



JULY 2018

IMPACT OF THE U.S. JONES ACT ON PUERTO RICO

PREPARED BY:

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THE JONES ACT: THE FOUNDATION OF THE U.S. DOMESTIC MARITIME INDUSTRY

The Jones Act, section 27 of the Merchant Marine Act of 1920 (46 U.S.C. § 883), has long been regarded as a cornerstone of U.S. maritime policy.

The Jones Act governs the waterborne transportation of merchandise between two points in the United States, requiring it take place on vessels built in the United States, owned by U.S. citizens (at least 75 percent), and manned by U.S. citizen crews. This federal law, along with related cabotage laws, ensures that companies engaging in domestic trades or services compete equally and are fully subject to U.S. laws and regulations.

The Jones Act is pre-dated by numerous U.S. cabotage laws established at the founding of the nation under the First Congress of the United States. Named after Senator Wesley L. Jones of Washington, who was chairman of the Senate Commerce Committee at that time, the Jones Act continues to be upheld on principles of military preparedness, border and waterway security, and commercial vitality.

INTRODUCTION

Reeve & Associates and Estudios Técnicos, Inc. (ETI) analyzed the impact on the Commonwealth of Puerto Rico of the U.S. Jones Act. The Jones Act was enacted in 1920 and requires that all goods transported by water between U.S. ports, including those in the Continental United States (CONUS) and Puerto Rico, be carried on U.S.-flag vessels that are constructed in the United States, are owned by U.S. citizens, and are crewed by U.S. citizens and permanent residents.

The economists produced a fact-based analysis of recent developments in the CONUS/Puerto Rico liner shipping market in order to determine how and to what extent shipping services provided in that market impact the people and economy of Puerto Rico and, in particular, the cost of living within the commonwealth. The researchers evaluated the competitiveness of freight rates in the CONUS/Puerto Rico market with those in similar neighboring Caribbean markets, the quality of service provided by the carriers operating between CONUS and Puerto Rico, and the impact of the carriers' freight rates and quality of service on the price of goods shipped to Puerto Rico from CONUS.

Project Sponsor

The American Maritime Partnership (AMP) is a broad coalition that represents the U.S. domestic maritime services industry. AMP's diverse membership, which spans the United States and its territories, includes vessel owners and operators, shipboard and shoreside workers, shipbuilders and repair yards, equipment manufacturers and vendors, dredging and marine construction contractors, numerous maritime associations, and national security organizations.

Reeve & Associates

Reeve & Associates is a management consulting firm based in Massachusetts that specializes in advising organizations in the public and private sectors on strategy development, market and economic analysis, organizational and operational performance improvement, supply-chain management, and the development of public policy involving maritime transportation and logistics. The firm was founded in 1998 and has dedicated itself to serving clients engaged in domestic and international shipping and logistics by providing a high level of professional counsel based on senior-level experience in both consulting and the maritime transportation industry.

The principal of the firm, John Reeve, has substantial experience in the Jones Act shipping markets, having advised several clients since the 1980s on business strategy in all of the noncontiguous Jones Act markets (Puerto Rico, Alaska, and Hawaii), as well as providing counsel on competitive conditions in those markets to the U.S. Department of Transportation and the Government Development Bank of Puerto Rico.

**Estudios Técnicos, Inc.**

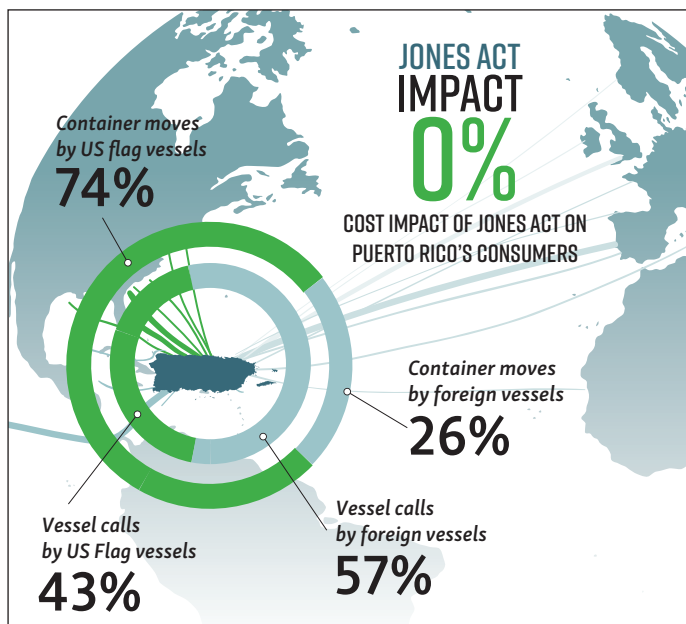
ETI is one of the largest and most respected consulting firms in Puerto Rico. The firm's experience for the past 32 years has seen its practice develop into a leading provider of economic analysis, as well as disaster preparedness, management, and recovery-related consulting services. ETI's senior personnel have extensive experience in the local market and regularly provide business insight to a number of major international firms and stakeholders. ETI provides economic assessments, strategic policy advice, grant writing, grant management, program design, economic impact analysis, planning, and Geographical Information System related services.

ETI has extensive knowledge and experience in commonwealth and municipal emergency response management legal frameworks, structures and practices. Clients include federal, state, not-for profits, and local governments, as well as businesses. The firm has worked extensively with several U.S federal programs, such as the Department of Housing & Urban Development's Community Development Block Grants, and other housing-related programs. Given that businesses in Puerto Rico have suffered two consecutive hurricanes in such a short period of time, ETI has created a specialized unit capable of analyzing and forecasting business operations.



Hurricane Maria struck Puerto Rico on September 20, 2017, with devastating force, creating catastrophic damage to the island's infrastructure including the electric power grid, telecommunications, roadways, and ports, as well as homes and businesses. Shortly thereafter, a number of articles appeared in the U.S. press, including *The New York Times*, claiming that the Jones Act had severely damaged the Puerto Rican economy both over time and in the immediate aftermath of Hurricane Maria. The objective of this report is to clearly describe what role the Jones Act and the U.S. domestic shipping industry have played in providing Puerto Rico with shipping services before the onslaught of the hurricane and afterwards, as well as the impact on the Puerto Rican economy and people.

Summary of Conclusions



people of Puerto Rico in terms of employment and economic impact contributing well over 1,000 jobs to residents of Puerto Rico that provide an overall annual economic contribution to the commonwealth in excess of \$250 million.

- The United States has cabotage restrictions similar to the Jones Act that apply to companies providing services within the country in the cases of the airline, railroad, and trucking industries. Neither the Jones Act nor any other law prohibits or penalizes foreign-flag vessels from bringing foreign-sourced goods to the island. In 2016, 57 percent of traffic moving through Puerto Rico's ports was carried by foreign-flag vessels operating in international trade.
- Puerto Rico is subject to the same U.S. customs regulations and tariffs that are applicable to all other ports on the U.S. mainland and in Alaska and Hawaii.
- The Jones Act provides significant benefits to the people of Puerto Rico in terms of employment and economic impact contributing well over 1,000 jobs to residents of Puerto Rico that provide an overall annual economic contribution to the commonwealth in excess of \$250 million.
- The CONUS/Puerto Rico domestic carriers offer dedicated ocean services from the U.S. Atlantic and Gulf Coasts that provide a high level of service frequency and rapid transit times. The fact that these services operate directly between U.S. mainland ports and Puerto Rico provides shippers with a high level of service reliability, as well as high frequency and rapid transits that would be lost if the Jones Act were to be waived and foreign-flag vessels entered the trade serving a variety of Caribbean ports in addition to Puerto Rico.
- A number of recent studies and press reports have questioned the value of the Jones Act to Puerto Rico. Essentially all of their claims of negative impact are not supported by the facts and ignore the clear examples of positive impact that the Jones Act provides. Particular weaknesses in these studies and press reports that seriously undermine their validity include the following:
 - The retail prices of goods in Puerto Rico are essentially the same as on the mainland, and freight rates for shipments between the mainland and Puerto Rico are very similar or lower than rates for shipping between CONUS and neighboring islands of Puerto Rico, such as the U.S. Virgin Islands, Haiti, and the Dominican Republic.

- If the Jones Act were to be waived for Puerto Rico, the costs of any foreign-flag vessel operated in that U.S. domestic trade would rise substantially as it would have to comply with U.S. tax, labor, and employee protection laws that would virtually negate any cost advantage provided by foreign registry.
 - A Government Accountability Office (GAO) study (2013), done at the request of the commonwealth, also found that because there are many other factors besides the Jones Act that affect freight rates, “it is difficult to isolate the extent to which freight rates between the U.S. and P.R. are affected by the Jones Act.”
- Shipping costs between the mainland and Puerto Rico make up only a small percentage of the retail prices of goods on the island — for example, ocean shipping costs account for only 3 cents (or 2 percent) in the retail price of \$1.58 for a can of chicken noodle soup sold in San Juan...and the retail price for the same soup from the same retailer is the same in San Juan as in Jacksonville, Florida from where it was shipped.
- The volume of freight shipped between the U.S. mainland and Puerto Rico has declined substantially since 2004 — coincident with weakening growth in the commonwealth’s economy and a decline in its population as a large number of residents have migrated to the mainland.
- Shipments from the U.S. mainland to Puerto Rico trade bring to the commonwealth a variety of consumer goods that are critical to the welfare of the people of Puerto Rico and that play a key role in their daily lives. The outbound trade from Puerto Rico is a key conduit for high-value merchandise that is a significant contributor to the wealth of the commonwealth.
- Four carriers currently serve the CONUS/Puerto Rico shipping market with a variety of vessel and equipment types designed to meet the needs of shippers in the trade. These assets are specially designed to efficiently integrate Puerto Rico into the highly effective logistics systems of the mainland through such resources as 53-foot containers and trailers that provide significant benefits over standard 40-foot equipment used in international shipping services. The cost savings provided by the carriers’ use of high-capacity intermodal equipment that is consistent with those used throughout U.S. domestic transportation provides an annual benefit of around \$92 million to customers in CONUS and Puerto Rico.
- The Port of Jacksonville, Florida, plays a key role as a logistics hub for Puerto Rico. Typically, around 77 percent of CONUS/Puerto Rico containerized cargo shipments move through Jacksonville, which is 39 percent of the port’s total container throughput.
- The Jones Act carriers in Puerto Rico’s service have invested substantially in new assets and resources in recent years including four state-of-the-art Liquid Natural Gas powered container ships that are both economical and environmentally friendly, major developments in marine terminals in Puerto Rico and Jacksonville, Florida; and intermodal equipment such as high-capacity containers and trailers. The total investment in the Puerto Rico Jones Act trade by the four carriers over the last five years exceeds \$1 billion.
- Carrier market shares in the CONUS/Puerto Rico trade reflect a strong level of competition over time — since 2000, the carriers’ ocean freight rates in real terms have not increased (i.e., have only increased in line with overall U.S. inflation) while U.S. intercity truckload linehaul rates have increased substantially above the overall rate of inflation.
- The Jones Act carriers played a critical role in relief and recovery efforts in Puerto Rico after Hurricane Maria, not only in immediately providing sufficient ocean transport capacity to move humanitarian goods and infrastructure rebuilding equipment and supplies to the island, but also in acting in an overall logistics management role to ensure that shipments met key needs on a “door-to-door” basis while coping with major damage to the island’s transportation infrastructure.

THE JONES ACT AND PUERTO RICO

The United States Jones Act

Section 27 of the Merchant Marine Act of 1920, which is commonly known as the “Jones Act” is a U.S. federal statute that regulates maritime commerce in U.S. waters and between U.S. ports. The act was introduced by Senator Wesley Jones and deals with “cabotage” or the movement of goods within a country’s borders. The Jones Act requires that all goods transported by water between U.S. ports be carried on U.S.-flag vessels that are constructed in the United States, that are owned by U.S. citizens, and that are crewed by U.S. citizens and U.S. permanent residents. The act has jurisdiction over traffic on U.S. inland waterways and coastal shipments, as well as shipments between CONUS and noncontiguous states and territories, such as Alaska, Hawaii, and Puerto Rico.¹ The Jones Act also covers other maritime industries, including passenger service, fisheries, dredging, towing, and offshore energy support.

The United States has cabotage restrictions similar to the Jones Act on companies providing transportation services within the country in the case of the airline, railroad, and trucking industries. The Jones Act has no impact on the nation’s foreign trade and shipping services, including that of Puerto Rico. Foreign vessels carrying foreign trade regularly call at Puerto Rican ports. Of the total marine traffic through the primary Puerto Rican ports of San Juan and Ponce in 2016, 57 percent of cargo throughput had either foreign origins or destinations.² Puerto Rico is also subject to the same U.S. customs regulations and tariffs that are applicable to all other ports on the mainland and in Alaska and Hawaii. There is no “customs surcharge” for Puerto Rico.

② The Jones Act has no impact on retail prices in Puerto Rico or the cost of living

The New York Times in the aftermath of Hurricane Maria on September 25, 2017, published an op-ed article entitled “The Jones Act: The Law Strangling Puerto Rico”⁴ that claimed “food costs twice as much in Puerto Rico as in Florida.” The article also cited statistics from a 2012 report from economists at the University of Puerto Rico⁵ that claimed that the Jones Act caused a cumulative loss of “\$17 billion to the island’s economy” over the period between 1990 and 2010 (an average annual loss of \$850 million). None of these claims are even remotely accurate as will be demonstrated in this report.

Key Facts About the Jones Act and Puerto Rico

① The Jones Act provides a significant positive economic impact

The Jones Act provides significant benefits to the people of Puerto Rico in terms of employment and economic impact contributing well over 1,000 jobs to residents of Puerto Rico that provide an overall annual economic contribution to the commonwealth in excess of \$250 million.³

- 1 Shipments between Guam, American Samoa, and other domestic ports are not subject to the Jones Act’s U.S.-build requirement but still must comply with the U.S. crew and U.S. ownership requirements.
- 2 U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center, *Tonnage for Selected U.S. Ports in 2016*.
- 3 Reeve & Associates’ analysis of Jones Act economic impact.
- 4 Nelson A. Denis, *NEW YORK TIMES* (September 25, 2017).
- 5 Jeffry Valentin-Mari & José Alameda-Lozada, *Economic Impact of Jones Act on Puerto Rico’s Economy*, Working Paper presented to the U.S. General Accountability Office (April 26, 2012).

For the record, as shown in Exhibit II-1, a sample of the prices of an assortment of consumer goods in San Juan and Jacksonville, Florida, that was done in March 2018 shows no significant difference in the prices of either grocery items or durable goods between the two locations. In fact, for a few items, the prices of goods in San Juan were actually lower than those on the mainland and were otherwise the same. None were higher. The survey was done online in order to ensure that prices were representative of a specific point in time and were “apples to apples” comparisons of exactly the same items and not influenced by special discounts or sales at either location at the time.

EXHIBIT II-1

Prices of Selected Consumer Goods at Walmart Stores in San Juan and Jacksonville in March 2018

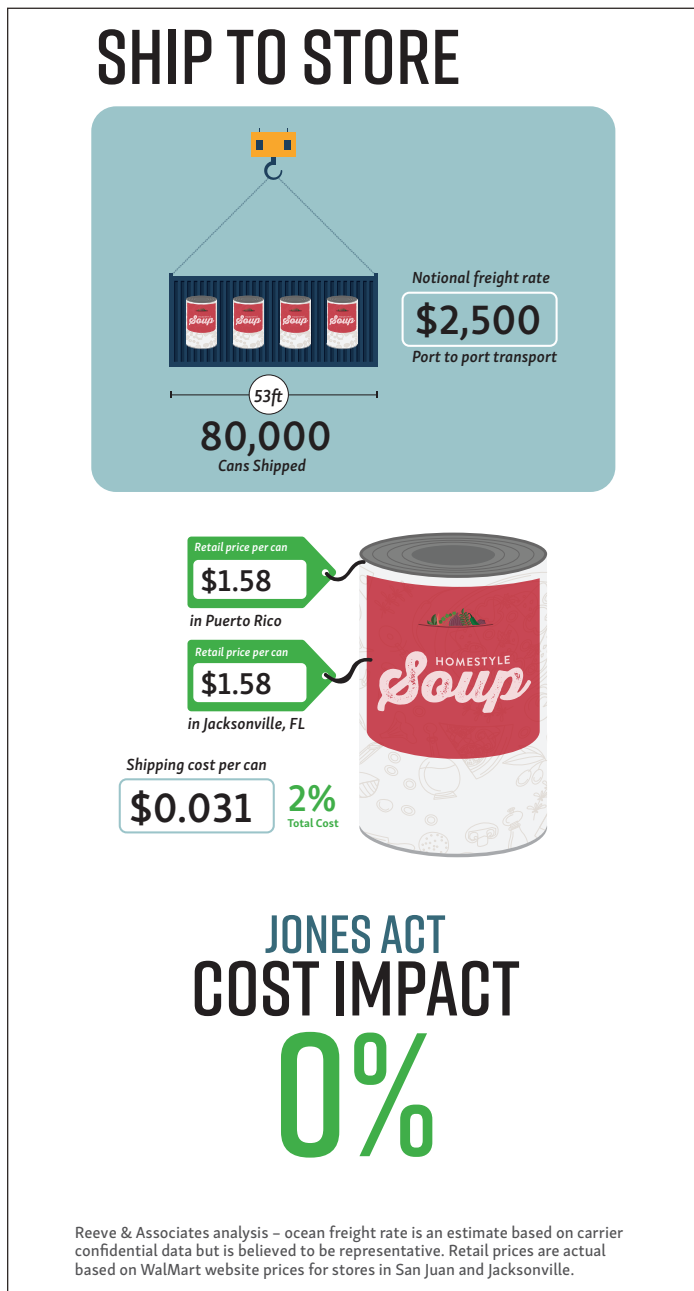
GROCERY ITEMS	SAN JUAN PUERTO RICO	JACKSONVILLE FLORIDA	DIFFERENCE WITH PR
Eggs Eggland's Best Large AA Grade Eggs 12 ct	\$2.67	\$3.66	-\$0.99
Poultry Great Value All Natural Boneless Skinless Chicken Breasts	\$6.46	\$6.98	-\$0.52
Beef Dinty Moore Beef Stew, 20oz. (pack of 4)	\$14.64	\$14.64	0
Rice Uncle Ben's Original Enriched parboiled long grain rice	\$3.48	\$3.48	0
Cereal Quaker Oatmeal Squares Breakfast Cereal, Brown Sugar 21oz.	\$3.98	\$3.98	0
Pasta Great Value Spaghetti 16oz, 12 pack	\$19.48	\$19.48	0
Cooking oil Crisco Pure Canola Oil, 48fl oz.	\$2.98	\$2.98	0
Sugar Splenda Sugar Blend 2lb (4lb equiv)	\$5.98	\$5.98	0
Olive oil Great Value Extra Virgin Olive Oil, 51fl oz.	\$9.84	\$10.98	-\$1.14
Coffee Nescafe Classico Instant Coffee 7oz jar	\$4.96	\$5.78	-\$0.82
DURABLE GOODS	SAN JUAN PUERTO RICO	JACKSONVILLE FLORIDA	DIFFERENCE WITH PR
Television Sony UHDTV 43" Class 4k	\$749.00	\$749.00	0
Refrigerator Maytag 30' 19.1 cubic feet capacity top freezer	\$698.00	\$698.00	0
Mattress Beautyrest Silver Holland Extra Firm	\$453-508	\$453-508	0

Source: Online surveys of Walmart Stores on March 1 and 9, 2018.

In order to understand why there may be negligible variation in the costs of retail goods in Puerto Rico and the U.S. mainland, Exhibit II-2 provides a case study for a shipment of chicken noodle soup in a 53' container from Jacksonville, Florida, to Puerto Rico. The ocean transport cost is only 2 percent of the retail price for the soup as sold in San Juan...which is also the same price as sold in Jacksonville. Essentially, transportation costs for Puerto Rico are not materially different than those on the mainland. In this case, as in the other examples shown above, the Jones Act has had zero impact on the cost of a can of soup sold in Puerto Rico.

EXHIBIT II-2

Case Study: Can of Soup Shipped to Puerto Rico from the U.S. Mainland



It should be noted that the high frequency of service provided by Jones Act carriers benefits Puerto Rico businesses in maintaining relatively low levels of inventory. For example, a tax policy in Puerto Rico that affects local businesses is a tax on inventories that is included in the tangible property tax.⁶ The rates for property taxes range between 6 percent and 9.8 percent depending on the municipality.⁷ A similar rate applies to inventories. The tax is assessed by each municipality and collected by the Center for Collection of Municipal Revenue that remits the receipts to the corresponding municipality.⁸ For certain types of business, such as in wholesale, the amount of the tax can be considerable, thus incentivizing them to maintain as low levels of inventories as possible. This is an operating cost that business tend to pass-on to consumers.

The truth of the matter is that Puerto Rico has sustained a lower rate of inflation in consumer prices over the last decade compared to the United States as a whole, as shown in Exhibit II-3 below. Inflation in Puerto Rico is essentially exogenous, that is, it is mostly determined by import prices of raw materials and final goods coming from the United States and external markets. And it is also affected by energy prices derived from oil and gasoline imports and other costs – that are generally passed on to the local consumer and added into the final retail price.

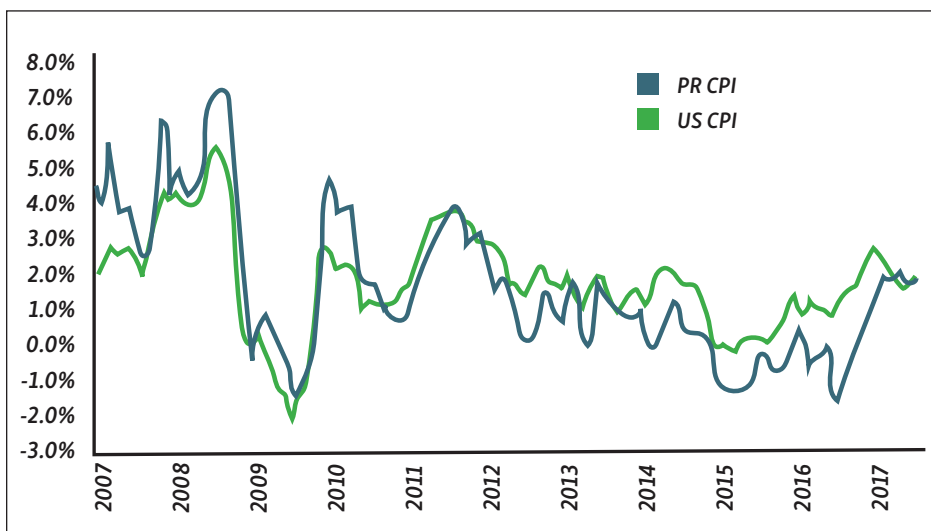
6 Law Num. 83 of August 30, 1991, as amended – *Ley de Contribución Municipal sobre la Propiedad de 1991*, Sections 3.11, 3.13, 3.14, Available at: <https://www.pivcide.pr/Documentos/Ley-83-1991-Ley-De-Contribuci-n-Municipal-Sobre-La/jbzx-ieh7/data>.

7 Centro de Recaudos e Ingresos Municipales (CRIM) (2017). *Tipos Contributivos Tasas 2017–2018*, Available at: <https://www.crimpr.net/crimdnn/es-ES/Archivo/Tipos-Contributivos>.

8 In some cases, the municipality can exempt a new business of the property tax, as an incentive.

EXHIBIT II-3

PUERTO RICO INFLATION VERSUS U.S. MAINLAND



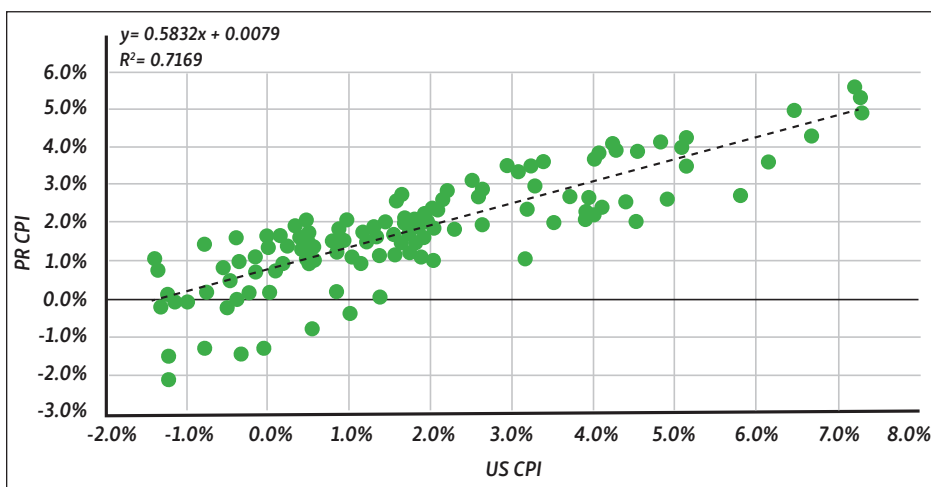
Sources: P.R. Department of Labor and Human Resources; U.S. BLS (2018). NSA = Not seasonally adjusted.

From a high of 5.2 percent in 2008, general or headline inflation in Puerto Rico has moderated considerably since, averaging 1.8 percent in 2017 (up to August).⁹ As shown in Exhibit II-4 below, there is a not very surprising close correlation between the inflation rate in Puerto Rico and that on the mainland. The relationship between inflation in Puerto Rico and that in the mainland (for the period between January 2007 and August 2017) is quite robust, with the correlation at 72 percent (Exhibit II-3). And these price increases are reflected in those of the commodities shipped from the mainland to Puerto Rico.

EXHIBIT II-4

CORRELATION BETWEEN INFLATION RATES IN PUERTO RICO AND THE U. S. MAINLAND

Relationship Between PR's Inflation (CPI) and that of the Mainland, January 2007 Through August 2017 (NSA)



Sources: P.R. Department of Labor and Human Resources; U.S. BLS (2018). NSA = Not seasonally adjusted.

⁹ For a description of the methodology, see the Technical Note (Nota Técnica) at www.mercadolaboral.pr.gov.

Energy prices are an important determinant on local inflation, and the Puerto Rican economy has not been exempted from these pressures, as it mostly imports all of its oil and gasoline needs from foreign suppliers.¹⁰ As Exhibit II-5 shows, changes in energy prices (electricity and gasoline) have been a major factor in Puerto Rican inflation over the last decade, generating extremely volatile movements while changes in the index for food and beverage prices have been very moderate, especially in recent years. Between January and August 2017, for instance, Puerto Rican headline inflation (CPI) rose 1.8 percent, but gasoline prices increased an average of 11.2 percent and electricity by 12.3 percent, while food and beverage prices rose by only 0.4 percent.¹¹

EXHIBIT II-5

KEY CONTRIBUTORS TO INFLATION RATES IN PUERTO RICO

YEAR	CPI	FOOD AND BEVERAGE	ELECTRICITY	GASOLINE	CORE INFLATION
2008	5.2%	7.7%	29.0%	21.3%	
2009	0.3%	4.3%	-17.3%	-27.1%	
2010	2.5%	0.7%	11.6%	21.9%	1.3%
2011	2.9%	2.4%	16.0%	25.1%	1.1%
2012	1.4%	2.1%	-0.5%	5.1%	1.5%
2013	1.1%	1.5%	-5.8%	-2.1%	1.4%
2014	0.6%	2.1%	-9.5%	-0.6%	1.1%
2015	-0.8%	2.6%	-23.0%	-22.7%	1.5%
2016	-0.3%	0.9%	-15.9%	-7.5%	1.3%
2017*	1.8%	0.4%	12.3%	11.2%	1.2%

Sources: P.R. Department of Labor and Human Resources; Estudios Técnicos, Inc.

*Up to August.

It is noteworthy that the liner shipping services provided by the Jones Act carriers in the CONUS/Puerto Rico trade have no impact on the price of electricity and gasoline on the island. However, as shown in Exhibit III-3 later in this report, these carriers are responsible for carrying a large volume of consumer goods and foodstuffs and beverages to Puerto Rico that collectively account for 57 percent of the inbound shipments carried by the liner operators to the commonwealth from the mainland.

3 There is no Jones Act freight rate premium for ocean transport

The claim made in the Valentin-Mari and Alameda-Lozada study in 2012 that was referenced above (*Economic Impact of Jones Act on Puerto Rico's Economy*) that the Jones Act has had a negative economic impact on Puerto Rico of \$850 million a year between 1990 and 2010 also fails to be substantiated by either fact or common sense. The total gross revenue from shipping services of the Jones Act carriers serving the CONUS/Puerto Rico shipping market between 1990 and 2010 was substantially below the assertion of \$850 million in annual negative economic impact.¹² The Jones Act carriers could have provided shipping services for free and Valentin-Mari and Alameda-Lozada would still have claimed there was negative economic impact.

¹⁰ Still, the price of gasoline in Puerto Rico moves very much in tandem with that of the WTI.

¹¹ The comparison is done up to August, as prices afterwards have been affected by the impact of the hurricanes.

¹² Reeve & Associates calculation based on public and confidential carrier financial data.

Furthermore, it is ludicrous to claim that the annual “loss” to Puerto Rico from the Jones Act was substantially greater than the carriers’ gross revenue that covered expenses for inland transportation, container equipment, port cargo-handling operations, fuel, taxes, sales, and administration that collectively are much greater than vessel and crew costs. Vessel and crew costs, the only parts of the carriers’ overall cost structure that are impacted by the Jones Act, in 2010 accounted for only 20 percent of the carriers’ total operating expenses.¹³

Of course, a foreign-flag vessel operator would also have vessel and crew expenses, thus reducing any hypothetical cost impact of the Jones Act even much further below the 20 percent level. In effect, the authors of the study have calculated a “cost” of the Jones Act that would exist even if the Jones Act carriers had provided the transportation for free. It is also noteworthy that the gross revenue of the carriers in the CONUS/Puerto Rico liner service are only 0.7 percent of Puerto Rico’s gross domestic product.

The Valentin-Mari and Alameda-Lozada study employs an obscure econometric model utilizing a “reciprocal demand function” both with and without “transportation cost service” as the key differentiator to identify the economic impact of shipping services. However, the actual data used as input for the “transportation cost service” is not provided in the report. The study does list cost differentials between U.S.-flag and foreign-flag containerhips that range between 10 and 54 percent, depending on whether the total cost of moving goods between CONUS and Puerto Rico (including inland transportation, container equipment, port cargo-handling operations, fuel, taxes, sales, and administration, as well as the vessel and crew expenses) is included or just the cost of the vessel and crew. As noted above, it is not clear what Valentin-Mari and Alameda-Lozada used for “transportation cost service.” However, given the fact that their model spat out an economic impact that in most years was well in excess of the carriers’ gross revenues, it may well be that the cost input to the model did not include the

total “transportation cost service” of moving goods between CONUS and Puerto Rico and, consequently, was fundamentally flawed and highly misleading.

Moreover, one of the key mistakes in the Valentin-Mari and Alameda-Lozada study is that vessel operating costs of foreign carriers in international trade are used and not the costs a foreign carrier would incur if it served a U.S. domestic route in the case that the Jones Act was waived. A foreign carrier operating in a U.S. domestic trade, according to the U.S. Maritime Administration, would have to comply with “all the work rules and manning requirements in the U.S. that affect labor productivity and crewing flexibility that result in overall crewing costs that contribute approximately \$12,000 to \$15,000 per day to total U.S.-flag operating costs.”¹⁴

A recent article in the *Journal of Maritime Law & Commerce* also supports the finding that a foreign-flag vessel’s costs would rise substantially if operated in U.S. domestic trade in terms of U.S. tax, labor, and employee protection laws.¹⁵

Consequently, it may well be concluded that compliance with U.S. law would substantially diminish if not totally eliminate any foreign-flag cost advantage if the Jones Act were to be waived in the case of CONUS/Puerto Rico trade.

Fortunately, it helps to be armed with the facts in terms of “transportation cost service.” A number of the current carriers in the CONUS/Puerto Rico trade (all are members of the American Maritime Partnership) that are participants in this study also serve the island’s Caribbean neighbors. Exhibit II-6 below shows in index form (in order to protect the confidentiality of actual carrier data) the relative average revenues per container load earned for moving cargo during the 2015-2017 period between CONUS and Puerto Rico as well as between CONUS and Puerto Rico’s immediate neighbors of the Dominican Republic, Haiti, and the U.S. Virgin Islands.

13 Reeve & Associates produced a report in 2011 (Competitiveness in the Puerto Rico Liner Trade) for the Alianza Maritima that showed that total vessel (including maintenance and repair, stores, insurance, and capital expenses) and crew costs in 2010 accounted for around 20 percent of Jones Act operators’ costs in the CONUS/Puerto Rico trade.

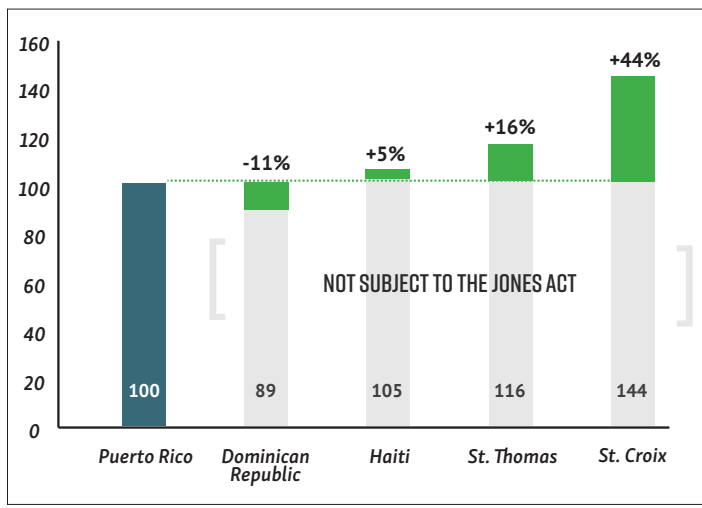
14 US Maritime Administration, *Comparison of U.S. and Foreign-Flag Operating Costs* (September 2011). At <https://www.marad.dot.gov/search/Comparison+of+US+and+foreign-flag+operating+costs/>.

15 S. Beason, D. Conner, N. Milonas, & M. Ruge, *Myth and Conjecture? The “Cost” of the Jones Act*, JOURNAL OF MARITIME LAW & COMMERCE, 46:1 (January 2015). http://www.klgates.com/files/Publication/98eba0b5-41ec-4d0d-8f8d-a111146a7fe5/Presentation/PublicationAttachment/eb4353ac-8df8-401f-977f-af4f1a5ee48c/JMLC_Jan%202015.pdf.

EXHIBIT II-6

RELATIVE LEVELS OF PORT TO PORT REVENUE PER CONTAINER (FEU)

Shipping between CONUS and Puerto Rico on Jones Act carriers has no freight rate premium 2015–2017



Source: Carriers in the CONUS/Puerto Rico trade and neighboring islands.

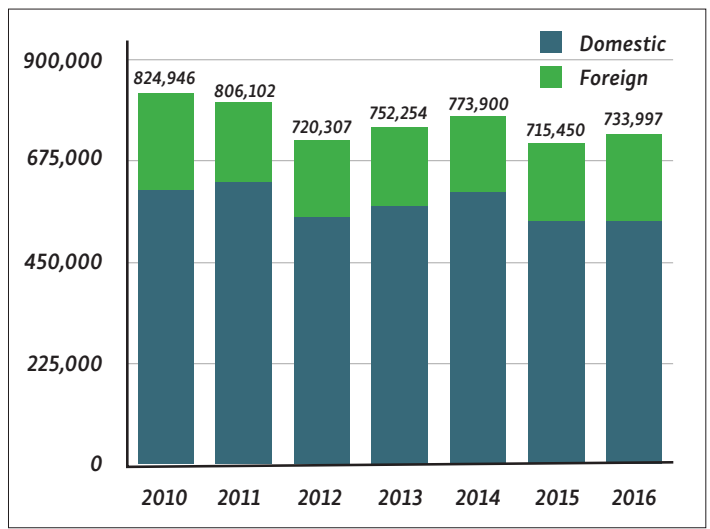
Clearly, Puerto Rico is not suffering a significant disadvantage in terms of freight rates with CONUS when compared to neighboring islands. It should also be noted that shippers of goods from CONUS to Puerto Rico must also compete with foreign-based competitors. There is nothing in the Jones Act that precludes foreign-flag vessels from serving Puerto Rico directly from foreign countries. As noted above, 57 percent of San Juan’s port traffic in 2016 (all types of cargo) was carried by foreign vessels from and to foreign origins and destinations.

The fact that U.S. companies have remained competitive in the Puerto Rican market is supported by market share data as shown in Exhibit II-7. In terms of container traffic, although there has been a substantial decline in total traffic volumes moving through Puerto Rico’s ports, the mix of domestic and foreign freight has remained relatively stable, with domestic freight having by far the largest share (e.g., 73.8 percent in 2016).

EXHIBIT II-7

PUERTO RICAN PORTS CONTAINER TRAFFIC

with Domestic and Foreign Trading Partners



	2010	2011	2012	2013	2014	2015	2016
DOMESTIC	73.8	78.0	76.3	76.3	78.3	75.4	73.8
FOREIGN	26.2	22.0	23.7	23.7	21.7	24.6	26.2

Source: U.S. Army Corps of Engineers, Waterborne Commerce Statistics.

If cargo owners in Puerto Rico believed that Jones Act shipping services were adding costs that negatively impacted their business, one would expect to see the foreign component in the exhibit above increasing. Clearly, there is no evidence to this effect. This consistent performance indicates that the maritime trade between CONUS and Puerto Rico is not disadvantaged against foreign competitors by Jones Act carriage...rather, as discussed later in this report, the fact that the Jones Act carriers operate dedicated services operating advanced logistics channels within both CONUS and Puerto Rico that essentially create a tightly linked domestic supply chain for both inbound and outbound shippers is a key factor in maintaining the close trading relationship between the two parties.

④ Advanced technology provided by the Jones Act carriers serving Puerto Rico ensures a high level of supply-chain efficiency

The Federal Reserve Bank of New York in 2012 published a “*Report on the Competitiveness of Puerto Rico’s Economy*.” Quoting directly from the report, five factors were identified that in the bank’s view pose “significant competitive challenges to the Island”:

- **Improving Labor Market Opportunities:** Puerto Rico’s labor force participation rate is among the lowest in the world, with less than half of eligible workers participating in the formal economy. Moreover, the unemployment rate has been persistently well above the U.S. mainland’s and is especially high for the young and less educated.
- **Developing Human Capital:** Although the island’s workforce overall is among the world’s most educated, Puerto Rico still lags the U.S. mainland, and there is a particularly high abundance of low-skilled workers. There are also growing concerns that the quality of the education system has deteriorated, especially at the primary and secondary levels.
- **Reducing the Costs of Doing Business:** The business environment in Puerto Rico makes it costly and cumbersome to establish and grow new businesses and expand existing ones. In particular, regulations, the elevated cost of electricity, and an underdeveloped and costly transportation infrastructure are barriers to a more dynamic environment.
- **Mobilizing Finance for Business Development and Growth:** Weak banks and limited alternatives to bank funding have reduced credit availability to local businesses.
- **Lowering Dependence on a Shrinking Industry:** Tax incentives led to an outsized presence of the pharmaceuticals industry on the island. The incentives have been phased out and employment in the industry has declined. Going forward, there appears to be only a limited prospect for the sector to be a driver of growth.

As one of the elements in the report’s recommendations on how to lower the costs of doing business, the Bank claimed:

The high cost of shipping is a substantial burden on the Island’s productivity. Puerto Rico is in a distinctive situation with respect to the Jones Act because of its status as an island economy. One option could be to seek a temporary exemption from the Jones Act, for instance for five years, in order both to evaluate whether or not these restrictions really are a substantial cause of elevated shipping costs and to allow for assessment of the costs and benefits of a permanent exemption.¹⁶

However, in the substance of the bank’s report, the authors equivocate from their finding on the *high cost of shipping*: “While the Jones Act is often cited as a factor that raises business costs, there is no comprehensive, objective study assessing its potential effects on Puerto Rico’s shipping costs or the Island’s economy as a whole.”¹⁷

The bank bases its finding on the “high cost of shipping” on a single example for a shipment of “household and commercial goods” from the East Coast of the United States to Puerto Rico and compares the rate to other Caribbean destinations. The rate is derived from a public website. As almost all cargo shipped in the CONUS/Puerto Rico trade moves under confidential contracts, the rate is hardly representative of the market as a whole. As already shown in our report, there is ample evidence that the services provided by the Jones Act carriers in the CONUS/Puerto Rico trade, on average for all types of cargo, are priced at competitive levels with those to/from the mainland and neighboring Caribbean islands. In addition, the fact that the Jones Act carriers operate dedicated services for Puerto Rico with vessels and intermodal equipment that are uniquely designed to closely integrate the commonwealth with the advanced logistics systems of the mainland provides cargo owners with major economic and service advantages.

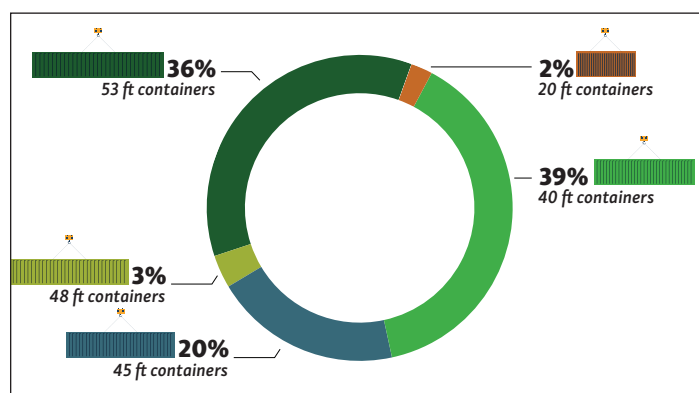
¹⁶ Federal Reserve Bank of New York, *Report on the Competitiveness of Puerto Rico’s Economy* (June 29, 2012) page iv.

¹⁷ *Ibid*, *Id.* at 13

For example, all of the vessels currently serving the CONUS/Puerto Rico trade are designed to carry a high number of 45-foot, 48-foot, and 53-foot containers and trailers. In particular, the 48-foot and 53-foot equipment are consistent with the type and size of domestic trailers and containers that are the predominant cargo units used today on American highways and intermodal railroads. Foreign-built and foreign-trading vessels are designed to primarily carry 20-foot and 40-foot containers. In comparison, a “Jones Act” 53-foot container or trailer has 43 percent more cubic capacity for cargo than a “high cube” 40-foot international unit.¹⁸ As shown in Exhibit II-8 below, well over half of the containers and trailers employed in the CONUS/Puerto Rico trade are substantially larger than the standard 20-foot and 40-foot international units.

EXHIBIT II-8 DISTRIBUTION OF CONTAINER AND TRAILER EQUIPMENT

Employed in the CONUS/Puerto Rico Trade



Source: Estudios Técnicos, Inc. from carrier data.

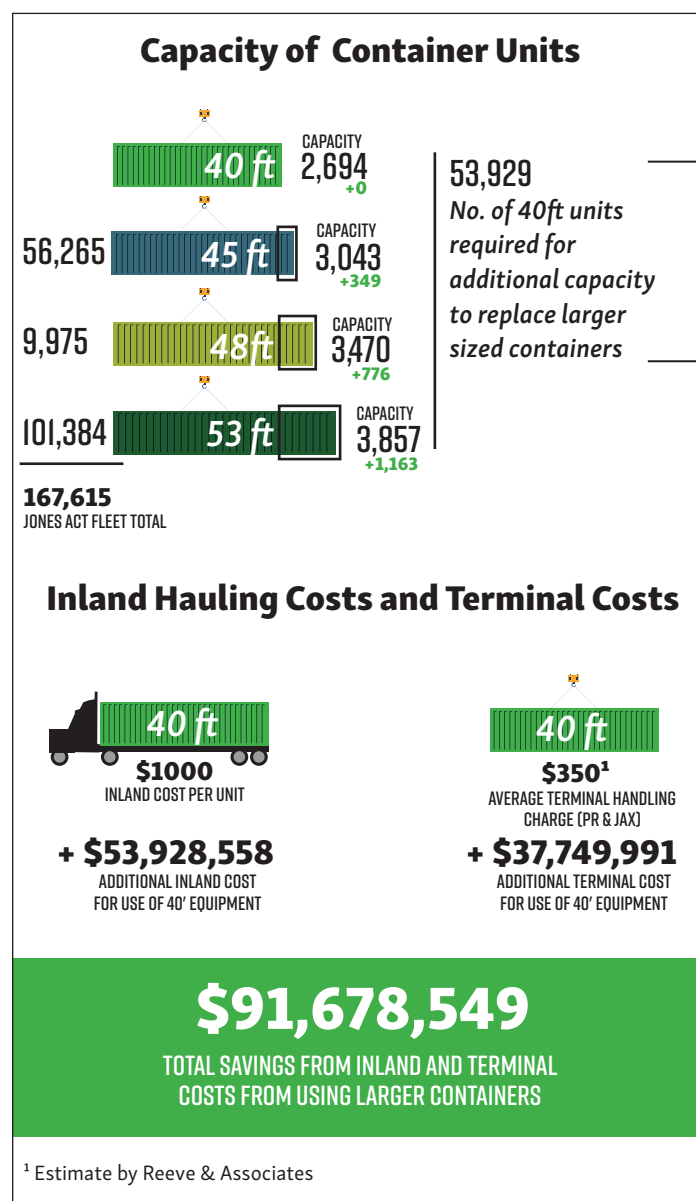
The size of equipment has a major impact on the cost of moving cargo “intermodally” in containers and trailers over highways and railroads in conjunction with a marine move as well as in marine terminal cargo loading and discharging. Inland transport and marine terminal costs together account for close to 48 percent of the CONUS/Puerto Rico carriers’ total operating costs.¹⁹

Consequently, the ability to carry up to 43 percent more freight in a container or trailer over land and through ports at relatively the same cost as incurred by a standard international 40-foot unit provides a major economic advantage to the type of dedicated

Jones Act services provided today in the CONUS/Puerto Rico trade. As described in Exhibit II-9, this advantage translates into around \$92 million of cost savings annually through greater efficiency in overland and terminal operations that well offsets any additional costs of the Jones Act carriers operating under the U.S.-flag in terms of U.S.-built vessels and U.S. citizen crews.

EXHIBIT II-9 SAVINGS IN INLAND AND TERMINAL HANDLING

Costs Provided by High Capacity U.S. Domestic Intermodal Equipment



Source: Reeve & Associates and Estudios Técnicos, Inc.

¹⁸ A 40-foot-high cube container has 2,694 cubic feet of cargo capacity. A 53-foot-high container has 3,857 cubic feet of cargo capacity.

¹⁹ Reeve & Associates’ analysis of carrier data.

⑤ There is no positive case to be made for waiving the Jones Act for Puerto Rico

Subsequent to the Federal Reserve Bank of New York's report on the Puerto Rican economy, the GAO released a report in 2013 on *Characteristics of the Island's Maritime Trade and Potential Effects of Modifying the Jones Act*. The key findings from the GAO's report are the following:

- The CONUS/Puerto Rico trade operates via a closed-loop service. This has resulted in dedicated, scheduled, regular shipping services from the Jones Act carriers that provides an important benefit to customers in Puerto Rico.
- Because there are many other factors apart from the Jones Act that affect freight rates: "It is difficult to isolate the extent to which freight rates between the U.S. and Puerto Rico are affected by the Jones Act."
- Some services between Jones Act and foreign carriers are not comparable, and the degree of substitutability between these has not been estimated.
- Foreign carriers operating in the domestic trade "could be required to comply with U.S. labor laws and regulations, even if Puerto Rico was exempted from the Jones Act, which could increase foreign carriers' costs and may affect rates they could charge."
- The GAO also found that "arriving at an accurate estimate of the costs to foreign carriers of complying with U.S. laws would be very difficult."

The GAO study did not provide cost estimates for several reasons, although perhaps its most important finding was: "The effects of modifying the application of the Jones Act for Puerto Rico are highly uncertain."

Given that freight rates between CONUS and Puerto Rico are essentially equivalent to those for neighboring islands and the fact that the costs of consumer foodstuffs and durable goods in Puerto Rico are also the same as on the mainland, there is no empirical evidence that the Jones Act imposes any excessive "cost" to Puerto Rico. On the other hand, there are considerable benefits to Puerto Rico in a customized, highly-focused maritime and intermodal pipeline for inbound and outbound shipments that connects the commonwealth with the mainland by high-frequency, rapid-transit, state-of-the-art, dedicated shipping services that employ thousands of American citizens, including many residents of Puerto Rico.

There is no evidence to suggest that exempting Puerto Rico from the Jones Act would reduce consumer prices in Puerto Rico. On the contrary, a Jones Act exemption would likely have an adverse effect on the quality and reliability of shipping services to and from the island as foreign-flag vessels would likely call at other Caribbean ports, thus reducing the service frequency and transit times currently enjoyed by shippers in the CONUS/Puerto Rico trade (as discussed in Section IV of this report). If that were to happen, one could expect a corresponding deterioration in the quality of consumer goods and services and, certainly, no reduction in consumer prices, while there would be a substantial loss of skilled maritime jobs in Puerto Rico and the mainland.

III. THE LINER SHIPPING MARKET

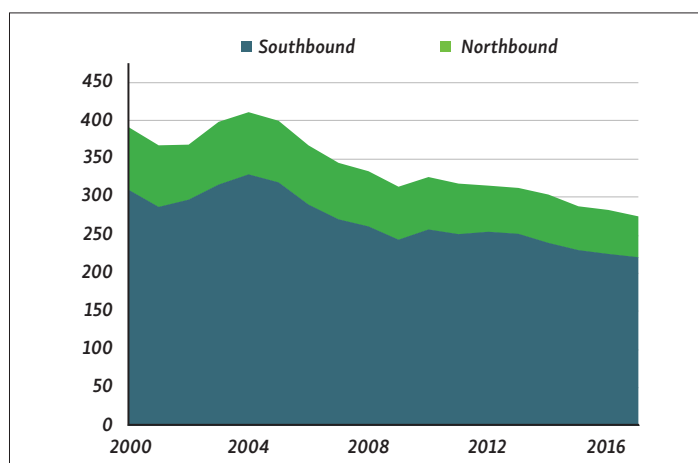
Overall Growth Trends and Traffic Flows

The liner shipping market²⁰ between CONUS and Puerto Rico has shrunk precipitously in recent years as shown in Exhibit III-1 below. Over the 2000–2017 period, the total market (northbound and southbound) reached a peak in 2004 of 412,000 FEU²¹ with 330,000 FEU shipped to Puerto Rico and 82,000 FEU shipped from Puerto Rico. The size of the market fell to 283,300 FEU in 2016, an overall decline of 31.2 percent. Annualized data from the first nine months of 2017 suggests a further decline in that year, but that is likely to be misleading, as a surge in southbound relief shipments following Hurricane Maria will very likely register some growth in 2017 once actual fourth quarter information is available.

Southbound trade carries vital consumer goods to Puerto Rico, and the northbound service is a key contributor for economic development, transporting high-value cargo.

EXHIBIT III-1

CONUS/Puerto Rico Liner Shipping Market 2000–2017



Source: Journal of Commerce Port Import Export Reporting Service (PIERS). Data for 2017 is annualized based on actual data from the first nine months compared to 2016. Data for Gulf shipments from 2013–2017 is estimated as National Shipping (new entrant in 2013 with Gulf Service) does not contribute shipment data to PIERS.

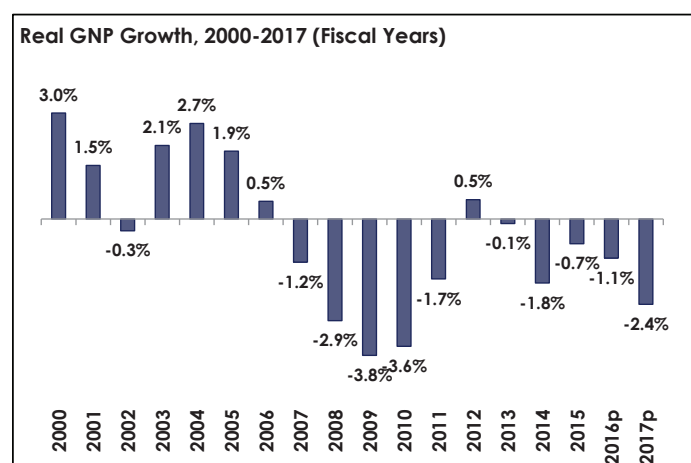
The decline in the CONUS/Puerto Rico “Jones Act” shipping market is also mirrored in the commonwealth’s foreign trade as indicated in Exhibit II-2 in the previous section of this report.

The key factors leading to the prolonged decline in the CONUS/Puerto Rico shipping market are the long-term recession in the Puerto Rican economy, rising unemployment, and the commonwealth’s shrinking population due to emigration to the U.S. mainland. Consequently, Hurricane Maria impacted an economy already beset by a long process of economic contraction that had weakened its infrastructure, production activities, and, to a significant extent, its resiliency.

As shown in Exhibit III-2, the Puerto Rican economy has shrunk (in real terms) in all but one year (2012) since 2006. Infrastructure investment has declined significantly, and an increasingly fragile public sector has substantially limited Puerto Rico’s margin for action. Real Gross National Product (GNP) growth has declined at an accumulated rate of 18.4 percent between fiscal 2007 and fiscal 2017. The decline in the Puerto Rican population has been equally damaging to trade — falling from 3,725,789 in 2010 to 3,337,177 in 2017 (before the impact of Hurricane Maria), a decline of 12 percent.²²

EXHIBIT III-2

PUERTO RICO ECONOMIC GROWTH



Source: Puerto Rico Planning Board. P indicates preliminary.

²⁰ “Liner shipping” refers to regularly scheduled shipping services that move a variety of cargoes in containerized, roll-on/roll-off (RoRo) or breakbulk modes.

²¹ FEU denotes “Forty-Foot Equivalent Unit” as a measure of cargo carried in containers or trailers and the carrying capacity of a vessel.

²² U.S. Census Bureau.

As demonstrated in Exhibit III-1 above, the CONUS/Puerto Rico trade is severely imbalanced. In 2017, annualized southbound shipments to Puerto Rico accounted for 80 percent of the total traffic moving in the trade, or, to put it another way, northbound traffic of 53,600 FEU was only 24 percent of the southbound cargo movements of 221,200 FEU. This pattern of severe imbalance has long been a key characteristic of the trade — in 2000, for example, southbound shipments accounted for 79 percent of the market.

The imbalance in directional traffic flows in the Puerto Rican trade creates operational and economic challenges for the carriers which provide significant and unique advantages to exporters from Puerto Rico. As the vast majority of the liner traffic is carried in containers or trailers,²³ only 24 out of every 100 revenue-generating containers or trailers that move southbound are returned to the mainland with paying cargoes. The remainder are returned empty. The same issue applies to the vessel's cargo-carrying capacity, which is highly underutilized in the northbound lane segment. As a result, producers in Puerto Rico are able to obtain very frequent shipping services at extremely attractive rates for shipments moving from Puerto Rico to the mainland.

The outlook for the CONUS/Puerto Rico trade is problematical. The commonwealth essentially declared bankruptcy in 2017, being unable to support the \$72 billion debt it owes to bondholders. The U.S. Congress stepped in to enact the Puerto Rico Oversight, Management, and Economic Stability Act, establishing a Fiscal Oversight and Management Board (FOMB) to oversee Puerto Rico's budget and finances. In September 2017, Puerto Rico was struck by two strong hurricanes, Irma and Maria. The destruction caused by these events exacerbated the fiscal crisis for the commonwealth. It is estimated that the total impact caused by Hurricane Maria alone could be upwards of \$65 billion.²⁴

According to the Puerto Rico Fiscal Plan (February 2018) that is still to be approved by the FOMB, the U.S.

Congress budgeted several disaster relief packages for Puerto Rico that total \$49.1 billion.²⁵ Private insurance disbursements could add \$21 billion, resulting in a total of \$70 billion towards disaster relief. That is an amount equal to the 2016 Puerto Rico gross national product.

Key indicators point to a short term recovery in the Puerto Rican economy. Certainly, the major spending on relief programs after Hurricane Maria will have a positive economic effect in 2018 and well into 2019. However, the recently passed Tax Cuts & Jobs Act (TCJA) of 2017 by the U.S. Congress has a downside for the Puerto Rican economy. The TCJA maintains the treatment of Puerto Rico as a "foreign tax jurisdiction" for federal tax purposes, but there are significant modifications to the tax arrangements under which U.S. corporations, known as "Controlled Foreign Corporations" (CFC) will operate in Puerto Rico. One is related to their current deferred offshore profits, which include those generated or maintained in the island. The new tax regime moves from a global system of taxation to a territorial system. While the states where international companies have a tax liability will benefit from the repatriation clause, Puerto Rico will not benefit since it is considered a "foreign tax jurisdiction."²⁶

Of particular concern is the impact on Puerto Rico's pharmaceutical, computer and electronic equipment, and medical equipment and supplies manufacturing sectors that provide 42 percent of the island's total employment in manufacturing. These impacts may lead to further contraction in the Puerto Rican economy by 2020 with a negative impact on marine traffic flows.²⁷

Composition of the Trade

The southbound segment of the CONUS/Puerto Rico trade is heavily dominated by consumer goods as demonstrated by the mix of commodities shown in Exhibit III-3 below. Consumer products, foodstuffs, and clothing make up 59 percent of southbound traffic. All of these items are essential to maintaining a decent quality of life on the island.

²³ The exceptions are automobiles, trucks, and other wheeled cargoes that are carried in a "roll-on/roll-off" mode.

²⁴ Estudios Técnicos, Inc. (2018). *Competitiveness of the Puerto Rico Jones Act Trade. Preliminary Report* (February 23). Submitted to Reeve & Associates. P. 9.

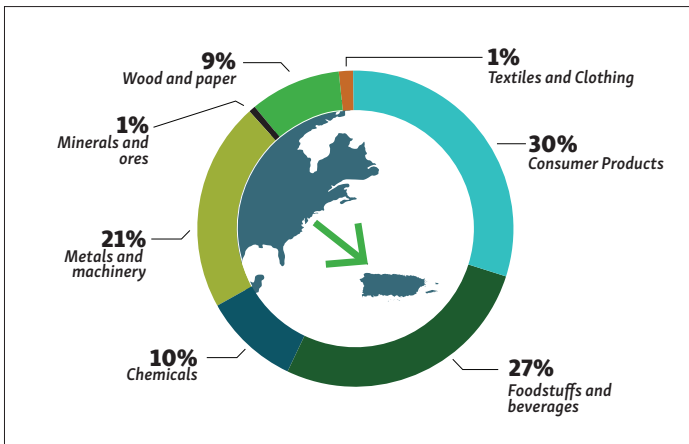
²⁵ Government of Puerto Rico (2018), New Fiscal Plan for Puerto Rico (February 12, 2018), <http://www.aafaf.pr.gov/>.

²⁶ *Id.*

²⁷ Estudios Técnicos, Inc.

EXHIBIT III-3

Major Cargoes in the Southbound CONUS/Puerto Rico Trade 2017

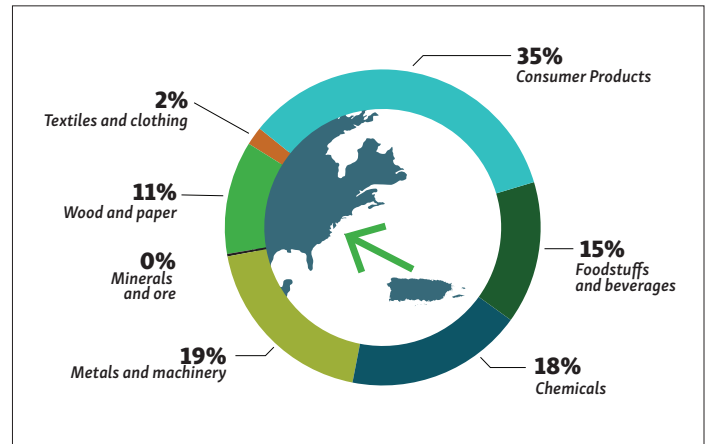


Source: Journal of Commerce The Port Import/Export Reporting Service (PIERS) data.

A large portion of Puerto Rican exports to CONUS tend to be relatively high-value cargo types. Contained within the commodity groups shown in Exhibit II-4 are key high-value cargo groups, such as medical equipment and automotive products (in Metals and Machinery), pharmaceuticals (in Consumer Products and Chemicals), and rum (in Foodstuffs and beverages).²⁸

EXHIBIT III-4

Major Cargoes in the Northbound CONUS/Puerto Rico Trade 2017



In summary, the southbound segment of the Puerto Rico trade brings to the commonwealth a variety of goods that are critical to the welfare of the people of Puerto Rico and that play a key role in their daily lives. The northbound trade is a key conduit for high-value merchandise that is a significant contributor to the wealth of the commonwealth.

IV. THE CARRIERS

Four Carriers Serve the Jones Act Puerto Rico Trade

Regularly scheduled liner shipping services between the U.S. mainland and Puerto Rico are currently provided by the four companies whose services are described in Exhibit IV-1 below. The weekly vessel capacity of around 7,215 FEU is more than adequate to transport the average weekly traffic volume of around 4,300 FEU container and trailer loads in the headhaul southbound trade segment. In addition to the carriers providing liner services, other Jones Act carriers provide transportation to and from Puerto Rico on an “as-needed” basis — this was particularly true in the aftermath of Hurricane Maria, when a number of U.S. domestic shipping companies came to the aid of the island.

Carriers provide highly effective logistics systems, including economical and environmental friendly vessels and equipment.

EXHIBIT IV-1

Liner Shipping Services in the CONUS/Puerto Rico Trade March 2018

CARRIER	TYPE OF VESSEL OPERATED	VESSELS IN PR SERVICE	WEEKLY CAPACITY (FEUS ONE WAY)	WEEKLY SERVICE FREQUENCY	PORTS SERVED	
					CONUS	PUERTO RICO
CROWLEY	RoRo Trailer and Container	8	3,052	6	Jacksonville Pennsauken	San Juan
TOTE MARITIME	Container	2	3,100	2	Jacksonville	San Juan Virgin Islands
TRAILER BRIDGE	RoRo Trailer and Container	4	920	2.3	Jacksonville	San Juan Dominican Republic
NATIONAL SHIPPING	Container	1	143	0.5	Houston	San Juan
TOTAL		15	7,215	10.8		

Source: Carrier data.

* RoRo denotes “Roll On/Roll Off” trailer barge.

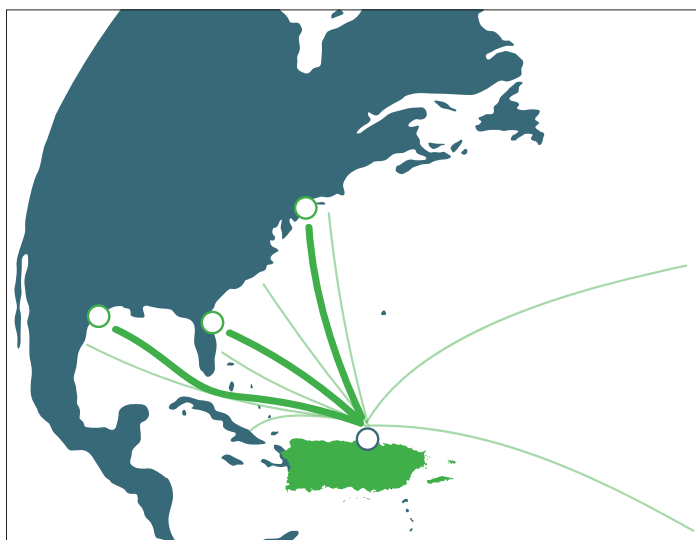
The carriers in the CONUS/Puerto Rico trade collectively offer shippers a variety of types of shipment modes and intermodal transportation equipment that are designed to meet the requirements of the range of cargoes moving in the trade. The carriers have invested in vessels, fleets of thousands of containers and trailers capable of carrying either dry or refrigerated cargoes, and other specialized equipment such as auto racks, as well as marine terminals. Several of their vessels and barges are also able to carry vehicles in a RoRo mode, as well as breakbulk cargo that may be too large or “out of gauge” to be accommodated inside a standard container or trailer.

Two of the carriers, TOTE Maritime and Crowley, have invested in a total of four (two each) state-of-the-art containerships that are the first vessels in the world to be fueled by Liquid Natural Gas that is both environmentally friendly and economical when compared to standard bunker fuels used by virtually all other similar vessels around the world. Two of these vessels are currently serving Puerto Rico, and the remaining two will shortly enter service in 2018. In addition, the carriers have made substantial investments in marine terminal facilities in San Juan and Jacksonville. The total investment in the Puerto Rico Jones Act trade by the four carriers over the last five years has been in excess of \$1 billion.

The scope and port coverage provided by the four carriers is described in Exhibit IV-2 below. These services enable shippers to have virtually daily service between the hub ports of Jacksonville, Florida, and San Juan, as well as direct connections from Pennsauken, New Jersey, in the North Atlantic and Houston in the Gulf. The fact that the vessels operating in the CONUS/Puerto Rico trade are dedicated to that route gives shippers very fast transit times directly between the mainland and Puerto Rico without stops in intermediate ports as typically occurs in international shipping markets.²⁹

EXHIBIT IV-2

CONUS/Puerto Rico Shipping Services March 2018



Source: Carrier schedules.

The Port of Jacksonville, Florida, plays a key role as a logistics hub for Puerto Rico. Typically, around 77 percent of CONUS/Puerto Rico-containerized cargo shipments move through Jacksonville, which is 39 percent of the port's total container throughput.³⁰

Intermodal Transportation

The four carriers in the Puerto Rico trade all provide comprehensive "intermodal" transportation services that connect Puerto Rico with virtually any point within the U.S. mainland. These intermodal services combine overland transportation by truck and/or rail with the ocean transit to and from Puerto Rico. This intermodal network enables shippers in the CONUS/Puerto Rico trade to have all of the advantages of the United States' efficient highway and rail transportation systems, including, as noted previously, the use of domestic containers and trailers that have significantly greater capacity than the standard 20-foot and 40-foot containers that are the workhorses of international intermodal services.

The "high cube" units operated in the Puerto Rico trade are similar in size and type to equipment currently operated within the domestic U.S. trucking and rail intermodal transportation systems. This commonality of equipment enables North American shippers to closely integrate Puerto Rico into their North American supply chains utilizing the same packing systems and pallets employed in transportation operations within the U.S. mainland.

²⁹ Alternate Trailer Bridge sailings call at the Dominican Republic after calling San Juan on the southbound voyage.

³⁰ Estudios Técnicos, Inc. (2011).

V. CARRIER COMPETITION

Carrier Market Shares

The carriers providing services to shippers between CONUS and Puerto Rico over the 2010–2017 period are listed in Exhibit V-1 below. A new entrant appeared in 2013 (National Shipping) and a one-time major player (Horizon Lines) exited in the following year. As demonstrated by the market share data, there is no single dominant carrier in the market, although shares have shifted over time.

Puerto Rico carrier market shares reflect a strong level of competition.

EXHIBIT V-1

Carrier Market Shares CONUS/Puerto Rico Trade between 2010-2017

SOUTHBOUND								
CARRIER	2010	2011	2012	2013	2014	2015	2016	2017 - SEP YTD
CROWLEY	30%	31%	36%	36%	35%	45%	41%	40%
HORIZON LINES	31%	30%	27%	24%	25%			
TOTE MARITIME	22%	22%	21%	22%	23%	34%	39%	40%
TRAILER BRIDGE	17%	17%	16%	17%	14%	18%	17%	17%
NATIONAL SHIPPING				1%	3%	3%	3%	3%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

NORTHBOUND								
CARRIER	2010	2011	2012	2013	2014	2015	2016	2017 - SEP YTD
CROWLEY	28%	32%	34%	36%	36%	54%	50%	46%
HORIZON LINES	25%	25%	27%	24%	25%			
TOTE MARITIME	30%	29%	23%	24%	23%	27%	31%	36%
TRAILER BRIDGE	17%	14%	16%	15%	13%	16%	16%	15%
NATIONAL SHIPPING				1%	3%	3%	3%	3%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

Source: Journal of Commerce, PIERS data. Data numbers have been rounded to nearest percentile

Given the size of the market, and the necessity to provide in most cases at least weekly frequency of service on a cost-effective basis, the number of carriers in the CONUS/Puerto Rico shipping market makes sense. Vessel scale economies are an important factor in liner shipping, with the cost of moving a container or trailer declining substantially as the size of a vessel increases. However, vessel scale economies must be balanced against the need for shippers to have access to frequent sailings and the size of the overall market. For example, as shown in Exhibit V-2 on the following page, TOTE Maritime (previously operating as Sea Star Line) was able to increase its capacity deployed in the trade (and market share as described above) when it replaced three 600 FEU vessels with two 1,550 FEU vessels. Crowley's increase in capacity occurred primarily through a redeployment of its vessels in order to provide more direct services to Puerto Rico from its Jacksonville and Pennsauken hubs.

EXHIBIT V-2

Vessel Capacity Deployed in the CONUS/Puerto Rico Trade 2011 versus 2018

CARRIER	VESSELS IN SERVICE IN 2011	2011 VESSEL CAPACITY (FEUS ONE WAY)	VESSELS IN SERVICE IN 2018	2018 WEEKLY CAPACITY
CROWLEY	8	1,820	8	3,052
HORIZON LINES	4	3,610	0	0
TOTE MARITIME	3	1,800	2	3,100
TRAILER BRIDGE	4	800	4	920
NATIONAL SHIPPING			1	143
TOTAL	19	8,030	15	7,215

Source: Published carrier data for the first quarter of the year.

The amount of capacity currently deployed by the carriers in the CONUS/Puerto Rico trade is easily able to carry the current volumes of freight. The average weekly volume of freight traffic in the headhaul southbound market segment for the annualized 2017 trade totals was around 4,300 FEU, providing an average utilization level for the 7,215 FEU of weekly vessel capacity of 60 percent.

Competitive Dynamics

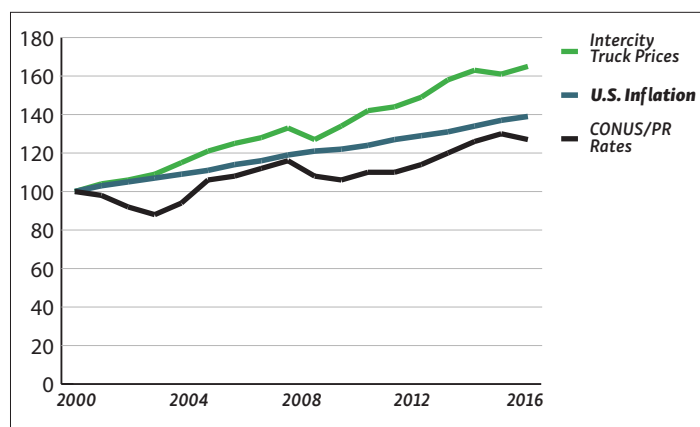
The level of freight rates or shipping prices in the CONUS/Puerto Rico trade over the 2000–2017 period is described in Exhibit V-3 on the following page. As almost all cargo in the Puerto Rico trade moves under confidential contracts, Reeve & Associates collected on a confidential basis from the carrier participants in this study information concerning their actual revenue per FEU in the trade over the 2010 to 2017 period.³¹ This data was then combined with similar information developed for the earlier analysis of competitive conditions in the Jones Act trades to provide a perspective on freight rate trends over the entire 2000–2017 period.

The revenue-per-container information is only for port-to-port traffic — i.e., it excludes any inland charges in order to eliminate any variability from shifts in intermodal traffic volumes and costs. The port-to-port freight rates do include any bunker fuel surcharges as well as the base ocean freight rate. The confidential carrier revenue information was aggregated and converted into index form in order to protect carrier confidentiality while still providing a clear picture of the trend in price levels.

³¹ Strict protocols were followed to maintain confidentiality of the data obtained from the carriers in the trade.

EXHIBIT V-3

Revenue per FEU in the CONUS/Puerto Rico Ocean Shipping Market 2000–2017



Sources: Reeve & Associates analysis of ocean carriers' proprietary data and U.S. Bureau of Labor Statistics for inflation rate (Consumer Price Index) and Logistics Management and Cass Truckload Linehaul Index for Intercity Truck Prices.

The rates in the exhibit above are plotted against the rise in the U.S. consumer price index or inflation over the same period. The freight rates demonstrably increased in line with inflation over the whole period with some up and down variations due to competitive cycles. Also, as shown in Exhibit V-3, the ocean freight rates in the CONUS/Puerto Rico trade significantly lagged the upward trend in U.S. intercity truckload linehaul prices throughout the 2000–2017 period.³² The CONUS/Puerto Rico ocean rate increased at a compound annual growth rate of 1.4 percent between 2000 and 2017, substantially below the average annual increase in U.S. trucking prices of 3 percent over the same period.

32 Reeve & Associates, *Competitiveness in the Puerto Rico Liner Trade* (2011) for the Alianza Maritima.

VI. SUPPORT FOR HURRICANE MARIA RECOVERY

Hurricane Maria struck Puerto Rico on September 20, 2017, with devastating force creating catastrophic damage to the island's infrastructure, including the electric power grid, telecommunications, roadways, and ports, as well as homes and businesses. Hurricane Maria followed by two weeks Hurricane Irma, another major storm that did less damage to Puerto Rico but was still extremely powerful. Shortly after the onslaught of Hurricane Maria, a number of articles appeared in the U.S. press, including *The New York Times*, claiming that the Jones Act was severely damaging the Puerto Rican economy both over time prior to the hurricane and in its immediate aftermath. However, these claims were quickly disproven after the true story of the Jones Act carriers' preparedness to assist the commonwealth both before the catastrophe and afterwards emerged.

Jones Act carriers played critical role in relief and recovery operations.

The following are some examples of the initiatives the Jones Act carriers undertook to assist the people of Puerto Rico in a time of dire emergency.

Vessel Support

Before Hurricane Maria hit Puerto Rico and the neighboring islands, the Jones Act carriers serving the commonwealth deployed 15 vessels in the trade. In the storm's aftermath, this number swelled to 23 within the first two weeks of recovery and ultimately reached 25.³³ These vessels included shallow-draft, flat-deck barges with RoRo capabilities that were able to discharge relief equipment and supplies along multiple points along the Puerto Rican coast and nearby islands, such as Vieques, thereby bypassing much of the road congestion and damage, as well as lack of trucks, drivers, and fuel that significantly hindered moving equipment and supplies out of the Port of San Juan in the early days of the relief effort.

Within 12 days of the hurricane, U.S.-flag Jones Act vessels had delivered 11,300 containers with millions of pounds of relief and other supplies to Puerto Rico.³⁴ Federal Emergency Management Agency (FEMA) relief goods were given priority in distribution.

Logistics Support

Unlike most of the infrastructure in Puerto Rico, the marine terminals in San Juan suffered relatively minor damage at the hands of Hurricane Maria. This was critically important to the recovery effort, as the American carriers began receiving relief supplies as soon as San Juan harbor reopened. Thousands of containerloads piled up on the docks over the next several weeks, as the flow of supplies from the marine terminal gates out to the end users was constrained by each link in the supply chain – devastated roads and bridges, limited numbers of trucks and drivers and fuel, many uninhabitable warehouses and stores, unreliable communications and electrical power, etc. Recovery operations seven days a week around the clock by thousands of government and private sector workers gradually restored enough of the infrastructure so that by November, terminal throughput equaled or exceeded the throughput prior to the storm.³⁵

Specific examples of logistics initiatives undertaken by the U.S.-flag shipping companies serving Puerto Rico include the following:

- All of the U.S.-flag carriers serving Puerto Rico provided significant aid to the logistics effort on the island — helping with supply-chain management, long-distance and local trucking, deconsolidation, cross-docking, and warehousing services in addition to ocean transport.



³³ American Maritime Partnership Situation Analyses (Oct. 2017–Jan. 2018).

³⁴ *Id.*

³⁵ *Id.*

- Crowley increased its vessel capacity by two-thirds, as well as adding thousands of leased shipping containers to its fleet. In support of FEMA, Crowley carried more than 8,000 loads of emergency relief cargo (water, meals, tarps, etc.), and carried out more than 6,000 on-island trucking missions delivering relief supplies to FEMA's Regional Supply Areas on the island.
- To help restore the power grid, Crowley carried more than 50,000 utility poles, 10 million miles of cable, 7,000 transformers, and hundreds of fuel and bucket trucks, as well as other specialized vehicles.
- Special project work completed by Crowley included ocean transport, trucking, delivery coordination, port services, and freight forwarding of breakbulk supplies and utility-related equipment to Puerto Rico's sister island of Vieques; transport of multiple bridges in sections to Puerto Rico to support the road reconstruction efforts in the Utuado region; transport and delivery of a 60-ton oversized drill required for setting the foundation for the bridges; and many other projects.
- TOTE Maritime added two container barges to its fleet to increase its capacity to carry vital goods to the island and supported more than 20 organizations throughout the island to distribute food, fuel, water, and other items necessary for day-to-day life.
- TOTE Maritime worked closely with a variety of partners and the Puerto Rican government to expedite cargo and restore critical infrastructure to communities throughout Puerto Rico. TOTE Maritime provided logistical support for the government for all cargo and containers they are distributing, as well as providing transportation for communications and power companies bringing supplies to the island.
- Before Hurricane Maria, Trailer Bridge had four barges calling on Puerto Rico with a weekly capacity of 861 FEU. To assist in the recovery effort immediately following the disaster, Trailer Bridge added a fifth vessel, increasing their capacity by 20 percent to 1,031 FEU to assist in the delivery of critical relief supplies to the island.
- During the recovery period, Trailer Bridge moved at least three containers per sailing at its own cost, with relief supplies from churches, schools, and other nonprofit organizations.
- Trailer Bridge worked with every single prime contractor that supported the relief efforts in Puerto Rico, including DynCorp, Fluor, and Louis Berger. They also assisted several small organizations in moving their equipment to and from Puerto Rico.
- Pasha Hawaii contributed capacity to support fellow U.S.-flag domestic carriers Crowley Maritime and TOTE Maritime's shipments of cargo for relief and rebuilding efforts in Puerto Rico. Their vessel, *Horizon Spirit*, brought over 8,000 containers to the island, utilizing the vessel's refrigerated and dry container capacity. They also returned 5,300 empty containers to the mainland. *Horizon Spirit* also delivered over 15 million bottles of FEMA-sponsored water, setting a world record for the largest single commodity shipment on a containership.

The efforts of Crowley, TOTE Maritime and Trailer Bridge in support of the people of Puerto Rico in recovering from the hurricane disaster has been recognized by the Seamen's Church Institute of New York, which awarded them a "Humanitarian Award" to be presented at the institute's Silver Bell Awards Dinner in June 2018. ■

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