion in infrastructure investments. In recent years, Cuba has partnered with Brazil, Russia, and other countries for needed investments in transportation infrastructure that facilitate trade. Table 6 summarizes information on Cuba's transportation infrastructure (*5*).

Table 6. Overview of Cuba's Transportation Infrastructure.

Type of Transportation Infrastructure	Metric
Airports with paved runways	64
Railways	5,199 mi
Standard gauge	5,092 mi
Narrow gauge	107 mi
Roadways	37,815 mi
Paved	18,529 mi
Unpaved	19,286 mi
Major seaports	12*

* The major seaports are Antilla, Cienfuegos, Guantánamo, Havana, Matanzas, Mariel, Nuevitas Bay, Santiago de Cuba, Caibarin, Cárdenas, Isabela, and Nueva Gerona.
Source: Adapted from (*5*).

Major Airports

Cuba has 10 international airports[7] (*12*) and 161 domestic airports. Cuba is served by 39 airlines that connect the island to 251 cities worldwide. Of Cuba's 161 domestic airports, seven have paved runways in excess of 9,900 ft that can accommodate large commercial aircraft. The Aerovaradero Freight Terminal at Havana's José Martí International Airport, Cuba's largest airport, has a freight capacity of 600 tons and:

- Two refrigeration and freezing chambers.
- 50,000 sq ft of warehousing capacity (*5*).

Planned investments in Cuba's airports include:

- Remodeling the airport terminals in Havana by Grupo Odebrecht financed through a $150 million credit from the Brazilian National Development Bank.

[7] The 10 international airports are José Martí International Airport (Havana), Juan Gualberto Gómez International Airport (Varadero), Antonio Maceo International Airport (Santiago de Cuba), Ignacio Agramonte International Airport (Camagüey), Frank País International Airport (Holguín), Vitalio Acuña Airport (Cayo Largo del Sur), Jardines del Rey International Airport (Cayo Coco, Ciego de Ávila), Avel Santamariá International Airport (Villa Clara), Jaime González Airport (Cienfuegos), and Sierra Maestra Airport (Granma). The latter three airports are classified as international civil aviation airports (*12*).

- Building a cargo airport on the former San Antonio de los Baῆos military base at a cost of $200 million by Russian government pursued investors (*5*).
- Expanding and managing the José Martí International Airport through the French companies Bouygues Bâtiment International and Groupe Aéroports de Paris (*13*).

Major Seaports

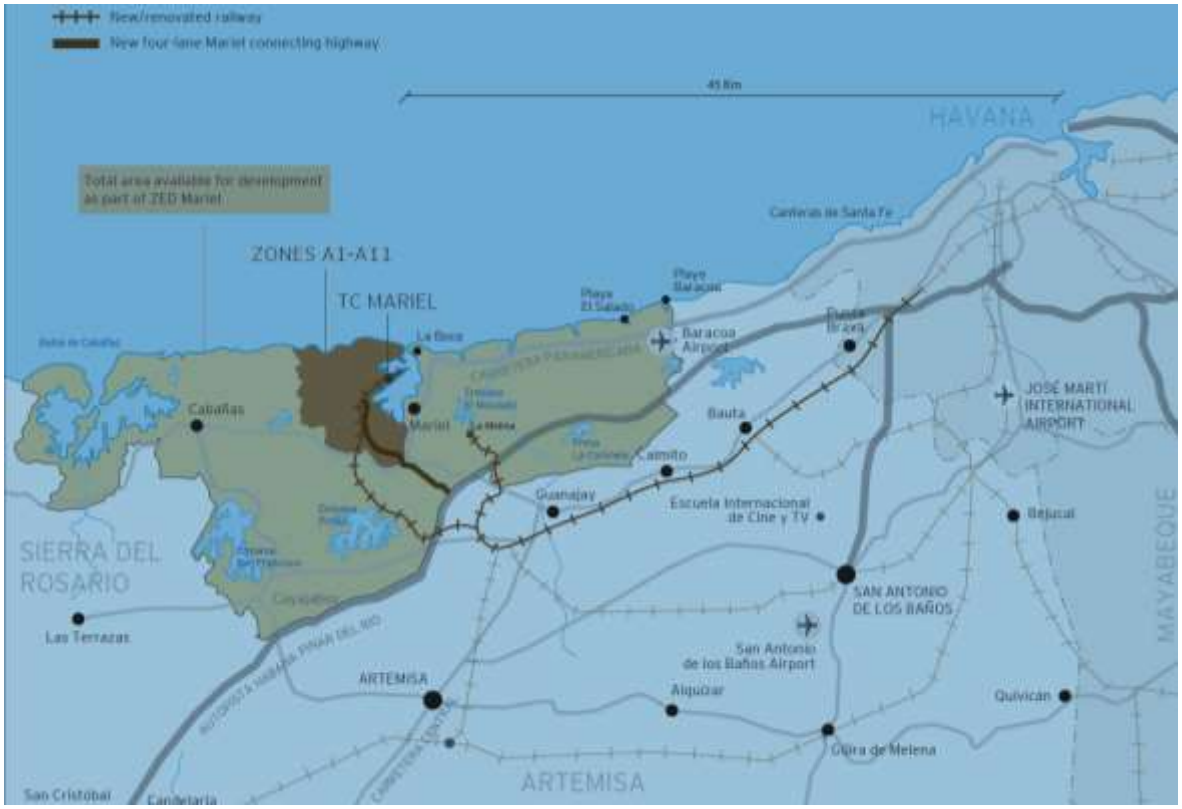
Cuba has more than 70 seaports, of which 31 are involved in international trade and 12 are considered major seaports (see Table 6) (*12*). The Port of Mariel is the largest port in Cuba, handling 85 to 90 percent of Cuba's international trade. Most of Cuba's ports, besides the Port of Mariel, are challenged in terms of vessel size constraints (port depths), slow loading, and inadequate port equipment maintenance and repairs (*5*).

Case Study: The Port of Mariel

In November 2013, the Cuban government created the Special Economic Development Zone of Mariel (ZEDM). It is reported that the total ZEDM covers an area of 289 sq mi, but that development is currently concentrated in Zones A1 to A11 (an area of about 27 sq mi) (*13*). Figure 4 shows the location of the ZEDM in relation to Havana. The ZEDM is approximately 28 mi west of Havana.

The Cuban government, in partnership with the Brazilian government and Odebrecht (a Brazilian construction company), invested approximately $900 million in the development of Port Mariel and the ZEDM. In 2017, projects from Portugal, Panama, Brazil, and Spain were added to the ZEDM. These additions mean that there are 24 companies in the ZEDM from 11 different countries. It estimated that 4,000 jobs will be created with these investments (*14*). The objectives with the ZEDM are to:

- Contribute to national development.
- Generate exports and promote imports replacement.
- Promote the transfer of know-how, as well as business managerial skills.
- Attract foreign investment, as well as the establishment of national enterprises.
- Generate new sources of employment and long term financing.
- Ensure environmental sustainability.
- Develop the necessary infrastructure to contribute to economic progress.
- Create a highly efficient logistics system.
- Guarantee the articulation with the rest of the Cuban economy (*15*).



Source: (*13*).

Figure 4. Special Economic Development Zone of Mariel.

The following activities and economic sectors receive priority in the ZEDM:

- Biotechnology—development and production of drugs.
- Containers and packaging.
- Industry.
- Renewable energy.
- Agriculture.
- Food industry.
- Industry.
- Telecommunications and informatics.
- Tourism and real estate.
- Infrastructure investment (*12*).

Companies Locating at ZED Mariel:

"*Unilever Suchel S.A., a joint venture between Cuban Intersuchel S.A. and Unilever, will invest US$39 million to build a plant that manufactures toiletries at ZED Mariel.*"

"Brascuba, a joint venture of the Brazilian subsidiary of British America Tobacco, is investing US$11 million in a new manufacturing plant at ZED Mariel."

"During 2015, Beijing authorities signed 11 agreements to be implemented from 2015 to 2017 with BioCubaFarma. Several of these projects will take place in ZED Mariel." (*13*)

Incentives to attract foreign capital and investment include:

- Lower taxes.[8]
- At least a 10-year tax holiday on profits.
- Protections of foreign investments.
- Fewer restrictions on hiring labor.[9]
- Modern utility infrastructure.
- No Cuban customs duties to be levied on equipment and goods imports relating to the investment (*5*).

Table 7 lists the fiscal rules that apply to all companies that locate in the ZEDM.

[8] Firms do have to deposit dues amounting to 0.5 percent of quarterly gross income into the Projects Zone Development Fund.

[9] According to Colby-Oizumi and Tafti, "Foreign investors located in ZED Mariel may directly employ foreign nonresidents to perform management or technical jobs (Article 32), but investors must work through the Cuban government employment agency to hire Cuban or foreign resident workers (Article 31)" (*5*).

Table 7. Taxes Applicable to Companies in the ZEDM.

Tax	Applicable to All Companies in ZEDM
Income Tax (on net profits)	Exempt for fist 10 years and then taxable at 12 percent. Exemption may be extended. Profits reinvested are tax exempted.
Social Security (employer)	The Law on the State Budget establishes the rate on an annual basis—Law 117 on the State Budget for 2014 establishes a rate of 14 percent payable by employer and 5 percent by employee (withheld by employment agency) if salary over specified level.
Payroll Tax	None.
Personal Income Tax (non-Cuban residents)	Fifteen percent of all income obtained or generated as a result of economic activity in Cuba. Dividends are exempt from taxation. Payable within first 20 calendar days following settlement period.
Services Tax (Gross Receipts Tax)	Exemption during first year of operations. One percent flat rate established.
Goods and Services Tax	Applied on certain goods and services intended for use or consumption, such as alcoholic beverages, cigarettes, luxury goods, transmission of electricity, etc. The rates for taxable goods and services are established in the Law on the State Budget or via resolution of the Ministry of Finances and Prices.
Territorial Contribution	None.
Environmental Protection Taxes (beaches, fauna, etc.)	Fifty percent reduction during investment recovery period.
Customs Duties	Not payable on capital equipment imported for investment. Customs duties are payable in accordance with the established tariffs for raw materials. Existing scheme in place to exempt goods subsequently re-exported.
Land Transportation and Document Tax	Rate is dependent upon type of vehicle/document; amounts are relatively low.
Advertisement Tax	Applies to the public display of commercial announcements and advertising signs; rates are dependent on dimensions of sign and location.

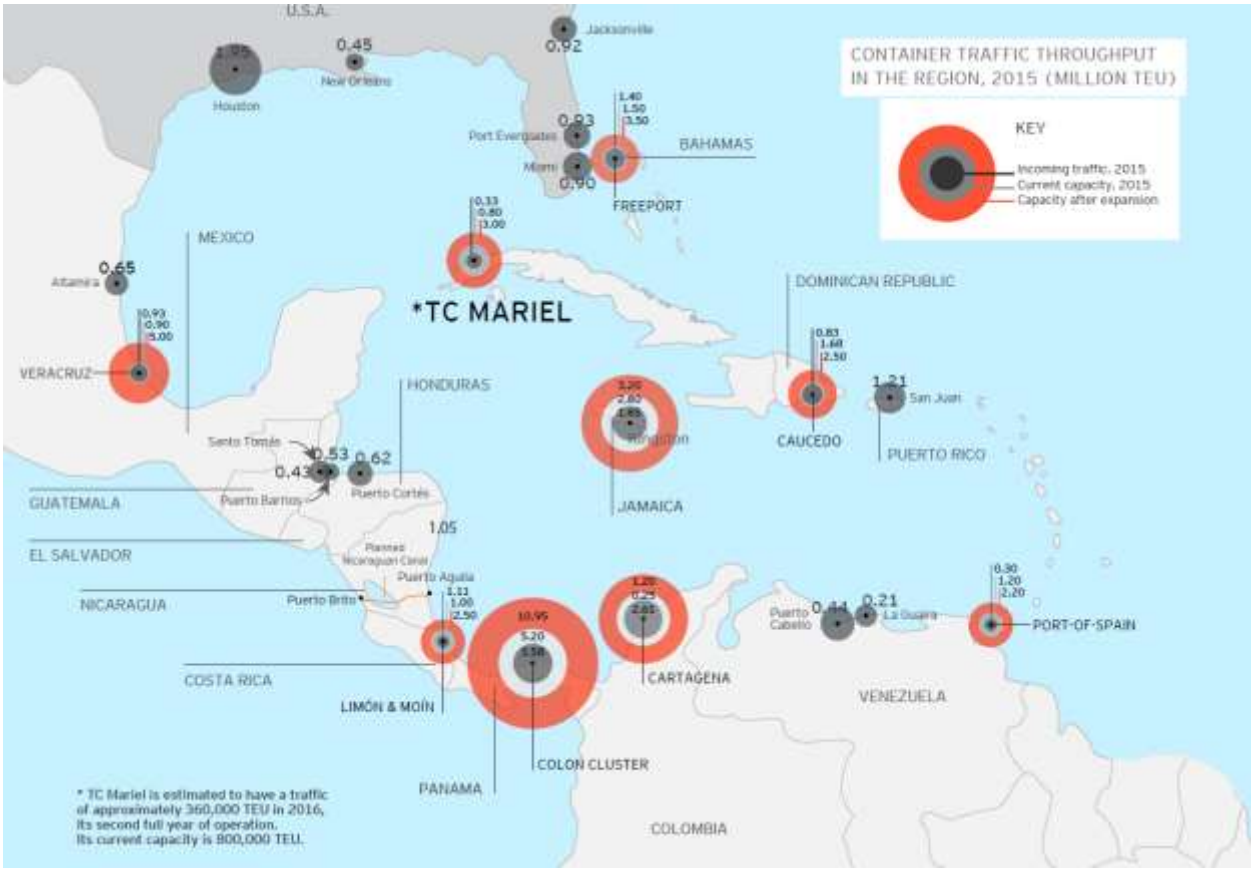
Source: (*13*).

Port Mariel has a modern container terminal with 702 m[10] of dock space and has capacity to handle super-post-Panamax vessels (*16*) with drafts of up to 50 ft. The container terminal is managed by the Singaporean port operator PSA International (*1615*). It has four ship-to-shore cranes, two railway cranes, and 12 yard cranes, which allows for a capacity of 800,000 TEUs per year (*13*). A number of major shipping lines offer scheduled services to the Port of Mariel, including Melfi Marine, Maersk Line, MSC, CMA CGM, Hamburg Sud, Hapag Loyd, ZIM Line, COSCO, Evergreen, Crowley Marine, and Nirint Shipping. These shipping lines connect Mariel with South Florida, Asia, Latin America, Europe, Canada, and the Mediterranean (*13*).

In addition, the French shipping company CMA CGM has entered into a joint venture with Almacenes Universales S.A. (a Cuban state company) to develop a logistics platform at the Port of Mariel that includes 10,000 m^2 of warehouses and 5,000 m^3 of refrigerated warehouses (*5*). Port Mariel will also contain a special development zone for industrial investments and an oil

[10] It has been reported that the dock space at the Port of Mariel can be extended to 2,140 m (*5*).

logistics platform. Eventually, Port Mariel will expand to include an area of 316 acres, a 2,400 m long dock, and the capacity to handle 3 million TEUs per year. The position of the port is considered strategic since it is within a 1,000 mi radius of 32 ports in 11 countries (*17*). Figure 5 illustrates the location of Port Mariel and the container traffic handled by major ports in the region in 2015.



Source: (*13*).

Figure 5. Container Traffic at Port Mariel and in the Region (2015).

Port Mariel has the capacity to handle up to 1 million containers per year, but it is currently operating at about 30 to 40 percent of capacity. The Port of Mariel is served by a two-track rail line that connects the port with Havana and with Cuba's national rail network. The rail connection started operations in July 2014 (*13*).

Initial challenges reported at Port Mariel include delays in accessing the dock at the port due to the narrow entryway and restrictions on ships entering the port under dangerous wind conditions. These challenges can be addressed through dredging and the installation of windbreaks. Shipping costs are also increased by a time-of-day restriction. Ships are not allowed to enter the port after 6:00 p.m. This restriction requires ships to dock until the next morning, increasing turnaround time for vessels (*5*).

Road Infrastructure

Roads are a key component in the movement of freight in Cuba. About 70 percent of total freight moved within Cuba moves by road, less than 30 percent moves by rail, and 1 percent moves by water and air (see Table 8) (*5*).

Table 8. Freight Transportation in Cuba by Mode (thousand tons).

Mode	2009	2010	2011	2012	2013	2014
Rail	9,926.1	12,774.8	16,466.4	16,617.2	16,879.4	16,892.8
Road	41,567.2	31,853.7	31,196.6	36,956.3	41,963.9	41,383.0
Sea	452.9	1,057.6	527.6	385.7	377.6	432.6
Air	9.7	10.5	8.6	9.6	7.5	8.9
	51,955.9	45,696.6	48,199.2	53,968.8	59,228.4	58,717.3

Source: Adapted from (*5*).

Cuba's roads require investment. Since Cuba's highways were originally built for military purposes, these highways often bypass large cities and towns. To remedy the situation, paved highways have been connected to major cities and towns via unpaved secondary roads (*5*). Of the 71,500 km of roadways in Cuba, only 28,000 km are paved (*18*).

In general, Cuba's roads need maintenance and improved signaling. These conditions require trips to be well planned and organized since travel time can be long. Further, driving at night is not advised. In Cuba, the roads are classified as:

- Expressways (autopistas): These roads are typically four to six lanes wide. They lack perimeter fencing and telephone systems to use in case of emergency. There is, however, cell phone coverage along these roads. Intersections with other expressways and railways are common. The La Habana–Matanzas (Vía Blanca), Matanzas-Varadero, and La Habana–Pinar del Río road corridors are in the best condition.
- Main highways (carreteras): These roads are the backbone of the highway network in Cuba. They usually have a single lane in each direction with speed limits of 80 km/hr. Traffic volumes on these roads tend to be high, especially on the Carretera Central.
- Other highways: These roads usually have a single lane between 5 and 6 m wide and speed limits between 60 and 80 km/hr.
- Secondary roads (caminos): These roads tend to be unpaved, and access depends on the weather (*18*).

Rail Infrastructure

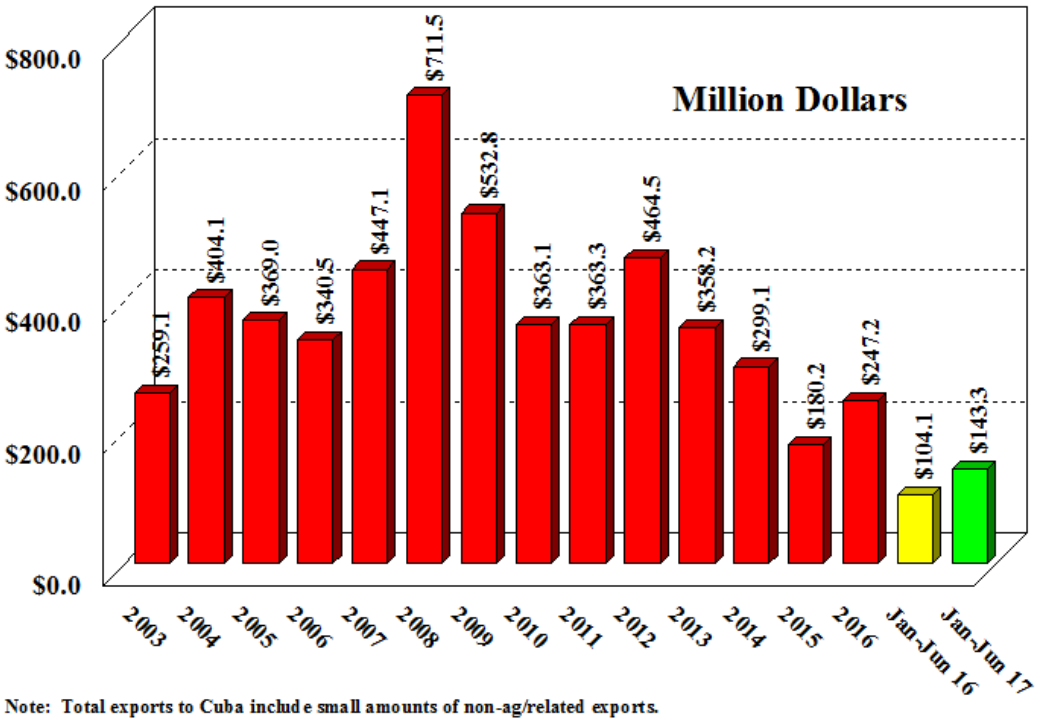
Cuba has approximately 4,226 km of railway. Although Cuba's main rail lines are generally considered to operate at relatively high standards, investments are still needed in several areas to reduce costs and increase efficiency. For example, although rail connections are provided to

ports, investments are still needed to provide on-dock or near-dock access. In addition, the rail signaling system and locomotive fleet need to be improved and updated (*5*).

A number of investments in Cuba's rail system are planned. Union de Ferrocarriles de Cuba plans to modernize its railroads between 2016 and 2021 (*13*). Additional investments will be undertaken by Uralvagonzavod (UVZ), a Russian company (*5*), and Russian Railways (RDZ), in collaboration with Cuban Railway Union (Union de Ferrocarriles de Cuba). UVZ plans to invest $26 million in a rail logistics hub and will also modernize and expand "a rail maintenance and assembly plant in Santa Clara" (*13*). RDZ will work on improvements to the central line between Havana and Santiago de Cuba, connections between Cienfuegos and Santa Clara, and a new "fast transit" route to Varadero. The rehabilitation projects will include new communication and signaling equipment, as well as the introduction of modern standards of operation (*19*).

Chapter 7. The Potential for Texas Agricultural Exports to Cuba[11]

As mentioned earlier, the U.S. government placed a partial trade embargo on Cuba in 1960 and a full trade embargo in 1962. However, the Trade Sanctions Reform and Export Enhancement Act of 2000 permits the export of agricultural, food, and medical products to Cuba on a cash-in-advance basis. Since then, U.S. exports have expanded, reaching a record $711 million in 2008 before falling to $180 million in 2015 and rebounding back to $247 million in 2016 (Figure 6). Through May 2017, exports to Cuba have increased relative to the same period in 2016, due in part to the efforts by the Obama administration to reestablish diplomatic relations and reduce restrictions on trade and investment with Cuba. The Trump administration has reversed some of the efforts of the previous administration, so the rebound in U.S. exports might be short lived. The reduction in trade with Cuba from its peak were due in part to Cuba's desire to completely end the U.S. embargo, the ban on U.S. poultry due to avian influenza, and weak economic conditions in Cuba along with more favorable credit terms from other trading partners. The decline in U.S. exports has occurred as the market for Cuban food imports reached over $2.0 billion in 2016, spurred largely by the extension of credit by U.S. competitors.



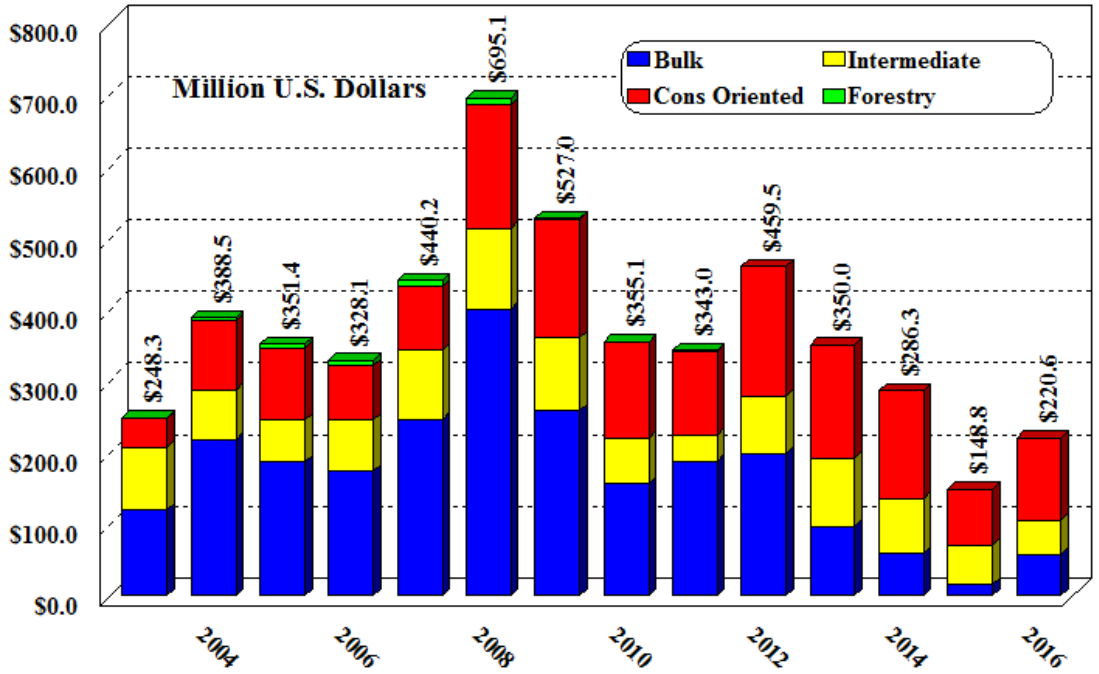
Note: Total exports to Cuba include small amounts of non-ag/related exports.

Source: (*20*).

Figure 6. Total U.S. Exports to Cuba (2003 to 2017).

[11] This chapter of the report was prepared by Drs. Luis Ribera (Associate Professor and Extension Economist and Director, Center for North American Studies, Texas A&M AgriLife Extension Service), Flynn Adcock (International Program Coordinator and Assistant Director, Center for North American Studies, Texas A&M AgriLife Research), and Parr Rosson (Head, Department of Agricultural Economics, Texas A&M University).

The vast majority of U.S. exports to Cuba are agricultural and food products. For instance, of the $711 million in total U.S. exports to Cuba in 2008, agricultural, food, and forestry products totaled $695 million, or 98 percent (Figure 7). Prior to 2013, U.S. exports to Cuba were primarily bulk products such as corn, wheat, rice, and soybeans. In more recent years, consumer-oriented products such as poultry meat, other meats, and dairy have made up the majority of U.S. exports to Cuba. The balance is intermediate products such as soybean meal, soybean oil, and animal feeds. More than half of all U.S. exports to Cuba in 2016 consisted of frozen chicken leg quarters and thighs. Soybeans and soybean meal accounted for one-fourth, with the rest being corn, animal feeds, dairy products, and pork. A small number of medical products and agricultural chemicals were also exported.



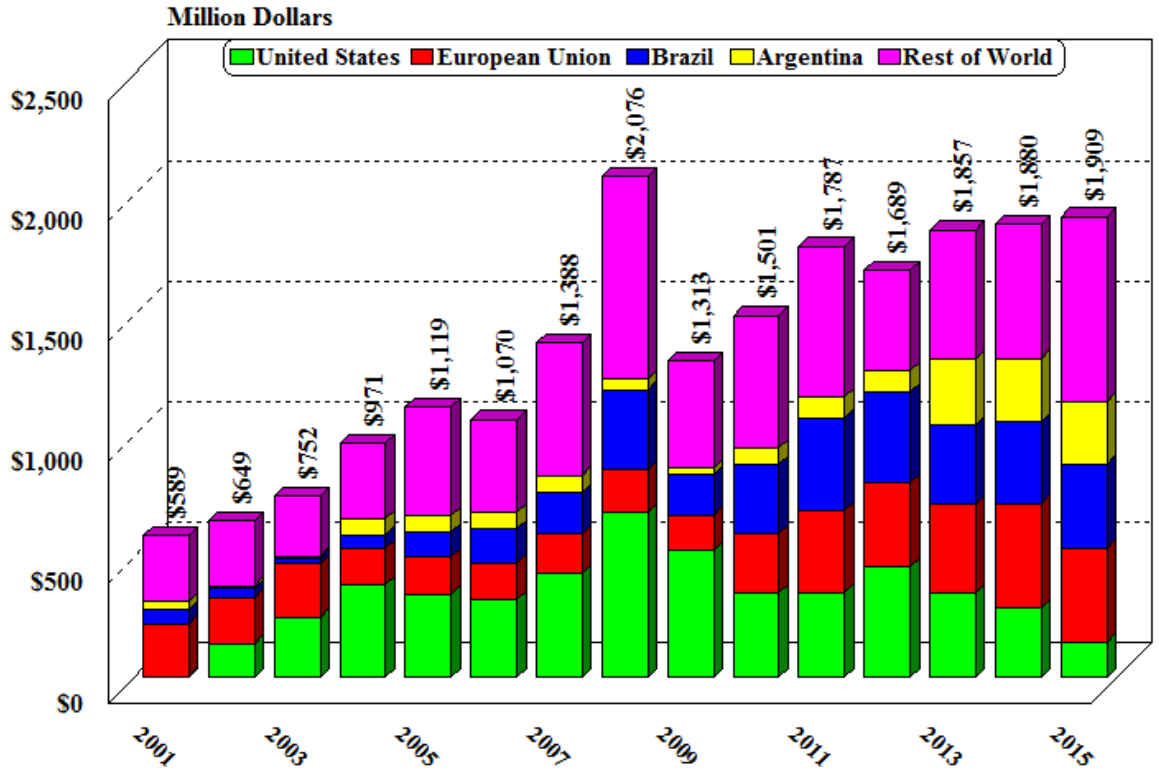
Source: (*21*).

Figure 7. Composition of U.S. Agricultural and Forestry Exports to Cuba.

The Cuban Market for Agricultural and Food Products

The restoration of diplomatic relations between the United States and Cuba in July 2015, coupled with other initiatives by the Obama administration in January 2016, has increased interest in the Cuban market. In an effort to better identify Cuban market potential, it is important to determine Cuba's total agricultural and food imports and their sources. Figure 8 shows that Cuba has gradually increased food imports from $589 million in 2001 to $1.9 billion in 2015, with a peak of $2.1 billion in 2008 due mainly to high commodity prices. Imports from the United States, shown in green, went from virtually zero to dominating the Cuban food market in certain years from 2003 to 2010. In recent years, the European Union (EU-28), Brazil, and Argentina have become the top sources of Cuban agricultural and food imports.

Four suppliers—the United States, the EU-28, Brazil, and Argentina—account for 63 to 71 percent of Cuban food imports depending on the year. Not shown in Figure 8 are China and Chile, both of which have about 2 percent of the Cuban market, and Vietnam, which has shipped large volumes of broken rice to Cuba since 2008.



Source: (*22*).

Figure 8. Competition for the Cuban Food Market.

The highest-valued Cuban agricultural and food imports are wheat, corn, dairy products, poultry meat, and rice. All of these products are important to Texas. Further, prepared meats, dry beans, animal feeds, and beef are also imported by Cuba in various volumes. Other products imported in larger volumes but of lesser importance to Texas are soybeans and soybean products as well as coffee, tea, and cocoa preparations. In the following overview, each product category important to Texas will be discussed. Different baseline levels were chosen for each product due to the different export patterns and levels of competition for each commodity. Moreover, 2008 exports were not used as a baseline because it was an unusually high year for U.S. exports to Cuba.

Wheat

Cuba imported about $299 million worth of wheat in 2013, with the EU-28 supplying about 55 percent and Canada supplying about one-quarter of the total. While most Cuban wheat imports previously came from the United States, no U.S. wheat has entered Cuba since 2011. U.S. wheat exports to Cuba totaled $70.2 million in 2007, $135 million in 2008, and $73 million

in 2009. If the United States returns to 2009 levels, then Texas could account for about $2.5 million of those exports.

Corn

Cuba imported about $290 million worth of corn in 2013, with the EU-28 supplying about 43 percent, the United States supplying 20 percent, and Brazil supplying 14 percent. While U.S. corn exports to Cuba averaged $42.5 million annually in 2013–2014, the average from 2009–2012 was $115.4 million per year. Texas could account for about $2.6 million of U.S. corn exports to Cuba if 2009–2012 levels are reached.

Dairy Products

Cuba imported about $215 million worth of dairy products in 2013, with most of that being dry or condensed milk. Cuba has a wide variety of sources for dairy products; however, the EU-28 and Argentina each has significant shares. U.S. dairy exports to Cuba have averaged $3.2 million annually since 2009, with much of that being donated. Prior to that time, U.S. dairy exports topped $13 million in each of 2006 and 2008 and averaged just under $30 million in 2004–2005. It is likely unrealistic to expect U.S. exports to return to levels of a decade ago, but if the United States could maintain the recent average, Texas would likely account for about $330,000 of those exports.

Poultry Meat

Cuba imported $200 million worth of poultry meat in 2013, with the United States supplying about 72 percent and Brazil supplying about 18 percent. This is one product category where the United States has maintained a strong market presence in Cuba. If the United States can maintain these levels, Texas would account for about $10 million of those exports.

Rice

Cuba imported about $182 million worth of rice in 2013; however, much of this amount was lower-quality broken rice from Vietnam. Brazilian rice exports to Cuba have averaged about $62 million per year since 2012, while Argentina has begun to export more rice to Cuba as well, with $16 million in 2014. While U.S. rice exports to Cuba averaged $41 million from 2004–2007, there have been no U.S. rice exports to Cuba since 2008, except for a small shipment worth $252,000 in February 2017. If the United States could capture a quarter of the $73 million in rice supplied by Brazil and Argentina in 2014, then Texas could account for about $847,000 of those exports.

Animal Feeds

Cuba imported about $86 million worth of grain-based animal feeds in 2013, with Argentina supplying about 56 percent and the United States supplying about 20 percent. However, U.S. feed exports to Cuba, which include dried distillers grain and other feed preps, were less than $10 million in 2014. U.S. animal feed exports averaged about $28 million from 2007–2013. If the United States could return to the $28 million level, then Texas could account for about $1.0 million of those exports.

Dry Beans

Cuba imported about $78 million worth of dry beans in 2013, with China and Canada each supplying a little over $32 million. While Argentina did not supply many dry beans in 2013, it averaged just under $7 million over the past five years. While the United States has not exported any dry beans to Cuba since 2011, exports reached a high of $22 million in 2006 and averaged just under $6 million from 2009–2011. If the United States could return to 2009–2011 levels, then Texas could account for about $87,000 of those exports. Possibly more important is that when U.S. dry beans are exported to Cuba, they are often shipped through the Port of Corpus Christi as the point of departure.

Other Products

Cuba imported about $7.5 million worth of beef and $4.5 million worth of potatoes in 2013, with Canada supplying most of the beef; the source for potatoes is unknown. If the United States could capture 25 percent of the Cuban market for beef and potato imports, then Texas could account for about $254,000 in beef exports and about $18,000 in potatoes. Further, Cuba imported a little over $3 million in cotton each year from 2011–2013. Until 2012, most of that was U.S. cotton. If the United States could reclaim half of the market, it could result in $495,000 in cotton exports from Texas to Cuba.

Economic Impacts on Texas

If the estimated exports to Cuba from above were realized, Texas exports to Cuba would reach $18.8 million annually (see Figure 9). In addition, these exports would require support in the amount of 24.1 million from supporting sectors and result in total economic impacts of $42.9 million throughout the Texas economy. Gains in output would occur for poultry meat, wheat, corn, animal feeds, rice, cotton, dairy, and other meats. Increases in total business activity attributed to exports to Cuba would be $10.6 million for poultry meat, $3.0 million for wheat, $2.8 million for corn, and $2.5 million for animal feeds. Output would also increase for rice, cotton, dairy, and other meats, all in the $383,000 to $852,000 range.

Important supporting sectors that do not have any exports to Cuba but that would experience increased output include other agricultural production, $6.4 million; wholesale and warehousing, $2.0 million; finance and business services, $1.6 million each; real estate, $1.5 million; transportation, $1.4 million; and petroleum and products, $1.3 million. All other supporting sectors are estimated to contribute $5.6 million in total additional business activity to the Texas economy. Further, all of this additional output would help to increase the gross state product of Texas by $13.7 million per year.

In addition to positive impacts for the product sectors, these exports to Cuba would require $24.1 million in additional business activity and 214 new jobs. A large portion of the new jobs (83) would be required in agricultural sectors that produce goods for export to Cuba. There would be an additional 131 jobs attributed to the sectors that provide inputs and services needed

to support exports to Cuba. Major gains can be anticipated in sectors such as other supporting agricultural sectors, business services, transportation, and wholesale and warehousing.

	Impacts on Output ($1,000)			*Employment*
	Direct	**Indirect & Induced**	**Total**	**Jobs**
Total	**$18,783**	**$24,117**	**$42,900**	**214**
Export Sectors				
Poultry Meat	$10,013	$624	$10,637	40
Corn	$2,706	$319	$3,025	18
Wheat	$2,537	$300	$2,837	17
Animal Feeds	$1,207	$1,268	$2,474	2
Rice	$847	$5	$852	1
Cotton	$495	$56	$550	3
Dairy Products	$330	$24	$354	0
Processed Meat Products	$289	$156	$444	1
Beef	$254	$129	$383	1
Potatoes	$18	$4	$22	0
Selected Supporting Sectors	**Indirect**	**Induced**	**Total**	
Other Ag	$6,359	$34	$6,393	46
Wholesale/Warehousing	$1,650	$311	$1,962	8
Finance	$924	$680	$1,604	9
Business Services	$1,124	$453	$1,576	14
Real Estate	$622	$924	$1,546	6
Transportation	$1,247	$156	$1,402	8
Petro/Chemicals	$1,035	$225	$1,260	1
Health Care	$8	$712	$720	7
Food and Beverage Places	$78	$376	$454	7
Retail	$98	$330	$428	5
	Direct	**Indirect/Induced**	**Total**	
Impacts on Gross State Product ($1,000)	**$2,602**	**$11,073**	**$13,675**	

Source: (*10*).

Figure 9. Economic Impacts of Texas Exports to Cuba.

Potential Roles of Texas Ports

U.S. exports to Cuba could benefit the state by moving more cargo through Texas ports. Over the last dozen years, virtually all U.S. agricultural exports to Cuba have moved through southern ports due to geographic advantages. Historically, Louisiana ports, led by New Orleans, Gramercy, and Baton Rouge, accounted for an average of 48 percent of all U.S. exports to Cuba from 2003–2013 before dropping slightly to 46 percent in 2016. One reason for this decline is that in the past, bulk products came down the Mississippi River to Louisiana ports for export. The main products typically moving through Louisiana ports to Cuba are corn, soybeans and

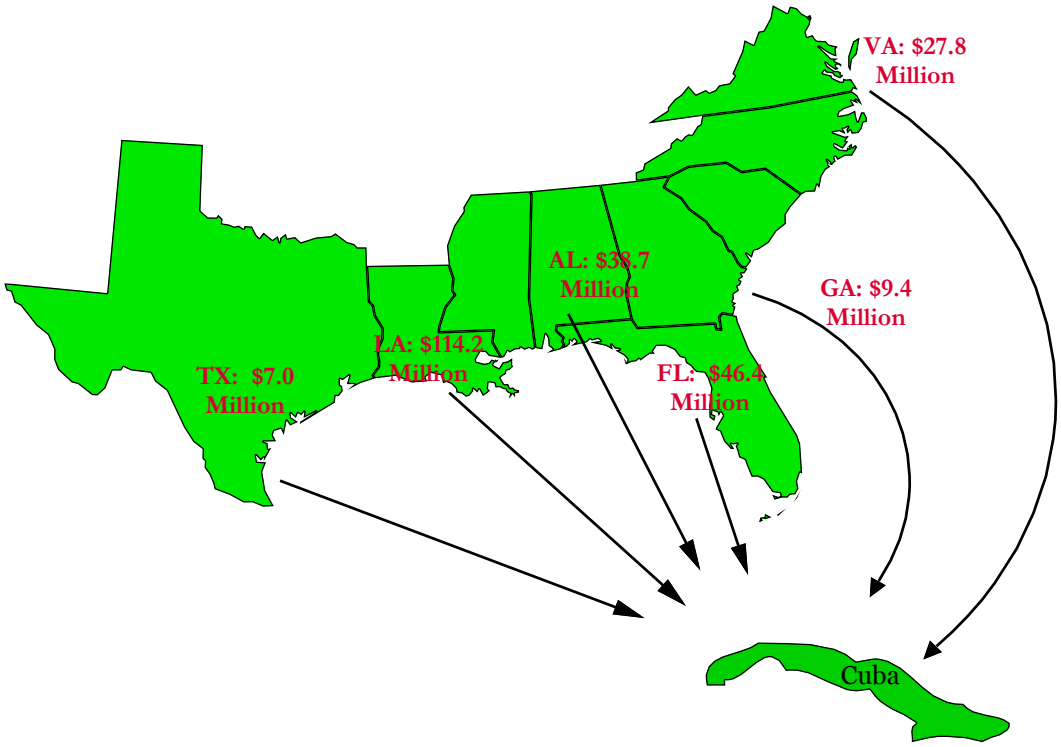
soybean products, dried distillers grain, wheat, and some poultry meat. When Cuba was purchasing U.S. wheat and rice, much of that was shipped through Louisiana ports. As the mix shifted more toward intermediate and consumer-oriented products, ports in other states became more competitive.

Florida and Virginia ports have since increased in importance. Florida ports, led by Port Everglades, Jacksonville, and Tampa, have grown from about 10 percent during 2003–2004 to an average of 25 percent for 2010–2014. In 2015, exports through Florida ports accounted for 19 percent of U.S. exports to Cuba. Most of the products moving through Florida ports are poultry meat, animal feeds, and edible swine offal. Virginia ports, namely Norfolk, now account for about 11 percent of U.S. exports to Cuba after accounting for less than 4 percent from 2003–2008. Most products shipped through Norfolk are soybeans and soybean meal. Alabama, Mississippi, and, more recently, Georgia have accounted for varying amounts of exports to Cuba.

Texas ports had a substantial share of exports to Cuba from 2003–2009, with an average of 18 percent of U.S. exports to Cuba moving through the ports of Houston, Freeport, Corpus Christi, Beaumont, Galveston, and Port Arthur. The peak year was 2008, with $143 million worth of agricultural and food products moving through Texas ports to Cuba. Further, 2007 saw $95 million moving through Texas ports, with 2009 at $80 million and 2004 at $77 million. Rice, wheat, poultry meat, and dry beans were among the leading products shipped through Texas ports prior to 2010. However, from 2010 to 2015, U.S. exports to Cuba through Texas ports averaged less than 2 percent and in 2016 accounted for 3 percent. Sporadic shipments of wheat, dry beans, and insecticide along with selected consumer oriented products have used Texas ports for exports to Cuba.

There are a couple of ways to directly increase the level of U.S. exports to Cuba through Texas ports. The first is to promote the use of Texas ports with exporters to shift their exports to Texas regardless of where the product originates. While there is fierce competition among U.S. ports for U.S. poultry meat exports to Cuba, it is also currently the largest export to Cuba. Efforts to attract poultry meat exports back to Texas could help return Texas to pre-2010 levels. One major problem affecting Texas ports, however, is the lack of direct container service to Cuba. Because of this, Texas products must be shipped via truck or rail to Florida, then loaded on barge or ship for export to Cuba. Consequently, value-added exports from Texas tend to be higher priced than other states.

Another approach which could have a positive impact on Texas ports is to promote the purchase of U.S. rice, wheat, and dry beans as exports to Cuba. The United States lost the Cuban rice market in 2008 largely due to a period of high U.S. rice prices during which Cuba switched to Thailand and Vietnam. The United States has not exported wheat or dry beans to Cuba since 2011. With new competition from the EU-28, Brazil, Canada, Argentina, and China for these products, this effort will be difficult. However, if successful, it is likely that Texas ports would be a good option for the export of these products to Cuba, just as in years past.



Source: (*23*).

Figure 10. Exports to Cuba by Port State: Total $247.2 Million, 2016.

Concluding Remarks

The Cuban import market for agricultural and food products reached nearly two billion dollars in 2016. U.S. exporters had a portion of those imports as recently as 2012. However, U.S. cash-in-advance requirements have led Cuba to purchase a wide variety of agricultural and food products from other countries instead that have more favorable credit terms. Nonetheless, Cuba still imports mainly U.S. poultry meat, soybeans and products, corn and other animal feeds. Actions by the Obama administration to reestablish diplomatic relations and loosen certain travel and business restrictions have spurred interest in the Cuban market. However, recent changes in travel regulations by the Trump administration might slow down that interest.

Competition from other exporters such as the European Union, Brazil, and Argentina will make it more difficult to reclaim previously held market share. However, if Cuba increases its purchases of U.S. agricultural and food products to near previous levels, it could mean that up to $18.8 million of Texas agricultural and food products would be shipped there. These Texas exports to Cuba would be supported by nearly $43 million in total economic activity and 214 jobs. Further, it could also increase exports of U.S. agricultural and food exports through Texas ports regardless of their origin, particularly if there is a return of exporting U.S. wheat and rice to the Cuban market. While this may not happen in the near term, transportation advantages along with changing policies and reinvigorated interest could result in higher exports of U.S. and Texas agricultural and food products to Cuba.

Chapter 8. The Potential for Texas Manufactured Exports to Cuba

U.S. exports of manufactured goods to Cuba have been largely restricted. Far more uncertainty therefore exists about the potential for U.S. and Texas manufactured exports to Cuba given a more open trade relationship. The study team interviewed members of the Texas-Cuba Trade Alliance and the Engage Cuba Coalition to gather insight into the potential for increased manufactured exports to Cuba, and the potential transportation impacts associated with increased trade with Cuba. Five organizations agreed to a telephone meeting with the study team as follows:

- Texas Association of Manufacturers.
- Port of Houston Authority.
- Universal Weather and Aviation.
- Engage Cuba Coalition.
- Texas Association of Business.
- Texas Cuba Trade Alliance.
- Weststar Food Co.

The participants were asked about:

- Current exports to Cuba;
- Expected exports given an open U.S.-Cuba environment;
- Comparison between Cuban and Caribbean markets, including exports to the Caribbean;
- Challenges facing exports to Cuba;
- Texas infrastructure needs given increased trade with Cuba; and the
- Potential of Port Mariel as a transshipment hub.

This chapter summarizes the input received during the telephone meetings.

Current Exports to Cuba

Organization representatives were first asked whether they were aware of any non-agricultural products being exported to Cuba currently. Most of the respondents were not aware of any nonagricultural products being exported to Cuba, with the exception of the representative of the Texas-Cuba Trade Alliance, who mentioned that Texas businesses are already involved in the tourism sector, providing hotel and restoration services. Texas businesses have also been

involved in assisting with electrical services. Weststar Beans, on the other hand, mentioned that the company had not exported any product to Cuba in about five years due to the inability of U.S. exporters to extend credit to Cuba.

Expected Exports Given Open U.S.-Cuba Trade Environment

The study team asked organization representatives which Texas commodities would have the greatest potential to be exported to Cuba given a more open U.S.-Cuba environment. The responses included a variety of products and services:

- Beans (from the Midwest exported through the Port of Corpus Christi), chicken, and beef.
- Oil and gas well supplies, as well as water filtering technology (for oil companies).[12];
- Auto parts.
- Telecommunications equipment and cell phones.
- Travel services (airlines).
- Software.
- Financial and investor services.
- Pharmaceutical products.
- Technology.
- Thermostats.
- Windmills.
- Interstate and service station construction and equipment.
- Resins.

One respondent mentioned that Cuba is limited in resources, and most respondents indicated that Cuba needs to import a variety of products. There is, however, great uncertainty about the volumes that Texas would export to Cuba. One respondent mentioned that Cuba is not a huge market and therefore export volumes are not expected to be large. Weststar Beans reported that the company used to ship about 5,000 metric tons of beans to Cuba, and the company expects that it would ship a similar volume if the relationship becomes more open, but in smaller shipments. Weststar Beans observed that the ability for Texas exporters to extend credit would help Texas exports to Cuba. This would result in exports of smaller shipments since these shipments would be easier to finance.

[12] Cuba has untapped oil and gas resources. It will need Texas's oil-related supplies when drilling starts.

Comparison between Cuban and Caribbean Markets

The study team asked participants how the Cuban market compares to the rest of the Caribbean. Most of the respondents who answered this question felt that Cuba was different from other islands in the Caribbean. It was pointed out that Cuba is the largest island in the Caribbean and although it is limited in natural resources, it has a large tourism sector that is expected to grow in the future. Although Cuba is currently not importing as much food as other Caribbean islands—largely because of the population's low purchasing power—it is believed that the situation will change in the future as the tourism sector grows. Respondents also argued that Cuba is different from the rest of the Caribbean in that its population is perceived to be well educated with a high life expectancy. It was mentioned that Cuba should be compared with Japan in the 1950s rather than with the rest of the Caribbean.

Comparison of Cuba to Dominican Republic and Japan

In an effort to understand the potential export market for Texas to Cuba, the study team compared Cuba to the Dominican Republic and attempted to compare Cuba to Japan (in the 1950s). Table 9 provides data for a number of socioeconomic indicators to compare Cuba, the Dominican Republic, and Japan in the 1950s. Table 9 shows that more limited information is available for Japan in the 1950s.

Table 9. Socioeconomic Indicators for Cuba, the Dominican Republic, and Japan in 1950.

Indicators	Cuba	Dominican Republic	Japan (data for 1950)
Geographic size (area) (*24*)	110,860 sq km	48,670 sq km	377,915 sq km
Population (2015) (*13*)	11.2 million	10.5 million	84.1 million (*25*)
Nominal GDP (2015) (*13*)	US$82.4 billion	US$67.1 billion	
GDP per person (*13*)	US$6,920	US$6,374	
Purchasing power parity (PPP) per person (*13*)	US$7,301	US$14,212	
GDP growth (*13*)	4.3%	7.0%	
U.S. exports (2016)	US$0.25 billion (*6*)	US$7.76 billion (*26*)	
Texas exports (2016)	US$0.22 million (*8*)	US$1.18 billion (*27*)	
Life expectancy (years) (*13*)	79.4	73.5	
Infant mortality rate (deaths per 1,000 live births) (*13*)	5.0	23.6	
Maternal mortality rate (deaths per 100,000 live births) (*13*)	80	100	
Physicians per 10,000 people (*13*)	67.2	14.9	
Literacy rate (% aged 15 and above) (*13*)	99.8	90.9	98%*
Mean years of schooling (*13*)	11.5	7.6	
% of tertiary school-aged population enrolled (*13*)	48	46	

* Estimate based on survey (*28*).

Japan

Table 9 shows that Japan in 1950 had a similar literacy rate as Cuba in 2015, but the island is more than three times larger than Cuba, and Japan's population in 1950 was more than seven times larger than that of Cuba in 2015. Data on the other socioeconomic indicators included in Table 9 were not available.

A review of the literature revealed that Japan adopted more open economic policies and began trading with the rest of the world in the 1950s. The period marked an increase in globalization, systematic advances, and increased economic partnership. Nonetheless, Japan's exports grew very slowly at the beginning of the 1950s (*29*). In March 1954, the United States entered into a mutual security agreement with Japan. This agreement resulted in a dramatic increase in U.S. exports to and imports from Japan. For example, the 1953 value of Japanese imports from the United States was $669 million. Between 1953 and 1959, the value of imports from the United States increased to $931 million. Similarly, the value of Japanese exports to the United States increased from $234 million in 1953 to $1.045 billion in 1959 (*30*). Exports from Japan to the United States in 1962 equaled $1.4 billion (*31*). It is not clear how the trade relationship between Japan and the United States would have evolved without the 1954 security agreement. The 1950s was, however, a decade of significant economic development for Japan—partly because of the 1954 security agreement and partly because of an increase in regional trade and investment (*32*).

Dominican Republic

Cuba and the Dominican Republic are the two largest islands in the Caribbean—both in terms of geographic area and population size. Although the Dominican Republic is less than half the geographic size of Cuba, the two islands have a similar-sized population, and both islands have a strong tourism industry. Further, the Dominican Republic's GDP is comparable to Cuba's GDP—a figure that could point to comparable market sizes. A noticeable difference, however, is that the PPP per person in Cuba is about half that of the Dominican Republic.

PPP aims to compare the income levels of different countries by measuring the purchasing power of different currencies (i.e., the quantity of the currency needed to buy a given basket of goods and services).

In 2016, the value of U.S. exports to the Dominican Republic amounted to $7.76 billion, comprising:

- Petroleum and coal products: $1,145,117,926 (14.8 percent).
- Food products: $793,213,654 (10.2 percent).
- Miscellaneous manufactured commodities: $637,426,129 (8.2 percent).
- Chemicals: $551,096,341 (7.1 percent).

- All others, including but not limited to electrical equipment, appliances, and components; computer and electronic products; machinery, except electrical; and transportation equipment: $4,629,200,299 (59.7 percent) (*26*).

The Dominican Republic was Texas's 41st largest trading partner in 2016 at $1.34 billion. Specifically, Texas exported the following commodities to the Dominican Republic:

- Petroleum and coal products: $660,804,290 (55.8 percent).
- Oil and gas: $244,744,706 (20.7 percent).
- Chemicals: $134,688,983 (11.4 percent).
- Machinery, except electrical: $20,188,024 (1.7 percent).
- All others, including but not limited to agricultural products; food products; computer and electronic products; electrical equipment, appliances, and components; used or secondhand merchandise; and plastics and rubber products: $123,891,971 (10.5 percent) (*27*).

As can be seen, Texas is a major exporter of petroleum and coal products, oil and gas, and chemicals to the Dominican Republic.

Challenges Facing Exports to Cuba

The study team asked the following questions about the challenges in exporting to Cuba: Do you foresee any specific challenges in exporting to Cuba? Are there any relevant market factors that may affect exports?

Two respondents mentioned the fact that there is currently no scheduled vessel service between Texas and Cuba. Only Crowley ships directly from Port Everglades to Cuba. Port Houston, however, mentioned that if the market with Cuba opens, a direct shipping service between Port Houston and Port Mariel is likely. Port Houston cautioned that it will take time for the United States and Cuba to have an extensive trade relationship. Even if the United States changes its policy toward Cuba today, there will still be challenges in exporting to Cuba. The U.S. policy toward Cuba for the past 55 years has generated negative sentiments in Cuba, and these will take time to change.

Other challenges that were mentioned include:

- Remaining human rights concerns in Cuba.
- U.S. policy toward Cuba (U.S. government may not be willing to enter into a more open relationship with Cuba).
- Legal challenges.

- Transportation infrastructure challenges,[13] although Cuba has been improving its infrastructure.
- Cuba's energy security—largely because of the island's dependence on Venezuela and in part due to the age of the system (i.e., the pipelines are old).

Texas Infrastructure Needs Given Increased Trade with Cuba

The study team asked respondents whether increased exports to Cuba would require additional investments in Texas's trade transportation infrastructure.

Most respondents indicated a need for additional transportation infrastructure in Texas serving trade in general, but not specific to serving trade with Cuba. One respondent stated that Texas's ports need additional dredging, but not because of the Cuban market, which is regarded to be very small. Two respondents highlighted the need for a container service between Texas and Havana or Port Mariel. One respondent mentioned the need for a barge service between Texas ports to allow for the transportation of heavier loads along the Gulf Intercoastal Waterway.

Port Houston mentioned that the port has already been investing billions of dollars in infrastructure to serve global trade, and it is well equipped to serve any new trade with Cuba. Another respondent noted that a global expansion in trade will require more port capacity and noted that Corpus Christi is expected to become a major oil exporter in the future.

Finally, one respondent mentioned that Cuba's infrastructure is not a major concern. The Cuban government has been investing in infrastructure. Cuba's development plan will affect future constraints (i.e., port investments are expensive).

Potential of Port Mariel as Transshipment Hub

A few respondents provided information in response to the following questions: Are you aware of the Port Mariel development in Cuba? Do you think that this development will impact trade flows to Gulf Coast ports (specifically Texas)? How? Will the Port of Mariel support transshipments of Asian trade traversing the Panama Canal?

Five of the respondents were aware of the Port Mariel development, but the perceptions about the impact of this development on trade flows to Texas ports and the potential for Port Mariel to become a transshipment point for Asian trade traversing the Panama Canal varied widely. Two respondents did not believe that

> Port Mariel may serve as transshipment point for South America or small ports in Mexico, but it is too close to Florida to serve as a transshipment point to Texas—this stop would only add to the cost and the transit time of the shipping route. Additionally, Texas already receives transshipments from Asia.

[13] For example, the airports have been updated and will continue to be improved as traffic increases; truck shortages have been addressed, and Port Mariel now accepts roll-on/roll-off shipments.

Port Mariel will become a major transshipment point for Asian cargo because Jamaica (i.e., Port Kingston) and the Bahamas already fulfill this role (see Figure 5). Although it was mentioned that Port Mariel has a slight advantage over the rest of the Caribbean due to the depth of the channel, it would have to compete with existing transshipment points in the Caribbean to gain market share. On the other hand, two respondents noted that it is possible that Port Mariel will generate trade flows to Texas.

One respondent noted that the Cuban government wants to make Port Mariel a regional hub for international shipping. The port has a good rail system and good equipment. Some foreign investment has already been directed to the port, but more investment is still needed. The development therefore is still immature but could meet potential with large investments. Another respondent mentioned that Cuba has had difficulty successfully establishing enterprise zones. The commute to Port Mariel is an hour from Havana, but workers will be paid more, so this enterprise zone may work.

One respondent reminded the study team that the Cuban government becomes a stakeholder in any business seeking to operate in Cuba. Government ownership varies between 10 and 50 percent. The Cuban government will, however, require a lower ownership share if the company provides new opportunities and higher-paying jobs to Cubans. As such, Cuba is looking to establish high-tech companies at Port Mariel—companies that produce goods with high value added (i.e., high-tech facilities, like medical device companies) and goods that can be re-exported.

To understand Port Mariel's potential as a transshipment hub, the study team also reviewed the shipping activity and characteristics of the Port of Kingston. The Port of Kingston currently serves as a transshipment hub due to its infrastructure and geographic location. The Port of Kingston is in the seventh largest harbor in the world. The channel is 46 ft deep and is currently being dredged to nearly 56 ft.[14] The port has three container terminals with a rated capacity of 2.8 million TEUs (*33*). The Port of Kingston's location is central within the hemisphere, making it an effective regional hub. The port is especially well situated to serve the Caribbean and connect the East Coast of the United States to the West Coast of South America. However, in practice, the port serves the north coast of South America, Central America, and the Caribbean islands. The port also serves routes to and from Asia due to its proximity to the Panama Canal. While there are other ports in the Caribbean—Cartagena, Colon, and Caucedo—the Port of Kingston is considered well established (*34*). Table 10 shows the metric tons of cargo and the transshipment cargo handled in the Port of Kingston.

[14] Dredging is anticipated to be completed by December 2018.

Table 10. Port of Kingston Tonnage Handled (2016).

Port of Kingston	Metric Tons
Transshipment Cargo	7,979,781
Total Cargo	13,405,606

Source: (*35*).

Transshipment cargo represented 59.5 percent of all cargo arriving in the Port of Kingston in 2016. This cargo arrived in 2,533 separate ship calls, 1,381 of which carried more than 10,000 tons. While Port Mariel can handle similar tonnage and types of cargo, it will have to compete with the well-established Port of Kingston for market share.

Chapter 9. Conclusions

A more open economic relationship with Cuba offers the opportunity to expand U.S.-Cuba (and Texas-Cuba) trade, increase imports for U.S. products among Cuban consumers, and foster greater productivity in the Cuban economy. An analysis of Cuba's current trade profile offers a glimpse into Texas's potential role given a more open U.S.-Cuba trade environment. In 2014, Cuba's imports comprised 79 percent ($7.3 billion) nonagricultural products and 21 percent agricultural products ($2 billion). Crude petroleum products at $3.2 billion accounted for 44 percent of nonagricultural imports in 2014.

With regard to agricultural commodities, Texas has the potential to increase its exports of poultry meat, wheat, corn, animal feeds, rice, cotton, dairy, and other meats to Cuba. The economic impact of this increase in exports to Cuba could be up to $49.2 million. It also appears that Texas may have the opportunity to export nonagricultural products such as oil products, pharmaceuticals, construction and agricultural equipment, and telecommunications. There is, however, great uncertainty about the volumes and value that Texas would export to Cuba.

While Texas ports seem well positioned to handle any additional cargo increase associated with increased trade with Cuba, questions remain regarding Port Mariel's readiness to handle increased trade, as well the condition of Cuba's transportation infrastructure to support additional trade. Infrastructure challenges include unpaved roads that connect highways to large cities, a need for a more efficient rail system that also provides on-dock or near-dock port access, and delays in accessing the dock at the Port of Mariel due to the narrow entryway and restrictions on ships entering the port under dangerous wind conditions.

Part of the vision for Port Mariel is to be a transshipment hub for Asian cargo destined for the United States or for South America and the Caribbean. While Port Mariel can handle similar tonnage and vessel sizes, it will have to compete with the well-established Port Kingston for market share of the Caribbean and South American transshipments. Port Mariel, for example, has the capacity to handle up to 1 million containers per year, but it is currently operating at about 30 to 40 percent of capacity. The port has a modern container terminal with 702 m of dock space and has capacity to handle super post-Panamax vessels. The port will also have an enterprise zone and oil platforms—developments that may position it as a productive trade port in the long term.

Overall, there is substantial uncertainty about the volume and value of Texas exports to Cuba. Some have argued that even over the long term, Cuba will be a small market for Texas exports because of the island's relatively small population and low per-capita income. The size of Cuba's markets seems to be comparable to that of the Dominican Republic given that both islands have a large tourism sector and similar population size and GDP per capita. In 2016, the Dominican Republic was Texas's 41st largest trading partner at a value of $1.34 billion. Even if Texas trades twice with Cuba what it trades with the Dominican Republic (i.e., $2.68 billion), Cuba would be

Texas's 25th largest trading partner and Texas-Cuba trade would amount to 0.6 percent of Texas's total international trade (or 1.5 percent of Texas's trade with Mexico).

Appendix. Timeline of U.S.-Cuba Relations

March 1958	• Fidel Castro establishes guerrilla operations in Cuba and the U.S. imposes an arms embargo against Batista.
1959	• Batista leaves Cuba and Fidel Castro becomes prime minister.
July 1960	• Cuba nationalizes all U.S. businesses without compensation.
October 1960	• President Eisenhower prohibits all exports to Cuba, excluding food and medicine, and revokes Cuba's sugar quota.
February 1962	• Proclamation 3447, "Embargo on all Trade with Cuba," is enacted by President Kennedy.
April 1962	• Bay of Pigs Invasion fails.
October 1962	• Cuban Missle Crisis occurs.
1964	• Organization of American States (OAS) imposes multilateral economic sanctions on Cuba and breaks diplomatic ties.
1965-1973	• Freedom Flights bring 260,561 Cubans to the United States.
July 1975	• OAS members lift multilateral sanctions against Cuba.
August 1975	• United States permits U.S. foreign subsidiaries to trade with Cuba and cancels rule banning ships engaged in commerce with Cuba from refueling in the United States.
1977	• United States and Cuba establish limited diplomatic relations by opening interests sections in Washington and Havana.
1982	• U.S. Department of State adds Cuba to its list of states sponsoring international terrorism.
1992	• Cuban Democracy Act is implemented.
1996	• In February, Cuban air force fighters shoot down two civilian aircraft flown by the Cuban exile group Brothers to the Rescue. In March, President Clinton enacts the Helms-Burton bill.
2004	• The George W. Bush administration announces new restrictions on U.S. travel to Cuba, including reduced Cuban-American family visits and remittances to the island.
2008	• Cuba's National Assembly elects Raúl Castro president.
2009	• President Barack Obama lifts U.S. government restrictions on family travel and remittances to Cuba.
2011	• Obama administration reinstates permits for U.S. citizens to travel to Cuba for cultural and educational exchanges, increasing people-to-people contact with the island.
2013	• Cuban government enacts a series of immigration and travel reforms, eliminating the requirement of a letter of invitation from abroad.
2014	• President Obama and Raúl Castro announce they will restore full diplomatic ties.
2015	• In May, President Obama removes Cuba from the State Department's list of state sponsors of terrorism. In July, the United States and Cuba restore diplomatic relations and open embasies.
2016	• President Donald Trump proclaims changes to U.S. policy toward Cuba, including prohibiting U.S. business transactions with Cuban state enterprises linked with the military and eliminating individual people-to-people travel to the island.

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