

Economic Impacts of Visitor Spending in Puerto Rico

May 2019

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Research overview

Overview

The travel sector is an integral part of the Puerto Rico economy. Visitors generate significant economic benefits to households, businesses, and government alike and represent a critical driver of Puerto Rico's future. Direct GDP (gross domestic product) attributable to tourism spending represented 2.5% of Puerto Rico's total GDP in calendar year (CY) 2017.

By monitoring the visitor economy, policymakers can inform decisions regarding the funding and prioritization of the sector's development. They can also carefully monitor its successes and future needs. This is particularly true for Puerto Rico as it rebuilds its tourism economy. By establishing a baseline of economic impacts, the industry can track its progress over time.

To quantify the economic significance of the tourism sector in Puerto Rico, Tourism Economics has prepared a comprehensive model detailing the far reaching impacts arising from visitor spending. The results of this study show the scope of the travel sector in terms of direct visitor spending, as well as the total economic impacts, jobs, and fiscal (tax) impacts in the broader economy.

As part of this analysis, Tourism Economics took the following steps:

- Analyzed existing studies on visitor spending and tourism impacts in Puerto Rico;
- Compiled diverse data sets maintained by various government agencies and organizations in Puerto Rico; and
- Developed an economic impact model using IMPLAN data.

This document presents key elements of the research and findings. It is organized in five sections:

1. Person trips & spending summary
2. Economic impact analysis
3. Impacts of Hurricane Maria
4. Methods and data sources

Executive summary - visitor economy

Direct impacts of Puerto Rico's tourism sector (CY 2017)

- **Number of person trips:** Puerto Rico welcomed more than 7.0 million person trips in CY 2017, including 4.5 million non-resident person trips and 2.6 million resident person trips.
- **Direct tourism spending:** The 7.0 million person trips in CY 2017 generated nearly \$5.5 billion in direct tourism spending.
- **Direct GDP (gross domestic product/value added) and employment:** The tourism sector in Puerto Rico generated \$2.6 billion of direct GDP and 65,000 direct jobs. The direct GDP impact of \$2.6 billion represented 2.5% of Puerto Rico's total GDP in CY 2017.

The accompanying table summarizes person trips, visitor spending, and economic impacts attributable to Puerto Rico's tourism sector from CY 2012 to CY 2018.

Economic impacts of Puerto Rico tourism industry, CY 2012 - CY 2018

amounts in \$ billions, jobs, and thousands of person trips

	2012	2013	2014	2015	2016	2017	2018p
Total person trips (000s)	6,794	6,732	7,216	7,809	8,119	7,046	6,562
Tourism spending	\$5.29	\$5.33	\$5.68	\$6.19	\$6.47	\$5.47	\$5.02
Total economic impact	\$10.11	\$10.45	\$10.74	\$10.35	\$9.16	\$7.76	\$7.12
Total GDP (value added)	\$4.75	\$4.92	\$5.05	\$4.87	\$4.31	\$3.65	\$3.35
Total wages	\$2.09	\$2.09	\$2.16	\$2.24	\$2.28	\$2.14	\$2.09
Total jobs	81,296	81,495	83,640	86,860	88,671	82,679	79,949

Source: Tourism Economics Note: "p" indicates preliminary figures

Total impacts of Puerto Rico's tourism sector (CY 2017)

After accounting for indirect and induced impacts, Puerto Rico's tourism sector supported a total economic impact in CY 2017 of:

- **Output impacts:** Total output impacts in Puerto Rico amounted to nearly \$7.8 billion in CY 2017, including \$5.5 billion in direct tourism spending and \$2.3 billion in indirect and induced expenditures
- **Employment impacts:** In addition to 65,000 jobs directly supported by the tourism sector, visitor spending generated 18,000 indirect and induced jobs, resulting in a total job impact of nearly 83,000 jobs.
- **GDP impacts:** Puerto Rico's travel sector generated a total GDP impact of \$3.6 billion, including \$2.6 billion in direct GDP and \$1.1 billion in indirect and induced GDP. The total GDP impact of \$3.7 billion represented 3.5% of Puerto Rico's total GDP in 2017.

Executive summary - hurricane impacts

The importance of the visitor economy

Visitors spent \$5.5 billion in Puerto Rico in CY 2017.

This spending supported 83,000 jobs and generated \$974 million in taxes.

The visitor economy is 5th largest private sector employer in Puerto Rico on the basis of direct tourism employment.

Key trends

Between CY 2012 and CY 2016, visitor spending grew at an annual average rate of 5%.

In 2016, total spending reached \$6.4 billion, expanding 5% over 2015 spending levels.

However, in CY 2017, visitor spending declined 15% in the aftermath of Hurricane Maria. Visitor spending declined a further 9% in 2018.

The impact of Hurricane Maria

Hurricane Maria generated a loss of 1.2 million visits between September and December 2017 and a loss of more than 1.9 million visits in CY 2018.

These visits would have generated \$1.1 billion in visitor spending between September and December 2017 and more than \$1.7 billion in visitor spending in CY 2018.

Hurricane-related hotel demand reached a peak of more than 70% of hotel demand in late 2017.

In CY 2018, there were 710,000 hurricane-related visitors, representing 41% of total hotel visitors.

Relief activities comprised 15% of hotel demand in the final months of CY 2018.

Executive summary – economic impacts

Direct Impacts (CY 2017)

7.0 million person trips



Including residents & non-resident visitors

\$5.5 billion in direct tourism spending



representing cruise-related spending and spending by residents and non-resident visitors, including purchases on retail, lodging, transportation, food and beverage, and recreation

\$2.6 billion in direct GDP



(gross domestic product or value added)

65,000 jobs



directly supported by Puerto Rico's tourism industry

Indirect & Induced Impacts

Total Impacts (CY 2017)

\$7.8 billion in total output (business sales)



including direct, indirect, and induced output

\$3.6 billion in total GDP (value added)



including direct, indirect, and induced GDP impacts

83,000 total jobs



directly and indirectly supported by Puerto Rico's tourism industry

1. Visitors & spending summary

Overview of visitor spending in Puerto Rico

In CY 2017 there were 7.0 million total person trips to Puerto Rico, including 4.5 million person trips by non-resident visitors and 2.6 million person trips by residents.

The average spend per trip in CY 2017 was \$773 per person trip for non-resident visitors and \$762 per person trip for residents. Travelers spent more on lodging, food and beverage, and retail.

Puerto Rico welcomed 7.0 million person trips and \$5.4 billion in total visitor spending in CY 2017.

Total person trips & spending to Puerto Rico (thousands of visits and \$ millions) CY 2012-2018

	2012	2013	2014	2015	2016	2017	2018p
Total visitors (000s)	6,794	6,732	7,216	7,809	8,119	7,046	6,562
Non-resident visitors	4,461	4,348	4,699	5,119	5,115	4,476	4,504
Resident visitors	2,334	2,383	2,518	2,690	3,004	2,569	2,057
Total visitor spending (\$ millions)	\$5,239	\$5,277	\$5,620	\$6,122	\$6,405	\$5,420	\$4,949
Non-resident visitor spending	\$3,338	\$3,341	\$3,567	\$3,940	\$3,981	\$3,462	\$3,316
Resident visitor spending	\$1,901	\$1,936	\$2,053	\$2,183	\$2,424	\$1,957	\$1,633
Average spend per visitor (all visitors)	\$771	\$784	\$779	\$784	\$789	\$769	\$754
Non-resident average spending	\$748	\$768	\$759	\$770	\$778	\$773	\$736
Resident average spending	\$815	\$812	\$816	\$811	\$807	\$762	\$794

Source: Tourism Economics

Notes: Calendar year data on non-resident visits and non-resident visitor spending is based on fiscal year data maintained by the Planning Board through FY2017. Non-residents and residents in hotels are based on monthly lodging registration data through the end of 2018 from the Puerto Rico Tourism Company.

Non-resident person trips include non-resident visitors in hotels and other non-hotel accommodations. Resident person trips include residents staying overnight in hotels and other non-hotel accommodations, as well as resident day trippers.

Excursionists include cruise passengers and military personnel

Non-resident visits in "other places" include day trips and overnight visits in non-hotel accommodations.

"p" indicates preliminary figures

Visits to Puerto Rico

Between CY 2012 and CY 2017, total person trips to Puerto Rico have increased at an annual average rate of 0.7%.

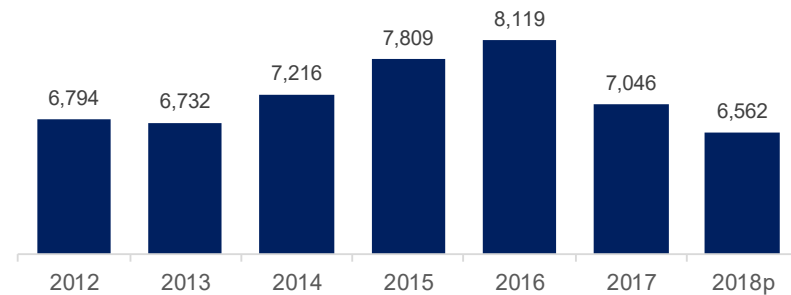
Puerto Rico welcomed 7.0 million person trips in CY 2017 (including 4.5 million person trips by non-resident visitors and 2.6 million person trips by residents), representing a 13% decline compared to 2016 levels.

After expanding 7% in CY 2014 and 8% in CY 2015, visitor growth expanded 4% in CY 2016 before the sharp decline in CY 2017 attributable to Hurricane Maria. With the continued impacts of Hurricane Maria, visitation to Puerto Rico declined 7% in 2018.

Between CY 2012 and CY 2017, total person trips to Puerto Rico have declined at an annual average rate of -0.7%.

Total person trips to Puerto Rico (000s person trips) CY 2012 – CY 2018

In thousands of person trips, CY 2012 - CY 2018

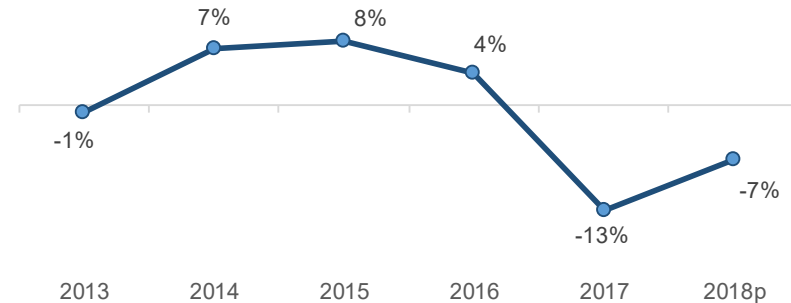


Source: Tourism Economics

Note: "p" indicates preliminary figures

Percentage change in person trips to Puerto Rico (year-on-year % change) CY 2013 – CY 2018

Year-on-year % change, CY 2013 - CY 2018



Source: Tourism Economics

Note: "p" indicates preliminary figures

Visitor spending in Puerto Rico

Visitor spending in Puerto Rico totaled more than \$5.4 billion in 2017, representing a 15% decline compared to CY 2016 levels.

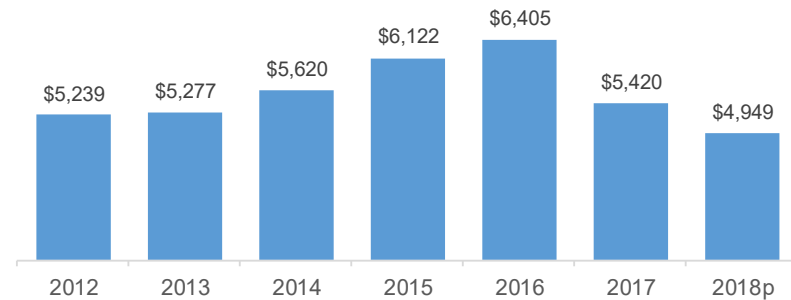
Total visitor spending experienced steady growth between CY 2012 and CY 2016. In CY 2016, total spending amounted to more than \$6.4 billion, expanding 5% over 2015 spending levels. Between CY 2012 and CY 2016, visitor spending grew at an annual average rate of 5%.

However, in CY 2017, visitor spending declined 15% in the aftermath of Hurricane Maria. With the effects of Hurricane Maria continuing through CY 2018, visitor spending declined 9% in CY 2018.

Between CY 2012 and CY 2016, total visitor spending grew at an annual average rate of 5.2%. Visitor spending declined 15% in CY 2017, due mainly to Hurricane Maria.

Total visitor spending in Puerto Rico (\$ millions) CY 2012 – CY 2018

In \$ millions, CY 2012 - CY 2018

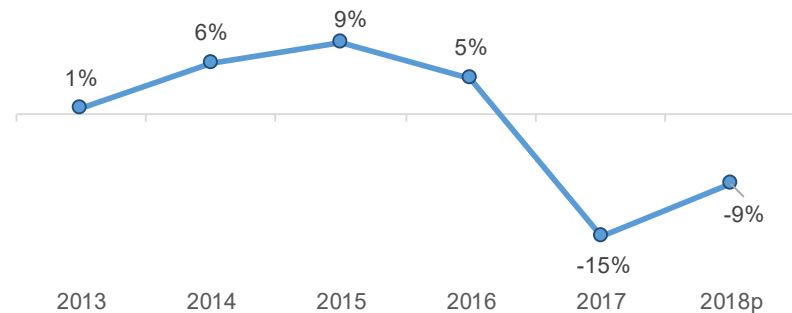


Source: Tourism Economics

Note: "p" indicates preliminary figures

Percentage change in visitor spending Puerto Rico (year-on-year % change) CY 2013 – CY 2018

Year-on-year % change, CY 2013 - CY 2018



Source: Tourism Economics

Note: "p" indicates preliminary figures

Visits by segment

In CY 2017, non-resident person trips accounted for 4.5 million person trips to Puerto Rico, including 1.6 million non-residents in hotels, 1.6 in other places (i.e., non-hotel accommodations), and 1.2 million excursionists (including cruise transit passengers and military personnel).

Residents accounted for 2.6 million person trips in CY 2017, including 0.8 million in hotels. More than 1.7 million residents in other places include residents staying in non-hotel accommodations and resident day trippers.

Notes:

Calendar year data on non-resident visits and non-resident visitor spending is based on fiscal year data maintained by the Planning Board through FY 2017. Non-residents in hotels are based on monthly lodging registration data through the end of CY 2018 from the Puerto Rico Tourism Company.

Excursionists include cruise passengers and military personnel.

Residents in hotels is based on monthly lodging registration data through the end of CY 2018 from the Puerto Rico Tourism Company.

Resident visitor spending is based on domestic tourism spending data from the World Travel & Tourism Council (WTTC).

Non-residents in "other places" include day trips and overnight visits in non-hotel accommodations.

In CY 2017, Puerto Rico welcomed 4.5 million non-resident person trips and 2.6 million resident person trips.

Non-resident & resident person trips, by segment (000s of person trips) CY 2012 – CY 2018

	2012	2013	2014	2015	2016	2017	2018p
Total person trips (000s)	6,794	6,732	7,216	7,809	8,119	7,046	6,562
Total non-resident person trips (000s)	4,461	4,348	4,699	5,119	5,115	4,476	4,504
In hotels	1,570	1,592	1,689	1,796	1,790	1,612	1,261
In other places	1,625	1,592	1,664	1,866	1,934	1,631	1,574
Excursionists	1,265	1,165	1,346	1,457	1,391	1,234	1,669
Total resident person trips (000s)	2,334	2,383	2,518	2,690	3,004	2,569	2,057
In hotels	864	835	849	851	850	841	484
In other places	1,469	1,549	1,669	1,839	2,154	1,728	1,574

Source: Tourism Economics

Note: "p" indicates preliminary figures

Non-resident & resident person trips, by segment (year-on-year % change) CY 2012 – CY 2018

	2012	2013	2014	2015	2016	2017	2018p
Total person trips		-1%	7%	8%	4%	-13%	-7%
Non-resident person trips		-3%	8%	9%	0%	-12%	1%
In hotels		1%	6%	6%	0%	-10%	-22%
In other places		-2%	5%	12%	4%	-16%	-4%
Excursionists		-8%	16%	8%	-5%	-11%	35%
Resident person trips		2%	6%	7%	12%	-14%	-20%
In hotels		-3%	2%	0%	0%	-1%	-42%
In other places		5%	8%	10%	17%	-20%	-9%

Source: Tourism Economics

Note: "p" indicates preliminary figures

Visitor spending by segment

In CY 2017, non-residents accounted for \$3.5 billion in spending, including \$1.9 billion in spending by non-residents in hotels, \$1.4 billion in spending by non-residents in other places (i.e., non-hotel accommodations), and \$0.2 billion in spending by excursionists (including cruise transit passengers and military personnel).

Residents accounted for \$2.0 billion in spending in CY 2017, including \$0.7 billion in spending by residents in hotels. Residents in other places (including residents staying in non-hotel accommodations and resident day trippers) spent \$1.3 billion in CY 2017.

Notes:

Calendar year data on non-resident visits and non-resident visitor spending is based on fiscal year data maintained by the Planning Board through FY 2017. Non-residents in hotels are based on monthly lodging registration data through the end of CY 2018 from the Puerto Rico Tourism Company.

Excursionists include cruise passengers and military personnel.

Residents in hotels is based on monthly lodging registration data through the end of CY 2018 from the Puerto Rico Tourism Company.

Resident visitor spending is based on domestic tourism spending data from the World Travel & Tourism Council (WTTC).

Non-residents in "other places" include day trips and overnight visits in non-hotel accommodations.

Non-residents spent \$3.5 billion in CY 2017, while residents spent \$2.0 billion.

Non-resident & resident spending, by segment (\$ millions) CY 2012 – CY 2018

	2012	2013	2014	2015	2016	2017	2018p
Total visitor spending (\$ millions)	\$5,239	\$5,277	\$5,620	\$6,122	\$6,405	\$5,420	\$4,949
Non-resident spending (\$ millions)	\$3,338	\$3,341	\$3,567	\$3,940	\$3,981	\$3,462	\$3,316
In hotels	\$1,777	\$1,819	\$1,936	\$2,117	\$2,112	\$1,867	\$1,732
In other places	\$1,373	\$1,348	\$1,428	\$1,602	\$1,660	\$1,408	\$1,308
Excursionists	\$188	\$175	\$203	\$220	\$210	\$188	\$275
Resident spending (\$ millions)	\$1,901	\$1,936	\$2,053	\$2,183	\$2,424	\$1,957	\$1,633
In hotels	\$752	\$725	\$741	\$741	\$739	\$687	\$428
In other places	\$1,150	\$1,211	\$1,312	\$1,441	\$1,685	\$1,270	\$1,205

Source: Tourism Economics

Note: "p" indicates preliminary figures

Non-resident & resident spending, by segment (year-on-year % change) CY 2012 – CY 2018

	2012	2013	2014	2015	2016	2017	2018p
Total visitor spending		1%	6%	9%	5%	-15%	-9%
Non-resident spending		0%	7%	10%	1%	-13%	-4%
In hotels		2%	6%	9%	0%	-12%	-7%
In other places		-2%	6%	12%	4%	-15%	-7%
Excursionists		-7%	16%	8%	-5%	-10%	47%
Resident spending		2%	6%	6%	11%	-19%	-17%
In hotels		-4%	2%	0%	0%	-7%	-38%
In other places		5%	8%	10%	17%	-25%	-5%

Source: Tourism Economics

Note: "p" indicates preliminary figures

Cruise-related spending

In addition to spending by cruise passengers during onshore visits in Puerto Rico, the cruise industry generates additional economic benefits as crew members and cruise lines spend money in Puerto Rico. These economic benefits include:

- Crew member spending at local retailers and businesses,
- Cruise line payments to ports for passenger taxes and port services, and
- Cruise line payments to local businesses for supplies and services, such as food and beverages.

Based on data from BREA's 2018 study, "Economic Contribution of Cruise Tourism to the Destination Economies", crew member spending and cruise line spending amounted to \$35 million and \$38 million, respectively, in CY 2018.

Total cruise-related spending amounted to \$73 million in CY 2018.

Cruise-related spending (\$ millions) CY 2012 – CY 2018

	2012	2013	2014	2015	2016	2017	2018p
Total cruise-related spending (\$ millions)	\$55	\$50	\$59	\$63	\$60	\$54	\$73
Crew member spending	\$26	\$24	\$28	\$30	\$28	\$25	\$35
Cruise line spending	\$29	\$27	\$31	\$33	\$32	\$28	\$38

Sources: Tourism Economics, Business Research Economic Advisors

Note: "p" indicates preliminary figures

Summary direct spending

Total direct tourism spending amounted to nearly \$5.5 billion in CY 2017, including \$5.4 billion in visitor spending and \$54 million in cruise-related spending. Total direct spending in CY 2017 declined 15.3% compared to CY 2016 levels.

Total direct spending in CY 2018 amounted to more than \$5.0 billion, representing an 8.3% decline compared to CY 2017 levels.

Total direct tourism spending amounted to nearly \$5.5 billion in CY 2017, representing a 15.3% decline compared to CY 2016 levels.

Summary direct tourism spending (\$ millions) CY 2012 – CY 2018

	2012	2013	2014	2015	2016	2017	2018p
Total direct tourism spending (\$ millions)	\$5,294	\$5,328	\$5,678	\$6,186	\$6,465	\$5,473	\$5,022
Visitor spending (\$ millions)	\$5,239	\$5,277	\$5,620	\$6,122	\$6,405	\$5,420	\$4,949
Non-resident spending	\$3,338	\$3,341	\$3,567	\$3,940	\$3,981	\$3,462	\$3,316
Resident spending	\$1,901	\$1,936	\$2,053	\$2,183	\$2,424	\$1,957	\$1,633
Cruise-related spending (\$ millions)	\$55	\$50	\$59	\$63	\$60	\$54	\$73
Crew spending	\$26	\$24	\$28	\$30	\$28	\$25	\$35
Cruise-line spending	\$29	\$27	\$31	\$33	\$32	\$28	\$38

Source: Tourism Economics

Note: "p" indicates preliminary figures

Direct spending by sector

Total direct tourism spending (including visitor spending and cruise-related spending) experienced steady growth between CY 2012 and CY 2016. In CY 2016, total spending amounted to nearly \$6.5 billion, expanding 4.5% over 2015 spending levels. Between CY 2012 and CY 2016, visitor spending grew at an annual average rate of 5.0%. However, in the aftermath of Hurricane Maria, visitor spending declined 15.3% in 2017 and 8.3% in CY 2018.

Direct spending performance in CY 2017 was mainly supported by spending in the food services (\$1.9 billion), retail (\$1.1 billion), and accommodation (\$1.0 billion) sectors in 2017.

The food services, accommodation, and retail sectors made up the majority of visitor spending in CY 2017.

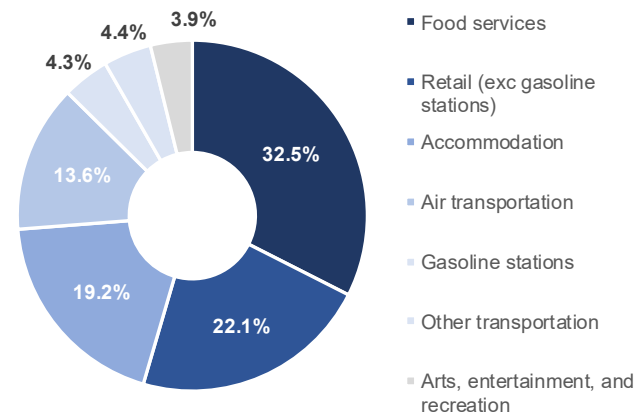
Direct tourism spending (visitor spending & cruise-related spending) by industry (\$ millions) CY 2012 – CY 2018

	2012	2013	2014	2015	2016	2017	2018p
Total, all industries	\$5,321	\$5,328	\$5,678	\$6,186	\$6,465	\$5,473	\$5,022
By industry							
Retail (exc gasoline stations)	\$1,174	\$1,140	\$1,239	\$1,319	\$1,461	\$1,090	\$953
Gasoline stations	\$230	\$268	\$236	\$359	\$374	\$307	\$286
Air transportation	\$725	\$729	\$783	\$852	\$885	\$765	\$694
Other transportation	\$236	\$251	\$272	\$248	\$284	\$242	\$230
Arts, entertainment, and rec	\$205	\$205	\$203	\$244	\$323	\$199	\$178
Accommodation	\$1,024	\$1,019	\$1,056	\$1,093	\$1,049	\$976	\$983
Food services	\$1,727	\$1,717	\$1,889	\$2,071	\$2,090	\$1,894	\$1,699

Source: Tourism Economics

Note: "p" indicates preliminary figures

Percentage share of direct tourism spending, by industry, CY 2017



2. Economic impacts of tourism spending

Economic impact approach

The economic impacts of each component of direct tourism spending were estimated using a regional Input-Output (I-O) model based on a customized IMPLAN (www.implan.com) model for the economy of Puerto Rico. IMPLAN is recognized as one of two industry standards in local-level I-O models. An I-O model represents a profile of an economy by measuring the relationships among industries and consumers.

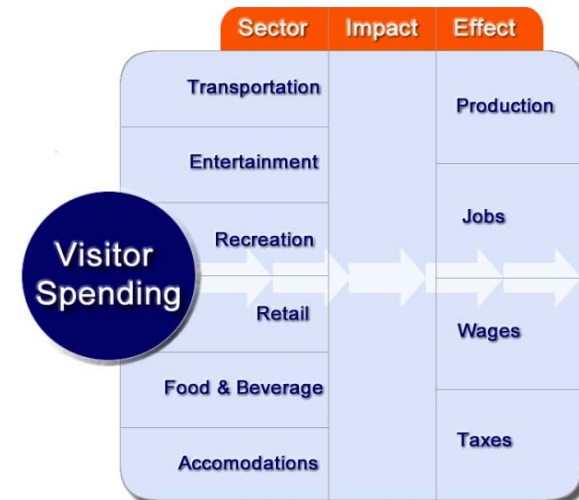
For example, an I-O model tracks the flow of a visitor's restaurant expenditures to wages, profits, capital, taxes and suppliers. The supplier chain is also traced to food wholesalers, to farmers, and so on. In this way, the I-O model allows for the measurement of the direct and indirect sales generated by a restaurant meal. The model also calculates the induced impacts of tourism. These induced impacts represent benefits to the economy as employees of tourism sectors spend their wages in the local economy, generating additional output, jobs, taxes, and wages.

IMPLAN is particularly effective because it calculates these three levels of impact – direct, indirect, and induced – for a broad set of indicators. These include the following:

- Spending
- Wages
- Employment
- Federal Taxes
- State Taxes
- Local Taxes

The modeling process begins with aligning the expenditure measurements with the related sectors in the model (e.g. sports & recreation, restaurants, retail, and entertainment). The model is then run to simulate the flow of these expenditures through the economy. In this process, the inter-relationships between consumers and industries generate each level of impact for each economic indicator (sales, wages, employment, etc.).

Illustration of economic impact model



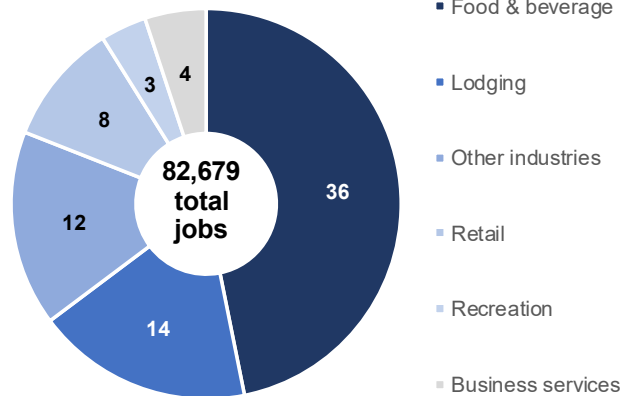
Summary economic impacts

In CY 2017, \$5.5 billion in tourism spending generated \$0.9 billion in indirect expenditures and \$1.4 billion in induced expenditures, resulting in a total economic impact of nearly \$7.8 billion in Puerto Rico.

- \$7.8 billion of economic output (business sales)
- \$2.1 billion in total wages (labor income);
- Nearly 83,000 total jobs; and,
- \$974.00 million of taxes, including \$640.1 million in state and local taxes and \$334.3 million in federal taxes.

Total job impacts attributable to visitor spending, CY 2017

Jobs (in thousands)



The tourism economy in Puerto Rico supported nearly \$7.8 billion of total output (business sales) in 2017.

Summary economic impacts (\$ billions and jobs) CY 2017

Amounts in billions of US dollars, except jobs

Direct spending (visitor & cruise-related spending)

Output (business sales)	\$5,473
Wages (labor income)	\$1,551
Employment	64,599
GDP (gross domestic product)	\$2,585

Total visitor spending impacts

Output (business sales)	\$7,755
Wages (labor income)	\$2,139
Employment	82,679
GDP (gross domestic product)	\$3,647

Total tax impacts

State and local tax revenue	\$0.64
Federal tax revenue	\$0.33

Source: Tourism Economics

Tourism sales by industry

In CY 2017, \$5.5 billion in tourism spending (including visitor spending and cruise-related spending) generated \$0.9 billion in indirect expenditures and \$1.4 billion in induced expenditures, resulting in a total economic impact of nearly \$7.8 billion in Puerto Rico.

The tourism economy in Puerto Rico supported nearly \$7.8 billion of total output (business sales) in 2017.

Total sales impacts by industry (\$ millions) CY 2017

	Direct output	Indirect output	Induced output	Total output
Total, all industries (\$ millions)	\$5,473	\$904	\$1,378	\$7,755
By industry (\$ millions)				
Agriculture, Fishing, Mining	\$0.0	\$10.7	\$8.2	\$18.9
Construction and Utilities	\$0.0	\$14.7	\$7.4	\$22.2
Manufacturing	\$0.0	\$194.7	\$148.3	\$343.0
Wholesale Trade	\$0.0	\$55.4	\$49.0	\$104.5
Air Transport	\$765.3	\$2.2	\$3.6	\$771.2
Other Transport	\$242.1	\$83.4	\$12.4	\$337.9
Retail Trade	\$1,090.1	\$6.3	\$188.1	\$1,284.5
Gasoline Stations	\$306.7	\$2.3	\$10.7	\$319.7
Communications	\$0.0	\$81.1	\$81.1	\$162.2
Finance, Insurance and Real Estate	\$0.0	\$156.4	\$376.1	\$532.5
Business Services	\$0.0	\$235.9	\$73.6	\$309.4
Education and Health Care	\$0.0	\$1.1	\$281.8	\$282.8
Recreation and Entertainment	\$199.3	\$2.9	\$8.6	\$210.8
Lodging	\$975.9	\$9.2	\$14.8	\$999.9
Food & Beverage	\$1,894.2	\$28.8	\$97.3	\$2,020.2
Personal Services	\$0.0	\$0.0	\$14.1	\$14.1
Government	\$0.0	\$18.7	\$2.9	\$21.6

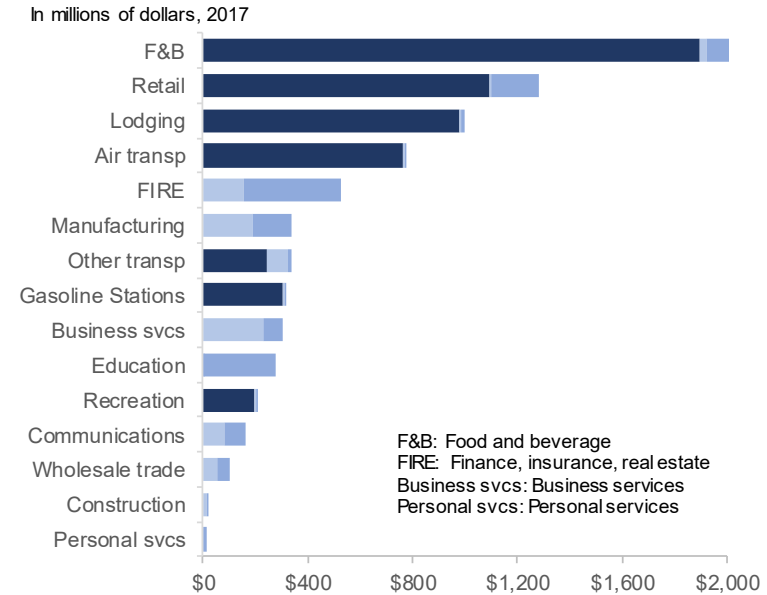
Source: Tourism Economics

Tourism sales by industry

The food and beverage industry was the most impacted industry with approximately \$2.0 billion in total output in CY 2017. Retail and lodging followed, with \$1.3 billion and \$1.0 billion in total output, respectively.

The tourism economy in Puerto Rico supported nearly \$7.8 billion of total output (business sales) in 2017.

**Total sales impacts by industry (\$ millions)
CY 2017**



Source: Tourism Economics

Tourism GDP (value added) by industry

In CY 2017, the tourism sector generated nearly \$2.6 billion in direct GDP (value added), resulting in \$0.4 billion in indirect GDP and \$0.7 billion in induced GDP. The tourism sector's total GDP impact totaled approximately \$3.6 billion.

The tourism economy in Puerto Rico supported \$3.6 billion of total GDP (value added) in CY 2017.

Total GDP (value added) impacts by industry (\$ millions) CY 2017

	Direct GDP (value added)	Indirect GDP (value added)	Induced GDP (value added)	Total GDP (value added)
Total, all industries (jobs)	\$2,585	\$391	\$671	\$3,647
By industry (jobs)				
Agriculture, Fishing, Mining	\$0.0	\$4.9	\$4.2	\$9.0
Construction and Utilities	\$0.0	\$6.8	\$3.4	\$10.2
Manufacturing	\$0.0	\$35.1	\$40.6	\$75.7
Wholesale Trade	\$0.0	\$33.7	\$29.8	\$63.4
Air Transport	\$491.2	\$1.2	\$2.0	\$494.3
Other Transport	\$150.2	\$30.5	\$5.0	\$185.7
Retail Trade	\$227.9	\$6.0	\$103.6	\$337.6
Gasoline Stations	\$26.7	\$1.1	\$5.4	\$33.2
Communications	\$0.0	\$29.1	\$32.1	\$61.3
Finance, Insurance and Real Estate	\$0.0	\$81.6	\$213.2	\$294.8
Business Services	\$0.0	\$127.0	\$42.5	\$169.6
Education and Health Care	\$0.0	\$0.4	\$120.4	\$120.8
Recreation and Entertainment	\$134.0	\$1.6	\$4.8	\$140.3
Lodging	\$803.1	\$6.3	\$10.2	\$819.7
Food & Beverage	\$751.9	\$11.0	\$43.5	\$806.4
Personal Services	\$0.0	\$0.0	\$8.1	\$8.1
Government	\$0.0	\$14.4	\$2.2	\$16.6

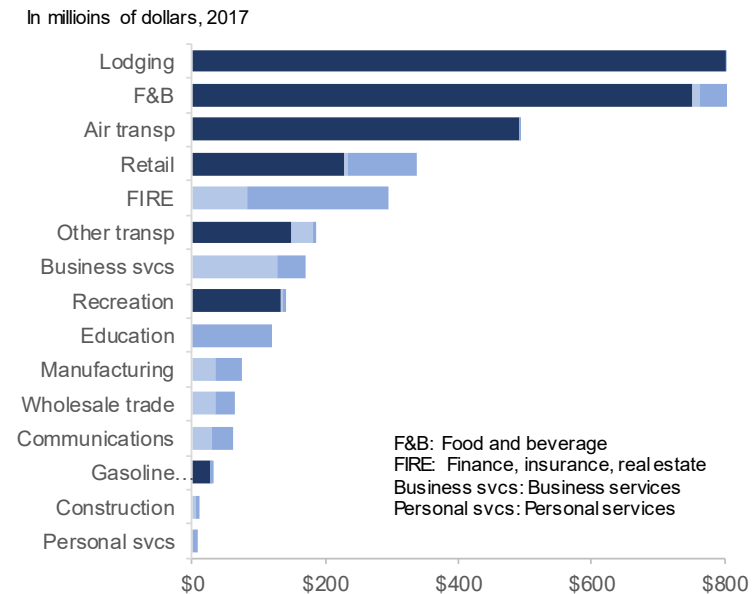
Source: Tourism Economics

Tourism GDP (value added) by industry

The lodging industry was the most impacted industry with more than \$0.8 billion in total GDP in CY 2017. Food and beverage followed, with \$0.8 billion in total GDP.

The tourism economy in Puerto Rico supported \$3.6 billion of total GDP (value added) in CY 2017.

Total GDP (value added) impacts by industry (\$ millions) CY 2017



Source: Tourism Economics

Tourism employment by industry

Nearly 83,000 jobs in Puerto Rico were sustained by tourism in CY 2017. The tourism industry directly supported approximately 65,000 jobs. Indirect and induced impacts generated approximately 6,700 indirect jobs and 11,400 induced jobs.

The tourism industry in Puerto Rico supported nearly 83,000 total jobs in CY 2017.

Total employment impacts by industry (number of jobs) CY 2017

	Direct jobs	Indirect jobs	Induced jobs	Total jobs
Total, all industries (jobs)	64,599	6,684	11,396	82,679
By industry (jobs)				
Agriculture, Fishing, Mining	-	293	244	538
Construction and Utilities	-	109	51	160
Manufacturing	-	397	216	612
Wholesale Trade	-	336	297	633
Air Transport	5,781	17	27	5,825
Other Transport	3,726	569	114	4,409
Retail Trade	4,791	327	2,668	7,786
Gasoline Stations	479	24	115	618
Communications	-	186	230	416
Finance, Insurance and Real Estate	-	607	530	1,137
Business Services	-	2,909	1,005	3,914
Education and Health Care	-	17	3,473	3,491
Recreation and Entertainment	2,741	49	135	2,925
Lodging	13,437	132	219	13,788
Food & Beverage	33,643	520	1,864	36,028
Personal Services	-	-	178	178
Government	-	192	30	222

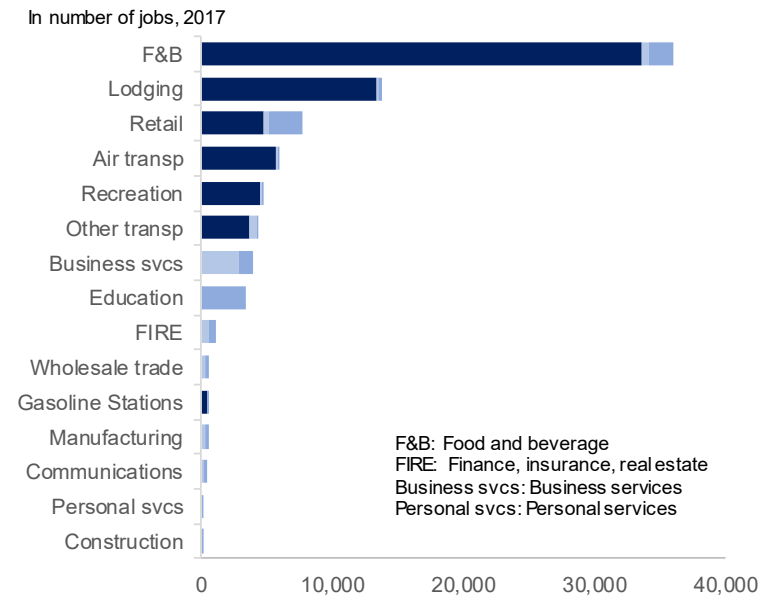
Source: Tourism Economics

Tourism employment by industry

The tourism industry in Puerto Rico supported nearly 83,000 total jobs in CY 2017.

The food and beverage industry ranked first with approximately 36,000 total jobs in CY 2017, including 34,000 jobs directly supported by the tourism industry. The lodging industry followed with approximately 14,000 total jobs, including more than 13,400 direct jobs.

Total employment impacts by industry (number of jobs) CY 2017



Source: Tourism Economics

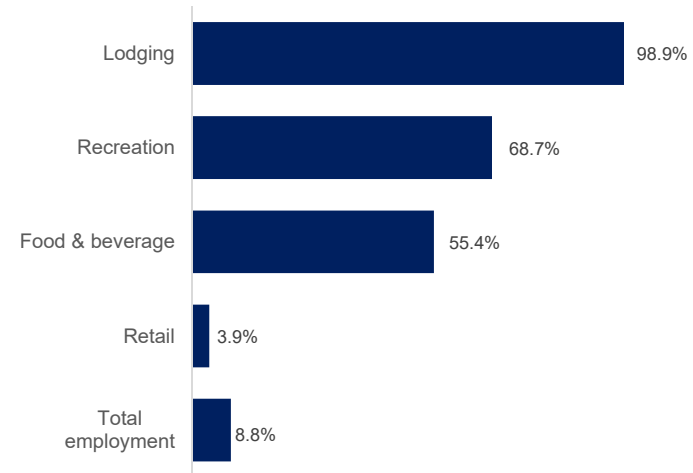
Tourism employment contribution

The accompanying chart shows the share of employment in selected industries that was directly supported by visitor spending in CY 2017. As an example: nearly 99% of all jobs in the lodging industry are supported by visitor spending, while 69% of all jobs in the recreation industry are supported by tourism spending.

Overall, the impacts attributable to tourism spending support approximately 8.8% of all jobs in Puerto Rico.

Total impacts attributable to visitor spending support approximately 8.8% of all jobs in Puerto Rico.

Total employment intensity by industry CY 2017



Source: Tourism Economics

Note: Total employment share includes direct, indirect, and induced impacts. All other industry shares are direct employment only.

Tourism employment by industry

Tourism is the fifth largest employer in Puerto Rico.

Tourism is the fifth largest employer in Puerto Rico on the basis of direct tourism employment.

The accompanying table compares our estimates of tourism-generated employment with total employment by sector.

Employment ranking in Puerto Rico CY 2017

Rank	BLS Industry	Industry	2017 BLS employment
1	44-45	Retail Trade	124,431
2	62	Health Care and Social Assistance	83,424
3	56	Administrative and Support and Waste Management	71,854
4	31-33	Manufacturing	70,320
5		Tourism	64,599
6	54	Accommodation and Food Services*	30,733
7	61	Educational Services	30,160
8	52	Finance and Insurance	29,003
9	42	Wholesale Trade	28,994
10	72	Accommodation and Food Services	27,315
11	23	Construction	21,475
12	51	Information	17,636
13	48-49	Transportation and Warehousing	15,481
14	81	Other Services (except Public Administration)	14,595
15	55	Management of Companies and Enterprises	13,587
16	53	Real Estate and Rental and Leasing	13,501
17	11	Agriculture, Forestry, Fishing and Hunting	10,916
18	71	Arts, Entertainment, and Recreation	3,991

Source: Tourism Economics

* Net of direct tourism-generated employment

Tourism wages by industry

The tourism sector in Puerto Rico supported more than \$2.1 billion of total wages (labor income) in CY 2017.

Visitors generated more than \$2.1 billion in total wages (labor income) in CY 2017, including \$1.6 billion in direct wages, \$0.2 billion in indirect wages, and \$0.3 billion in induced wages.

Total wage (labor income) impacts by industry (\$ millions) CY 2017

	Direct wages	Indirect wages	Induced wages	Total wages
Total, all industries (\$ millions)	\$1,551	\$247	\$340	\$2,139
By industry (\$ millions)				
Agriculture, Fishing, Mining	\$0.0	\$5.4	\$4.6	\$9.9
Construction and Utilities	\$0.0	\$4.5	\$2.1	\$6.7
Manufacturing	\$0.0	\$12.4	\$8.2	\$20.6
Wholesale Trade	\$0.0	\$17.1	\$15.2	\$32.3
Air Transport	\$244.0	\$0.7	\$1.2	\$245.9
Other Transport	\$104.4	\$25.5	\$4.2	\$134.1
Retail Trade	\$109.6	\$8.1	\$68.8	\$186.6
Gasoline Stations	\$17.4	\$0.9	\$4.2	\$22.5
Communications	\$0.0	\$11.1	\$10.2	\$21.3
Finance, Insurance and Real Estate	\$0.0	\$28.8	\$25.0	\$53.8
Business Services	\$0.0	\$102.7	\$35.3	\$138.1
Education and Health Care	\$0.0	\$0.5	\$115.9	\$116.3
Recreation and Entertainment	\$68.0	\$1.1	\$3.2	\$72.2
Lodging	\$419.5	\$3.9	\$6.4	\$429.9
Food & Beverage	\$587.8	\$9.0	\$27.5	\$624.3
Personal Services	\$0.0	\$0.0	\$6.0	\$6.0
Government	\$0.0	\$15.8	\$2.5	\$18.2

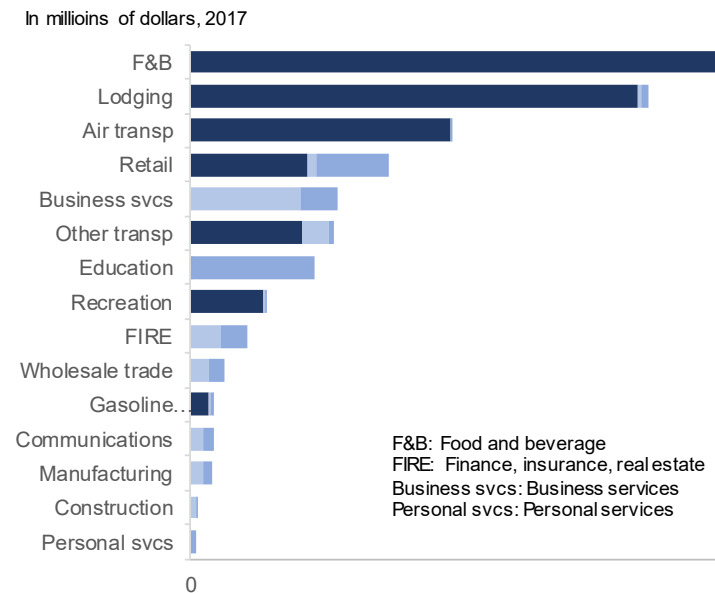
Source: Tourism Economics

Tourism wages by industry

The food and beverage industry was the most impacted industry in CY 2017 with approximately \$624 million in total wages, including \$588 million in direct wages, \$9 million in indirect wages, and \$28 million in induced wages. The lodging industry followed, with \$430 million in total wages, including \$420 million in direct wages.

The tourism sector in Puerto Rico supported more than \$2.1 billion of total wages (labor income) in CY 2017.

Total wage (labor income) impacts by industry (\$ millions) CY 2017



Source: Tourism Economics

Tourism tax generation

Tourism spending directly generated \$495 million in state and local taxes, including \$237 million in sales tax revenue.

The tourism industry generated approximately \$974 million in total taxes and fees in CY 2017.

Direct tourism spending generated \$495 million in state and local taxes, including approximately \$237 million in sales tax revenue (which included \$72 million in accommodations tax revenue) and \$205 million in personal income tax revenue.

Total federal tax revenue amounted to nearly \$251 million in CY 2017.

Tourism-generated tax revenues (\$ millions) CY 2017

	Direct taxes	Indirect & induced taxes	Total taxes
Total, all taxes	\$745.3	\$229.1	\$974.4
Federal taxes	\$250.6	\$83.7	\$334.3
Personal income	\$1.2	\$0.3	\$1.5
Corporate	\$20.6	\$22.4	\$42.9
Indirect business	\$60.4	\$13.3	\$73.7
Social security	\$168.4	\$47.7	\$216.0
State & local taxes	\$494.7	\$145.4	\$640.1
Sales	\$237.4	\$52.3	\$289.7
Accommodations tax	\$71.5	\$0.0	\$71.5
Personal income	\$204.7	\$77.6	\$282.2
Corporate	\$3.2	\$3.5	\$6.7
Social security	\$2.8	\$0.8	\$3.6
Property	\$5.2	\$2.1	\$7.3
Other taxes and fees	\$41.4	\$9.2	\$50.6

Source: Tourism Economics

3. Impacts of Hurricane Maria

Hurricane Maria

Relief efforts in the wake of Hurricane Maria brought thousands of volunteers and relief workers to Puerto Rico.

Hurricane Maria was a Category 5 hurricane that hit Puerto Rico in mid-September 2017. As one of the worst natural disasters on record, Hurricane Maria caused catastrophic devastation, killing thousands of people in Puerto Rico. This section analyzes Hurricane Maria's impacts on visitor volume, visitor spending, and GDP for the following scenarios:

- Total economic losses attributable to Hurricane Maria from September 2017 through the end of CY 2018
- Relief efforts in the wake of Hurricane Maria brought thousands of volunteers and relief workers to Puerto Rico and displaced families who sought refuge in local hotels. Hurricane-related spending on lodging, food, and incidentals artificially inflates CY 2017 and CY 2018 visitor levels and visitor spending.
- This section analyzes the following scenarios attributable to Hurricane Maria:
 - Number of person trips and spending in CY 2017 and CY 2018 net of activity attributable to Hurricane Maria relief efforts.
 - Number of person trips and spending in CY 2017 and CY 2018 if Hurricane Maria had not landed in Puerto Rico

Hurricane Maria: Impacts net of hurricane-related activity

The accompanying chart shows the following hotel metrics through the end of CY 2018:

- Actual hotel room demand
- Estimated hotel room demand net of hurricane-related demand

Overall, we estimate that hurricane-related visits amounted to 255,000 visits in 2017 (September through December) and 710,000 visits in 2018. The 255,000 visits generated \$367 million in hurricane-related spending in 2017 (September through December) and the 710,000 visits in CY 2018 generated \$729 million in hurricane-related spending.

Total visits in CY 2017 net of hurricane-related visits would have totaled 6.8 million visits, while total visits in CY 2018 net of hurricane-related visits would have totaled 5.9 million visits.

Total spending net of hurricane-related spending would have totaled approximately \$5.1 billion in CY 2017 and \$4.3 billion in 2018.

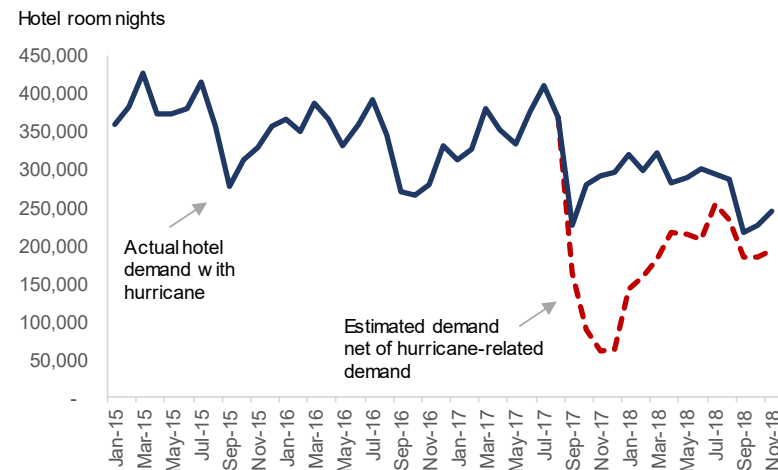
Total spending net of hurricane-related spending would have totaled approximately \$5.1 billion in 2017 and \$4.3 billion in CY 2018.

Estimated visitors and spending net hurricane-related activity (thousands of visitors and \$ millions) CY 2012 – CY 2018

	2012	2013	2014	2015	2016	2017	2018p
Visitors (000s)							
Actual visitors	6,794	6,732	7,216	7,809	8,119	7,046	6,562
Less hurricane-related visits						255	710
Estimated visitors net of hurricane-related visits	6,794	6,732	7,216	7,809	8,119	6,791	5,852
Visitor spending (\$ millions)							
Actual visitor spending	\$5,294	\$5,328	\$5,678	\$6,186	\$6,465	\$5,473	\$5,022
Less spending by hurricane-related visits						\$367	\$729
Estimated visitor spending net of hurricane-related spending	\$5,294	\$5,328	\$5,678	\$6,186	\$6,465	\$5,107	\$4,292

Source: Tourism Economics

Note: "p" indicates preliminary figures



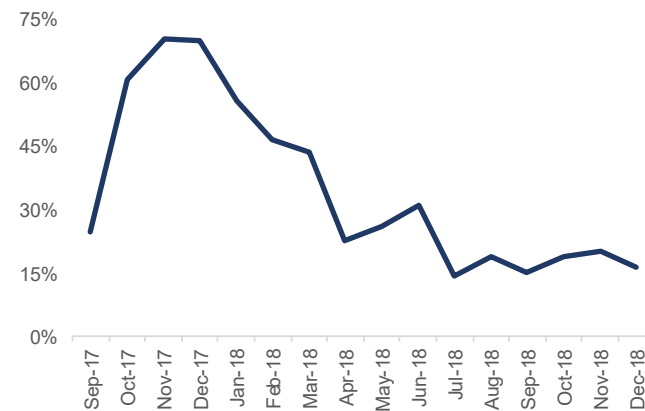
Hurricane Maria: Impacts net of hurricane-related activity

As many hotels closed in the aftermath of Hurricane Maria, destination occupancy percentages in Puerto Rico were artificially inflated due to the drastic reduction in hotel room supply. In addition to supply constraints attributable to hotel closures, the majority of hotel rooms immediately proceeding the hurricane were occupied by both relief workers arriving in Puerto Rico and local residents seeking shelter in hotels.

As shown in the accompanying chart, hurricane-related hotel demand reached a peak of more than 70% of total hotel demand in November and December 2017. The effects of hurricane relief activities on hotel demand are evident through CY 2018, with hurricane-related demand comprising approximately 15% of total hotel demand in the final months of the year.

Hurricane-related demand reached a peak of more than 70% of total hotel demand in the final months of CY 2017.

Hurricane-related hotel demand as % of total hotel demand



Source: Tourism Economics

Hurricane Maria: Impacts net of hurricane-related activity

Based on monthly non-resident and resident hotel registration data tracked by PRTC (Puerto Rico Tourism Company), hotels welcomed 307,000 total visitors between September and December 2017. Tourism Economics estimates hurricane-related visits during the same time period amounted to 255,000 visits, representing 83% of total hotel visits.

In CY 2017, the 255,000 hurricane-related hotel visitors represented 10% of the nearly 2.5 million total annual hotel registrations. After excluding hurricane-related visitors, hotel visitors in 2017 totaled 2.2 million visitors.

In CY 2018, total visitors in hotels amounted to 1.7 million visitors, including 1.3 million non-resident visitors and 0.5 million resident visitors. We estimate that there were 710,000 hurricane-related visitors, representing 41% of total hotel visitors. After excluding hurricane-related visitors, hotel visitors in 2018 totaled 1.0 million visitors.

Hurricane-related visitors represented 83% of total hotel visitors between September and December 2017 and 41% of hotel visitors in CY 2018.

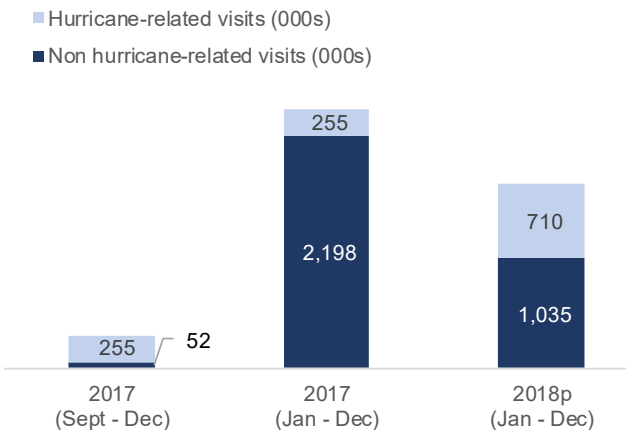
Estimated visitors and spending net hurricane-related activity

	2017 (Sept to Dec)	2017 (Jan to Dec)	2018p (Jan to Dec)
Visitors in hotels (000s)*	307	2,453	1,744
Non-residents in hotels	226	1,612	1,261
Residents in hotels	81	841	484
Hurricane-related visitors in hotels (000s)	255	255	710
as % of total visits in hotels	83%	10%	41%
Visitors in hotels net hurricane-related visits (000s)	52	2,198	1,035

Source: Tourism Economics

Note: "p" indicates preliminary figures

Note: Data on visitors in hotels is based on monthly non-resident and resident hotel registration data from the Puerto Rico Tourism Company.



Hurricane Maria: Visits and spending without the hurricane

The accompanying chart shows the following hotel metrics through the end of CY 2018:

- Estimated hotel room demand net of hurricane-related demand
- Estimated hotel room demand if Hurricane Maria had not landed in Puerto Rico

Overall, we estimate that Hurricane Maria generated a loss of 1.2 million visits between September and December 2017 and a loss of more than 1.9 million visits in CY 2018. These visits would have generated \$1.1 billion in visitor spending between September and December 2017 and more than \$1.7 billion in visitor spending in 2018.

In the absence of Hurricane Maria, total visits in CY 2017 and CY 2018 would have amounted to 8.2 million visits and 8.4 million visits, respectively. Total visitor spending would have amounted to \$6.5 billion in CY 2017 and \$6.7 billion in CY 2018.

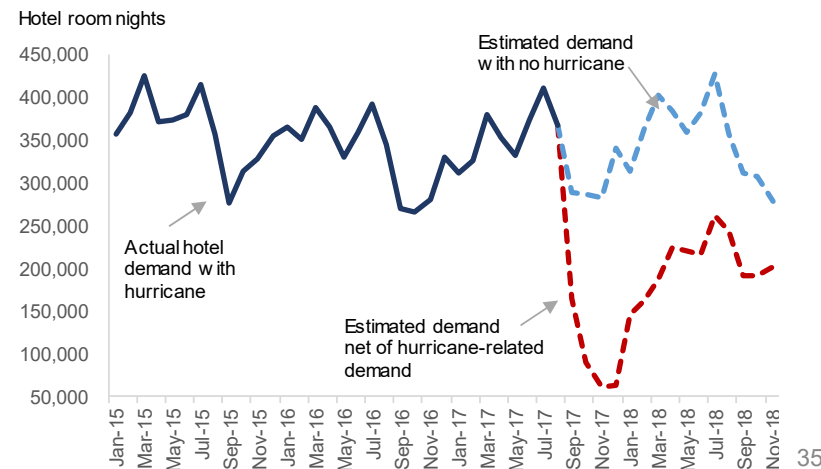
Total spending would have totaled approximately \$6.5 billion in 2017 and \$6.7 billion in CY 2018 in the absence of Hurricane Maria.

Estimated visitors and spending in the absence of Hurricane Maria, CY 2012 – CY 2018

	2012	2013	2014	2015	2016	2017	2018p
Visitors (000s)							
Actual visitors	6,794	6,732	7,216	7,809	8,119	7,046	6,562
Lost visits due to hurricane						1,170	1,862
Visitors with no hurricane	6,794	6,732	7,216	7,809	8,119	8,215	8,424
Year-on-year % change		-0.9%	7.2%	8.2%	4.0%	1.2%	2.5%
Visitor spending (\$ millions)							
Actual visitor spending	\$5,239	\$5,277	\$5,620	\$6,122	\$6,405	\$5,420	\$4,949
Lost spending due to hurricane						\$1,070	\$1,730
Visitor spending with no hurricane	\$5,239	\$5,277	\$5,620	\$6,122	\$6,405	\$6,489	\$6,679
Year-on-year % change		0.7%	6.5%	8.9%	4.6%	1.3%	2.9%

Source: Tourism Economics

Note: "p" indicates preliminary figures



Hurricane Maria: Visits and spending without the hurricane

In the absence of Hurricane Maria, total visits in CY 2017 and CY 2018 would have amounted to 8.2 million visits and 8.4 million visits, respectively. Total visitor spending would have amounted to \$6.5 billion in 2017 and \$6.7 billion in 2018.

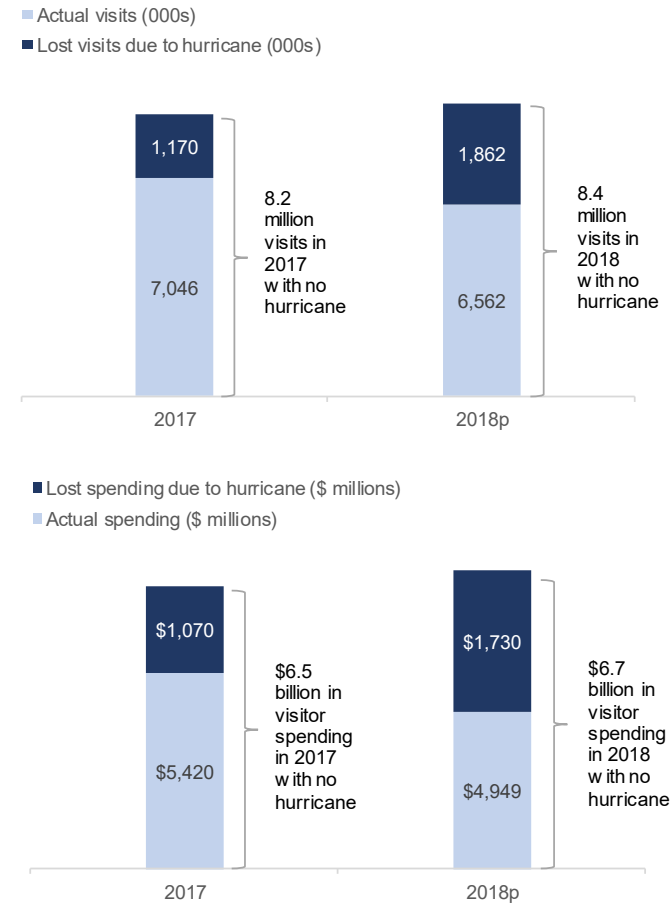
Estimated visitors and spending in the absence of Hurricane Maria, CY 2017 & CY 2018

in thousands of visits and \$ millions	2017	2018p
Visits (000s)		
Actual visits	7,046	6,562
Lost visits due to hurricane	1,170	1,862
Visits with no hurricane	8,215	8,424
Visitor spending (\$ millions)		
Actual visitor spending	\$5,420	\$4,949
Lost spending due to hurricane	\$1,070	\$1,730
Visitor spending with no hurricane	\$6,489	\$6,679

Source: Tourism Economics

Total spending would have totaled approximately \$6.5 billion in 2017 and \$6.7 billion in CY 2018 in the absence of Hurricane Maria.

Estimated visitors and spending in the absence of Hurricane Maria, CY 2017 & CY 2018



Source: Tourism Economics

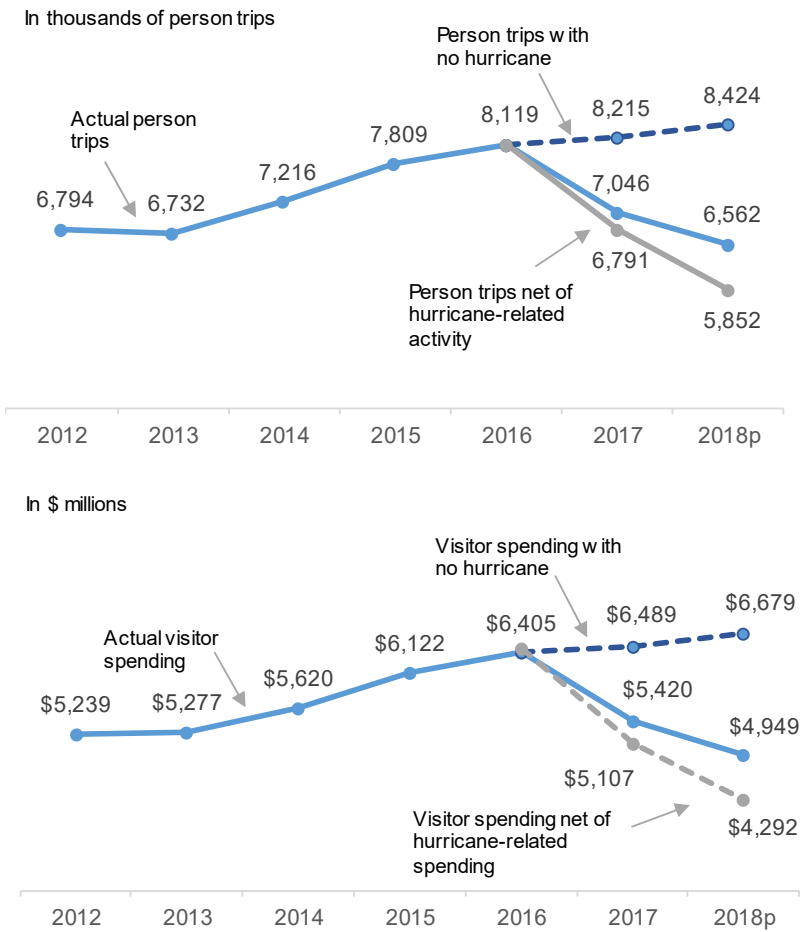
Note: "p" indicates preliminary figures

Hurricane Maria: Summary impacts

The accompanying charts summarize the following scenarios for visitors and visitor spending:

- Actual visits and visitor spending with Hurricane Maria;
- Visits and visitor spending with Hurricane Maria net of relief activity; and
- Visits and visitor spending in the absence of Hurricane Maria.

**Estimated visits and visitor spending impacts attributable to Hurricane Maria (000s of person trips and \$ millions)
CY 2012 – CY 2018**



Source: Tourism Economics

Note: "p" indicates preliminary figures

4. Methods and data sources

Research methods and data sources

This analysis relied on data from public sources and various government organizations in Puerto Rico. A selection of data sets referenced in estimating direct visitor spending is provided below:

- Puerto Rico Tourism Company: Summary of Hotel Registrations by Residence
- Puerto Rico Planning Board: Visitor Profile (2013 & 2017), Number and Expenditures of Visitors in Puerto Rico, FY 2007-CY 2017(p), Number of Employed Persons by Major Industrial Sector, 2008-2017(p), Government Revenues, 2008-2016
- Puerto Rico Tourism Company: Traditional Lodging Guest Registrations (Non-resident & Resident), Occ, LOS, and ADR Report, 2015 – Q1 2019
- Puerto Rico Ports Authority: Movement of passengers at airports, Movement of passengers on cruise ships, 2012-2018
- Puerto Rico Finance Department: State Sales and Use Tax
- Bureau of Labor Statistics: QCEW employment data, 2010-2017
- STR data on hotel supply, demand, and revenues, 2012-2018
- Lodging tax receipts, 2012-2018
- World Travel & Tourism Council (WTTC) “Travel & Tourism Economic Impact 2017: Puerto Rico”

An IMPLAN model was compiled for Puerto Rico. This traces the flow of visitor-related expenditures through the local economy and their effects on employment, wages, and taxes. IMPLAN also quantifies the indirect (supplier) and induced (income) impacts of tourism. Tourism Economics then cross-checks these findings with employment and wage data for each sector to ensure the findings are within reasonable ranges.



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For more information:

Adam Sacks, President

adam@tourismeconomics.com

info@tourismeconomics.com