



FLORIDA SEAPORTS
CHARTING OUR FUTURE

2012

STATEWIDE
ECONOMIC IMPACT OF
FLORIDA SEAPORTS



Florida Seaport Transportation and
Economic Development Council

www.flaports.org

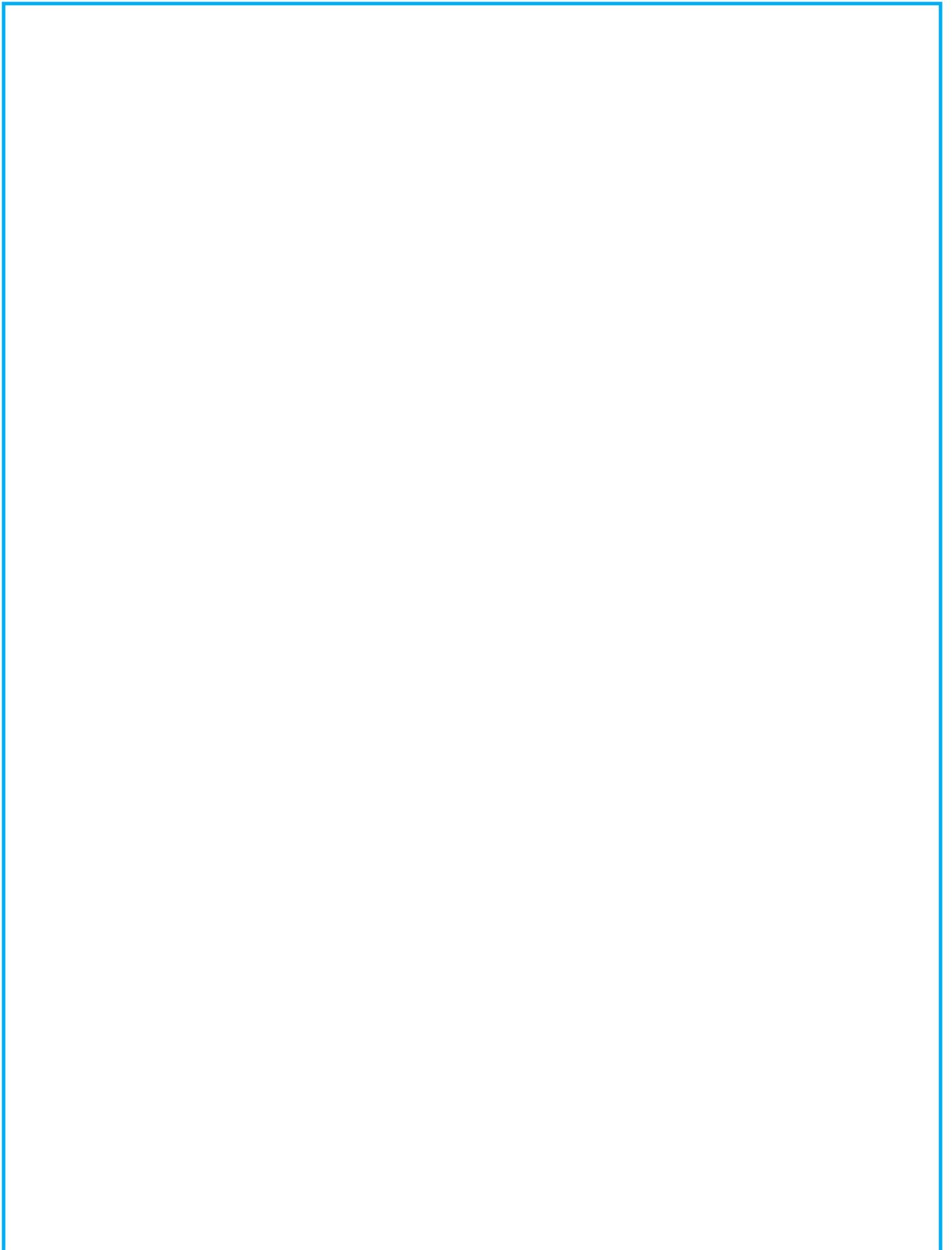


TABLE OF CONTENTS

SUMMARY OF ECONOMIC IMPACT ANALYSIS 3

CHAPTER I

THE ECONOMIC IMPACT OF FLORIDA'S SEAPORTS 4

IMPACT DEFINITIONS 4

METHODOLOGY 6

ECONOMIC IMPACT MODELS 7

SUMMARY OF RESULTS 8

CHAPTER II

ECONOMIC IMPACTS OF CARGO ACTIVITY 10

IMPACT STRUCTURE 12

COMMODITIES INCLUDED 14

CARGO EMPLOYMENT IMPACTS 15

TOTAL OUTPUT AND REVENUE IMPACTS 18

PERSONAL INCOME IMPACT 19

TAX IMPACT 20

CHAPTER III

ECONOMIC IMPACT OF CRUISE SERVICE 21

IMPACT STRUCTURE 21

IMPACT OF HOME PORT CALLS 22

CRUISE SERVICE IMPACT MODEL 24

ECONOMIC IMPACT OF CRUISE SERVICE 24

JOB AND PERSONAL INCOME IMPACTS 25

BUSINESS AND TAX REVENUES 25

Florida Ports Council

Florida Seaport Transportation and
Economic Development Council

502 East Jefferson Street
Tallahassee, Florida 32301
850.222.8028

www.flaports.org

Follow us on Twitter and Facebook:



FLORIDA
SEAPORTS
CHARTING OUR FUTURE

*Prepared March 2013
for the Florida Ports Council
by
Martin Associates
www.martinassoc.net*

SUMMARY OF STATEWIDE ECONOMIC IMPACT ANALYSIS

The Florida Seaport Transportation and Economic Development Council recently received the 2012 Statewide Economic Impact of Florida's Seaports. This study provides an assessment of the economic impacts of the cargo and cruise activity at Florida's public ports in terms of jobs, personal income, business revenue, and state and local taxes. In 2012, the cruise and cargo activity at Florida's public seaports supported nearly 600,000 total direct, induced, indirect and related user jobs within the state of Florida. The total value of the cargo and cruise activity to the state in 2012 was estimated at \$97 billion, and more than \$2.4 billion of state and local taxes was maintained at pre-recession levels.

It is important to note that prior to the recession beginning in 2008, the Florida seaports generated a total of 672,000 jobs, and \$2.4 billion in state and local taxes. The fact that the economy of Florida's seaport community was able to rebound from such a significant recession is due to the focused investment in port infrastructure and their aggressive marketing to secure cargo. Notably, this ability to re-generate the economic impacts of the public ports after the recession is in direct contrast to the lack of employment growth reflective of the U.S. economy in general over this same time period.

With the planned opening of the Panama Canal in 2015, and the country's focus on exports as demonstrated by the Administration's Export Initiative to stimulate the U.S. economy, Florida's public seaports are well positioned to continue to grow and demonstrate their economic importance to the state's economy. In order to attract any of the increased traffic expected from the expanded Panama Canal, as well as to participate in the growing export trade, particularly with the Americas and Asia, continued investment in port infrastructure will be critical. This includes deepening the channels of the state's container ports to handle the larger-sized container vessels deployed through the Suez Canal and the expanded Panama Canal, as well as maintaining the current authorized depth of the ports' channels. In addition, adequate access to inland regions will be key in growing the Florida's market share, which will require investment in rail and highway access.

The total value of cargo activity in the state of Florida in 2012 was estimated at \$90 billion, up from \$66 billion in 2008.

The 2012 Statewide Economic Impact of Florida's Seaports is based on detailed seaport economic impact models developed for the individual ports of Canaveral, Everglades, Jacksonville, Manatee, Miami, Palm Beach, Panama City, and Tampa. These models are based on a 100 percent interview program with tenants of each of the eight ports, as well as service providers to cargo and vessel activity at each port. In total, more than 2,500 firms that provide services to the cargo, vessel and cruise activity at these ports were interviewed. In addition, surveys of more than 3,000 cruise passengers and 1,800 crew members were conducted by Martin Associates at the Ports of Canaveral, Miami and Tampa. The data collected from the interviews were then used to develop a set of prototype regional models for the remaining ports for which no specific impact models were developed -- Fernandina, Fort Pierce, Key West, Pensacola, Port St. Joe, and St. Petersburg.

CHAPTER I

THE ECONOMIC IMPACT OF FLORIDA'S SEAPORTS

Introduction

Martin Associates was retained by the Florida Seaport Transportation and Economic Development Council to measure the statewide economic impacts generated by maritime activity, both cargo and cruise activity, at the public ports operating in the state of Florida. Economic impacts generated at the cargo facilities include the impacts generated by containerized cargo (both dry and reefer), petroleum, steel products, forest products, autos and RO/RO cargo, miscellaneous break-bulk cargo, dry bulk cargo (such as aggregates, phosphate, minerals, etc), petroleum and petroleum products, and other liquid bulk. In addition to the economic impacts generated by the cargo activity at the seaport terminals, Martin Associates has also quantified the economic impacts of the cruise industry at these ports.

This study focuses on impacts generated in the year 2012. Impacts are estimated in terms of jobs, personal income, business revenue, and state and local taxes. In addition to the baseline impact estimates, computer models specific to each port region and size of port have been prepared that can be used in evaluating specific investment projects, as well as the sensitivity of impacts to changes in tonnage, labor productivity, labor work rules, commodity mix, inland origins/destinations of commodities and vessel size.

The study employs methodology and definitions that have been used by Martin Associates to measure the economic impacts of seaport activity in more than 500 economic impact studies for ports in the United States and Canada, and at the leading airports in the United States. It is to be emphasized that only measurable impacts are included in this study. In order to ensure defensibility, the Martin Associates' approach to economic impact analysis is based on data developed through an extensive interview and telephone survey program of more than 2,200 firms providing services to the ports, as well as tenants of the ports. In addition, 3,000 cruise passengers and 1,800 crew members on board the cruise ships were surveyed prior to embarkation at the ports of Canaveral, Miami and Tampa.

Impact Definitions

The impacts are measured separately for the ports' cargo activity and cruise activity. The impacts are measured in terms of (as described below):

- Jobs [direct, induced, indirect and related shipper/consignee (related users)];
- Personal income;
- Business revenue; and
- State and local taxes.

Direct, Induced and Indirect jobs

Direct jobs are those that would not exist if activity at the port's cargo and cruise facilities were to cease. Direct jobs created by maritime cargo activity at the port's terminals are those jobs with the firms directly providing cargo handling and vessel services, including trucking companies, terminal operators and stevedores, members of the International Longshoremen's Association (ILA), stevedores and customhouse brokers, vessel agents, pilots and tug assist companies. Direct employees created by the cruise operations include the jobs with the firms providing the direct vessel services –chandlers, pilots, longshoremen, line handlers, local advertising firms, caterers, liquor wholesalers, linen companies, security firms, waste disposal firms, parking, local transportation -- as well as the firms providing services to the passengers on the vessels -- hotels, taxi cabs, restaurants and tour packages. Also included are impacts generated at the individual airport due to the cruise passengers arriving via air.

Induced jobs are jobs created in the state by the purchases of goods and services by those individuals directly employed by each of the lines of business at each port. These jobs are based on the in-state purchase patterns of Florida area residents. The induced jobs are jobs with grocery stores, restaurants, health care providers, retail stores, local housing/construction industry, and transportation services, as well as with wholesalers providing the goods to the retailers.

Indirect jobs are created throughout the state as the result of purchases for goods and services by the firms directly impacted by the port activity, including the tenants, terminal operators and the firms providing services to cargo – which includes containerized cargo, petroleum, general cargo, RO/RO and dry and liquid bulks and cruise passenger operations. The indirect jobs are measured based on in-state purchase patterns of the directly dependent firms, and occur with such industries as utilities, office supplies, contract service providers, maintenance and repair, and construction.

Related shipper/consignee (related user) jobs are jobs with shippers and consignees (exporters and importers) using the seaport terminals for shipment and receipt of cargo. The majority of the in-state shippers and consignees impacts involve the import and export of ocean containerized cargo.

Other impacts

Personal income impact consists of wages and salaries received by those directly employed by port activity, and includes a re-spending impact, which measures the personal consumption activity in the state by those directly employed as the result of cargo and cruise activity at the public ports. Indirect personal income measures the wages and salaries received by those indirectly employed.

Business revenue consists of total business receipts by firms providing services in support of the ocean cargo and cruise activity. In-state purchases for goods and services made by the directly impacted firms are also measured. These purchases by the dependent firms create the indirect impacts.

State and local taxes include taxes paid by individuals as well as firms dependent upon the cargo and cruise activity at the public ports.

Methodology

Within the past year, Martin Associates has developed detailed economic impact models for the following Florida ports: Canaveral, Everglades, Jacksonville, Manatee, Miami, Palm Beach, Panama City, and Tampa.

These models are based on a 100 percent interview program with tenants of each of the four ports as well as service providers to cargo and vessel activity at each port. In total, more than 2,200 firms that provide services to the cargo, vessel and cruise activity at these ports were interviewed. In addition surveys of more than 3,000 cruise passengers and 1,800 crew members were conducted by Martin Associates at the ports of Canaveral, Miami and Tampa. The data collected from the interviews were then used to develop a set of prototype regional models for the ports for which no specific impact models were developed. – Everglades, Fernandina, Fort Pierce, Pensacola, Port St. Joe, and St. Petersburg.

In addition, cruise impact models developed for the ports of Canaveral, Everglades, Jacksonville, Miami, Palm Beach, and Tampa were modified to develop prototype models to estimate cruise activity at Key West. Cargo data provided by each port for containers, steel, forest products, auto, other break-bulk, dry bulk, petroleum, and other liquid bulk cargo were then used as inputs into the prototype models to estimate the economic impacts for the ports for which Martin Associates has not developed specific impact studies. Similarly, cruise passenger data for Key West was entered into the cruise prototype model to estimate the impacts of cruise operations at Key West.

The induced impacts are based on the current expenditure profile of residents in the State of Florida, as estimated by the U.S. Bureau of Labor Statistics, “Consumer Expenditure Survey”. This survey indicates the distribution of consumer expenditures over key consumption categories for residents of the communities in which the ports are located.

The consumption categories are:

- Housing;
- Food at Restaurants;
- Food at Home;
- Entertainment;
- Health Care;
- Home Furnishings; and
- Transportation Equipment and Services.

The estimated consumption expenditure generated as a result of the re-spending impact is distributed across these consumption categories. Associated with each consumption category is the relevant retail and wholesale industry. Jobs to sales ratios in each industry are then computed for the regions in which each port is located, and induced jobs are estimated for the relevant consumption categories. It is to be

emphasized that induced jobs are only estimated at the retail and wholesale level, since these jobs are most likely generated in the state. Further levels of induced jobs are not estimated since it is not possible to defensibly identify geographically where the subsequent rounds of purchasing occur.

The “Consumer Expenditure Survey” does not include information to estimate the job impact with supporting business services, legal, social services, state and local governments, and educational services. To estimate this induced impact, a ratio of State of Florida employment in these key service industries to total State of Florida employment is developed. This ratio is then used with the direct and induced consumption jobs to estimate induced jobs with business/financial services, legal, educational, governmental and other social services.

The indirect impacts are estimated based on the local purchases by the directly dependent firms, combined with indirect jobs, income and revenue coefficients for the supplying industries in the state of Florida as developed for Martin Associates by the U.S. Bureau of Economic Analysis, Regional Input/Output Modeling System.

Economic Impact Models

The impacts are measured for 2012, and computer models for both cargo and cruise operations have been developed to provide an estimate of the impacts of specific investment and development projects, and to test the sensitivity of the impacts to changes in economic conditions and facility utilization. It is to be emphasized that this study is designed to provide a framework for which the Florida Seaport Transportation and Economic Development Council can use in formulating and guiding the future development of port facilities within the state of Florida.

Maritime Cargo Sensitivity

The cargo impact model is designed to test the sensitivity of impacts to changes in such factors as maritime tonnage levels, seaport productivity and work rules, new seaport facilities development, inland distribution patterns of ocean cargo, number of vessel calls and the introduction of new ocean carrier service. The cargo impact model can also be used to assess the impact of developing a parcel of land as a maritime terminal versus other non-cargo land uses. Finally, the maritime cargo impact model can be used to assess the economic benefits of increased maritime activity due to infrastructure development and the opportunity cost of not undertaking specific maritime investments such as dredging, new terminal development or warehouse development

Cruise Activity

The cruise service impact model provides a tool by which the Florida Seaport Transportation and Economic Development Council can evaluate changes in the types of cruises being offered, the size of vessels deployed, the number of passengers per cruise, the share of passengers staying overnight in hotels prior to or after the cruise, and the number of one day, overnight and multi-day (conventional) cruises. The cruise model can also be used to quantify the potential impact of new services, by size of vessel and type of cruise.

Finally, the cruise impact model, along with the maritime cargo model, can be used to evaluate the economic

impact of a maritime terminal for use as a cruise terminal versus a cargo terminal

Summary of Results

Exhibit I-1 provides a breakdown by cargo and cruise results for the economic impact analysis of the state of Florida.

EXHIBIT I-1: ECONOMIC IMPACT OF CARGO AND CRUISE ACTIVITY ON THE STATE OF FLORIDA 2012*

	CARGO GENERATED	CRUISE GENERATED	TOTAL
JOBS			
DIRECT	37,771	20,032	57,803
INDUCED	35,752	11,809	47,561
INDIRECT	21,800	9,329	31,129
TOTAL PORT SECTOR JOBS	95,323	41,169	136,492
RELATED USER JOBS	<u>455,926</u>	NA	<u>455,926</u>
TOTAL JOBS	551,249	41,169	592,419
PERSONAL INCOME (THOUSANDS)			
DIRECT	\$1,693,145	\$657,783	\$2,350,928
INDUCED/LOCAL CONSUMPTION	\$3,983,057	\$1,280,956	\$5,264,014
INDIRECT	<u>\$1,037,541</u>	<u>\$308,199</u>	<u>\$1,345,739</u>
TOTAL PORT SECTOR INCOME (THOUSANDS)	\$6,713,743	\$2,246,938	\$8,960,681
RELATED USER INCOME	<u>\$17,165,293</u>	NA	<u>\$17,165,293</u>
TOTAL PERSONAL INCOME (THOUSANDS)	\$23,879,036	\$2,246,938	\$26,125,974
TOTAL OUTPUT (THOUSANDS)			
DIRECT PORT SECTOR REVENUE	\$5,758,739	\$6,311,739	\$12,070,478
RELATED USER OUTPUT	<u>\$84,556,242</u>	NA	<u>\$84,556,242</u>
TOTAL OUTPUT (THOUSANDS)	\$90,314,981	\$6,311,739	\$96,626,720
TOTAL PORT SECTOR LOCAL PURCHASES (THOUSANDS)	\$2,026,756	\$458,298	\$2,485,054
STATE AND LOCAL TAXES (THOUSANDS)			
DIRECT, INDUCED AND INDIRECT TAXES	\$620,476	\$207,478	\$827,954
TOTAL PORT SECTOR STATE AND LOCAL TAXES (THOUSANDS)	\$620,476	\$207,478	\$827,954
RELATED USER STATE AND LOCAL TAXES	<u>\$1,588,253</u>	NA	<u>\$1,588,253</u>
TOTAL STATE AND LOCAL TAXES (THOUSANDS)	\$2,208,729	\$207,478	\$2,416,207

In 2012, the marine cargo and cruise activity at the public Florida seaports supported 592,419 total jobs in the state of Florida. Of these jobs, 57,803 jobs are directly created, while another 47,561 induced jobs are generated in the State as the result of local purchases by those directly employed by marine cargo and cruise activity. In addition, there are 31,129 indirect jobs supported in the state as the result of \$2.5 billion of local purchases. In addition, the cargo moving via public ports in Florida supports 455,926 jobs throughout the state. The majority of these jobs are associated with the movement of containerized cargo at the public ports.

The 57,803 direct jobs received \$2.4 billion of direct wage and salary income. As the result of local purchases with this \$2.4 billion of direct wages and salaries, an additional \$5.3 billion of income and local consumption expenditures were created in the state. It is this re-spending impact that supported the 47,561 induced jobs. The indirect jobs holders received nearly \$1.4 billion of wages and salaries. In total, \$26.1 billion of personal income was created as the result of public port operations in Florida, including the nearly \$17.2 billion received by those employed with the related users of the port.

State businesses received \$12.1 billion of sales revenue from providing services to the cargo and cruise activity. This does not include the value of the cargo moving via the ports. The cargo activity at the ports created an additional \$84.6 billion of economic output in the state, the majority of which is created in the state's retail and wholesale and distribution industries and the in-state industries supporting the movement and distribution of containerized cargo imports and exports. It is to be emphasized that only the economic activity associated with the raw materials and finished products that move via the state's public ports is included.

As a result of the cargo and cruise activity at the public ports, a total of \$2.4 billion of state and local tax revenue was generated.

The balance of the report describes the impacts created by maritime cargo and cruise service at the public ports operating within the state of Florida.

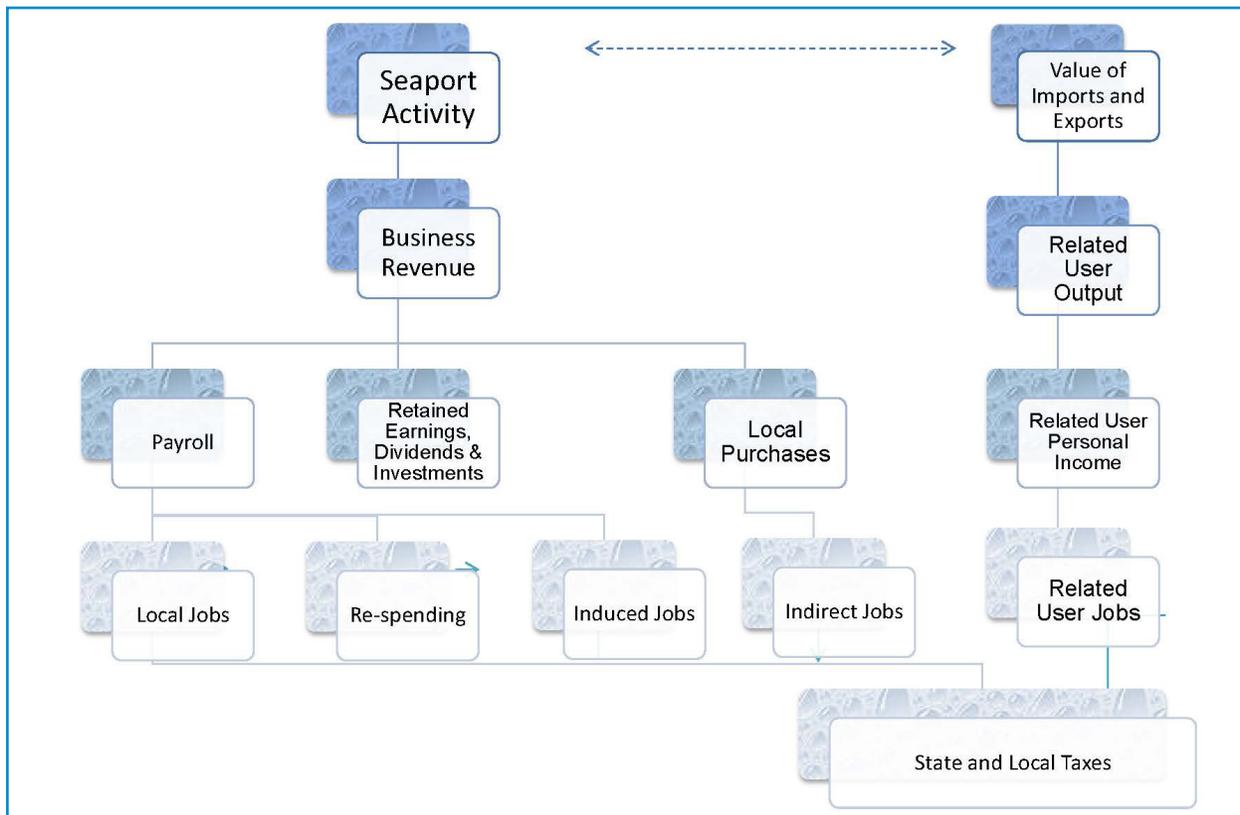
CHAPTER II

ECONOMIC IMPACTS OF MARITIME CARGO ACTIVITY

Introduction

Waterborne cargo activity at a seaport contributes to the local and regional economy by generating business revenue to local and national firms providing vessel and cargo handling services at the seaport terminals. These firms, in turn, provide employment and income to individuals, and pay taxes to state and local governments. Exhibit II-1 shows how activity at seaport terminals generates impacts throughout the local, state and national economies. As this exhibit indicates, the impact of a seaport on a local, state or national economy cannot be reduced to a single number, but instead, the seaport activity creates several impacts. These are the revenue impact, employment impact, personal income impact, and tax impact. These impacts are non additive. For example, the income impact is a part of the revenue impact, and adding these impacts together would result in double counting. Exhibit II-1 shows graphically how activity at public port marine terminals generates the four impacts.

EXHIBIT II-1: FLOW OF ECONOMIC IMPACTS GENERATED BY MARITIME ACTIVITY



At the outset, activity at the port generates business revenue for firms which provide services. This business revenue impact is dispersed throughout the economy in several ways. It is used to hire people to provide the services, to purchase goods and services, and to make federal, state and local tax payments. The remainder is used to pay stock holders, retire debt, make investments, or is held as retained earnings. It is to be emphasized that the only portions of the revenue impact that can be definitely identified as remaining in the local economy are those portions paid out in salaries to local employees, for local purchases by individuals and businesses directly dependent on the seaport, in contributions to state and local taxes, in lease payments to the public port agencies by tenants, and wharfage and dockage fees paid to the public port authorities.

The employment impact of seaport activity consists of four levels of job impacts:

Direct employment impact - jobs directly generated by seaport activity. Direct jobs generated by ocean cargo include jobs with railroads and trucking companies moving cargo between inland origins and destinations and the seaport terminals, longshoremen and dockworkers, steamship agents, freight forwarders, stevedores, etc. It is to be emphasized that these are classified as directly generated in the sense that these jobs would experience near term dislocation if the activity at ports' maritime terminals were to be discontinued.

Induced employment impact - jobs created throughout the state economy because individuals directly employed due to seaport activity spend their wages locally on goods and services such as food, housing and clothing. These jobs are held by residents located throughout the state, since they are estimated based on local and regional purchases at each port.

Indirect Jobs - jobs created locally due to purchases of goods and services by firms, not individuals. These jobs are estimated directly from local purchases data supplied to Martin Associates by the companies interviewed as part of the studies for Port Everglades, Jacksonville, Tampa and Palm Beach, and expanded to cover all ports in Florida. These jobs include jobs with local office supply firms, maintenance and repair firms, parts and equipment suppliers, etc.

Related shipper/consignee (related user) jobs - jobs with shippers and consignees (exporters and importers) using the seaport terminals for shipment and receipt of cargo.

The *personal income impact* is the measure of employee wages and salaries (excluding benefits) received by individuals directly employed due to seaport activity. Re-spending of this income throughout the state economy for purchases of goods and services is also estimated. This, in turn, generates additional jobs the induced employment impact. This re-spending throughout the state is estimated using a regional personal earnings multiplier, which reflects the percentage of purchases by individuals that are made within the state of Florida. The re-spending effect varies by region -- a larger re-spending effect occurs in states that produce a relatively large proportion of the goods and services consumed by residents, while lower re-spending effects are associated with states that import a relatively large share of consumer goods and

services (since personal income “leaks out” of the region for these out of regional purchases).

Tax impacts are payments to the state and local governments by firms and by individuals whose jobs are directly dependent upon and supported (induced jobs) by activity at the seaport terminals.

Impact Structure

Economic impacts are created throughout various business sectors of the state and local economies. Specifically, four distinct economic sectors are impacted as a result of activity at the seaport terminals, as listed below:

- Surface Transportation Sector;
- Maritime Services Sector;
- Related Shippers/Consignees Sector; and
- Port Authority/Port Department of the County.

Within each sector, various participants are involved. Separate impacts are estimated for each of the participants. A discussion of each of the economic impact sectors is provided below, including a description of the major participants in each sector.

The Surface Transportation Sector

The surface transportation sector consists of both the railroad and trucking industries. The railroads and trucking firms are responsible for moving the various cargoes between the seaport terminals and the inland origins and destinations. Also included is the pipeline transportation of petroleum products received at a port.

The Maritime Services Sector

This sector consists of numerous firms and participants performing functions related to the following maritime services: A brief description of the major participants in each of these four categories is provided below:

- Maritime Cargo Transportation;
- Vessel Operations;
- Cargo Handling; and
- Federal, State and Local Government Agencies.

Maritime Cargo Transportation

Participants in this category are involved in arranging for inland and water transportation for export or import freight. The freight forwarder/customhouse broker is the major participant in this category. The freight forwarder/customhouse broker arranges for the freight to be delivered between the terminals and inland destinations, as well as the ocean transportation. This function performed by freight forwarders and customhouse brokers is most prevalent for containerized and general cargo commodities.

Vessel Operations

This category consists of several participants. The steamship agents provide a number of services for the vessel as soon as it enters the port; the agents arrange for pilot services and towing, for medical and dental care of the crew, for ship supplies as well as payment of various expenses including port charges. The agents are also responsible for vessel documentation. In addition to the steamship agents arranging for vessel services, those providing the services include:

- *Chandlers* - supply the vessels with ship supplies (food, clothing, nautical equipment, etc.);
- *Towing firms* - provide the tug service to guide the vessel to and from port;
- *Pilots* - assist in navigating the vessels to and from each port's maritime terminals;
- *Bunkering firms* - provide fuel to the vessels;
- *Marine surveyors* - inspect the vessels and the cargo; and
- *Shipyards/marine construction firms* - provide repairs (either emergency or scheduled) as well as marine pier construction and dredging.

Cargo Handling

This category involves the physical handling of the cargo at the terminals between the land and the vessel. Included in this category are the following participants:

- *Longshoremen & dockworkers* - include members of the International Longshoremen's Association (ILA), as well as non-ILA dockworkers (e.g. Teamsters Union) that are involved in the loading and unloading of cargo from the vessels, as well as handling the cargo prior to loading and after unloading;
- *Stevedoring firms* - manage the longshoremen and cargo handling activities. Stevedoring services at each port are most often provided by private stevedoring companies;
- *Cargo terminal operators* - are stevedoring firms who operate the maritime terminals, track cargo movement and provide security where cargo is loaded and off-loaded, as well as the petroleum terminal and pipeline operators which includes petroleum tank farm operations;
- *Warehouse operators* - store cargo after discharge or prior to loading and consolidate cargo units into shipment lots. In many cases the freight forwarders and consolidators are also involved in warehousing activity.
- *FTZ Operators* - operate facilities in the some of the public ports that have Foreign Trade Zones.

Federal, State and Local Government Agencies

This service sector involves federal, state and local government agencies that perform services related to cargo handling and vessel operations at each of the public ports, including the U.S. Departments of Homeland Security, [which includes Customs and Border Protection, U.S. Immigration and Customs Enforcement and U.S. Coast Guard], Labor, Agriculture and the Army Corps of Engineers.

Related Shipper/Consignees of Florida Public Ports

Related jobs consist of jobs with related shippers/consignees shipping and receiving cargo through the public cargo terminals at each of the state ports. The majority of these users are attributed to containerized

cargo through the ports. Only the user industry activity that can be linked to the movement of cargo (either raw materials or finished products) through the public ports is considered in this related user impact.

Public Port Authority

The Port Authority sector includes those individuals who are employees of the individual port authorities whose purpose is to oversee activity at the port's cargo and cruise terminals. The port authorities (which are in some cases parts of the counties such as Miami-Dade and Broward counties) provide basic infrastructure, establish usage rules and tariff rates, market the seaport facilities, and negotiate long-term agreements and leases with tenants.

Commodities Included

A major use of an economic impact analysis is to provide a tool for port development planning. As a port grows, available land and other resources for port facilities become scarce, and decisions must be made as to how to develop the land and utilize the resources in the most efficient manner. Various types of facility configurations are associated with different commodities. For example, containers, automobiles and RO/RO require a large amount of paved, open storage space, while certain types of break bulk cargoes such as steel coil, pulp, paper and plywood require covered storage. Perishable commodities require temperature controlled warehouses and some dry bulk cargo requires covered storage and special dust removing equipment, while tank farms are needed to store liquid bulk cargo.

An understanding of the commodity's relative economic value in terms of employment and income to the local community, the cost of providing the facilities, and the relative demand for the different commodities is essential in making future port development plans.

Because of this need for understanding relative commodity impacts, economic impacts are estimated for the following commodities handled at the public cargo terminals within the state:

- Containers (dry and refrigerated);
- Steel Products;
- Forest Products Such as Paper, Pulp, Lumber/Plywood;
- Automobiles and RO/RO cargo;
- Dry Bulk;
- Petroleum and Other Liquid Bulk.

It should be emphasized that commodity specific impacts are not estimated for each of the economic sectors described in the last section. Specific impacts could not be allocated by individual commodities with any degree of accuracy for maritime construction, ship repair, or the state and Federal government due to the fact that it is difficult to estimate the percentage of resources that are dedicated to one commodity over another. For example, maritime construction may occur at a terminal that is multi-use and cannot be attributed to a specific commodity. Similarly, law enforcement and security operations cannot be attributed to a single commodity.

Cargo Employment Impacts

The employment generated by maritime cargo activity at the public ports within the state is estimated as follows:

- First, the total employment that is in some way related to the activities at cargo terminals is estimated;
- Second, the subset of total employment that is judged to be totally dependent (i.e., direct jobs) on port activity is analyzed as follows:
- The direct job impact is estimated by detailed job category, i.e., trucking, ILA/dockworkers, freight forwarders/customhouse brokers/warehouse and consolidators, steamship agents, chandlers, surveyors, etc;
- The direct job impact is estimated for each of the key commodities/commodity groups;
- Induced and indirect jobs are estimated;
- Finally, jobs related to the maritime activity at the cargo terminals are described.

It is estimated that **551,249 jobs are directly or indirectly generated by port activities** at the public marine cargo terminals within state of Florida. Of the **551,249 jobs**:

- *37,771 jobs are directly generated* by activities at the cargo terminals and if such activities should cease, these jobs would be discontinued over the short term.
- *35,752 jobs (induced jobs) are supported by the local purchases* of the 37,771 individuals directly generated by port activity at the cargo terminals. An additional 21,800 indirect jobs were supported by \$2.0 billion of purchases in the state's economy by firms providing direct cargo handling and vessel services.
- *455,926 jobs are related to cargo exported and imported* via the cargo terminals. These jobs are with related shippers/consignees using the public marine cargo terminals, and are mostly concentrated with jobs in the movement of containerized cargo through public port terminals.

Direct Maritime Cargo Job Impacts

In 2012, about 98.2 million tons of waterborne cargo moved via the public ports facilities in the state of Florida, including those facilities leased by private terminal operators from the public port authorities. As a result of this activity, 37,771 full time jobs were directly created . In this section the jobs are analyzed in terms of: distribution by job category; and distribution by commodity group, as developed in more detail below.

Direct Maritime Cargo Job Impacts - By Job Category

Exhibit II-2 presents the distribution of the 37,771 direct jobs by type of job. The exhibit indicates that the majority of direct jobs are with trucking jobs moving cargo to and from the terminals, followed by directly dependent jobs with terminal operators. The next largest impact is with shippers/consignees (including employees of the phosphate mines supporting the export of fertilizer via the Port of Tampa), followed by the ILA and dockworkers.

**EXHIBIT II-2: CARGO EMPLOYMENT IMPACTS BY SECTOR
AND JOB CATEGORY**

IMPACT CATEGORY	DIRECT JOBS
<i>Surface Transportation</i>	
Rail	995
Truck	9,892
<i>Maritime Services</i>	
Terminal	6,332
ILA	2,163
Towing	343
Pilots	153
Agents	583
Maritime Services	2,538
Freight Forwarders	1,289
Warehouse	2,173
Government	1,312
Maritime Construction	2,608
Barge Operations	1,496
<i>Dependent Shippers/Tenants/FTZ Operations</i>	4,686
<i>Port Authorities</i>	<u>1,207</u>
Total	37,771

Direct Maritime Cargo Job Impacts - By Commodity

Most of the 37,771 jobs considered to be generated by port activity can be associated with the handling of specific commodities or commodity groups. Certain employment categories such as government employees and employees with maritime construction and ship repair cannot be identified with a specific commodity. As a result, employment in these groups (which totaled 7,751) was not allocated to commodity groups.

**EXHIBIT II-3: DISTRIBUTION OF DIRECT CARGO JOB IMPACTS
BY COMMODITY**

COMMODITY	DIRECT JOBS
CONTAINERS	11,191
FOREST PRODUCTS	972
STEEL	639
OTHER BREAK BULK	612
AUTOS/RO-RO	1,295
DRY BULK	9,675
LIQUID BULK	1,067
PETROLEUM	4,570
NOT ALLOCATED	<u>7,751</u>
TOTAL	37,771

The movement of containerized cargo creates the largest number of direct jobs, followed by the movement of dry bulk cargoes, reflecting the movement of phosphate and fertilizer (as well as the mines associated with the phosphate), and by the movement and distribution of finished petroleum products.

Induced Maritime Cargo Job Impacts

The 37,771 directly employed individuals due to activity at the cargo terminals received wages and salaries, a part of which was used to purchase local goods and services such as food, housing, clothing, transportation services, etc. As a result of these local purchases, 35,752 jobs in the regional economy were supported. The majority of the induced jobs are with local and regional private sector social services, business services, educational services and state and local government agencies, followed by jobs in the food and restaurant sector, and jobs in the construction and home furnishings sector.

Indirect Maritime Cargo Job Impacts

In addition to the induced jobs generated by the purchases by directly employed individuals, the firms providing the direct services and employing the 37,771 direct jobs make local purchases for goods and services. These local purchases by the firms' dependent upon the cargo facilities generate additional local jobs -- indirect jobs. It is estimated that firms providing direct services to the marine cargo handled at the state's public ports made \$2.0 billion and in-state purchases in 2012. These direct local purchases created an additional 21,800 indirect jobs in the local economy.

Related User (Shipper/Consignee) Maritime Cargo Job Impacts

It is estimated that about 455,926 jobs are supported in Florida with shippers/consignees that use the public ports. It is important to emphasize that the user jobs are supported by the cargo moving only via the public ports in 2012, and do not include jobs supported by cargo moving via other out of state ports (i.e. Savannah or West Coast ports) that are consumed or produced by in-state shippers/consignees and manufacturers.

To estimate the related user impact for containerized cargo, the average value per ton of each containerized import and export was estimated using USATrade Online. The employment to value of output coefficient for the retail sector related to the exported and imported containerized cargoes was then computed from Bureau of Economic Analysis, Regional Input-Output Model for the State of Florida. To estimate the related containerized cargo jobs, the average value per ton of containerized cargo was multiplied by the tons handled at the ports. The job coefficient was next multiplied by the value of the containerized cargo moving via the ports to estimate the related jobs with exported and imported containerized cargo. The value of retail cargo was adjusted to reflect retail margins.

For break-bulk cargoes, the associated consuming and producing industries were identified with each commodity. For example, for imported iron and steel products, and lumber and plywood, relationships

were developed to convert the dollar value of these imported materials into a dollar value of output in the key consuming industries, which include construction and metal fabrication industries. Relationships between the values of inputs to the value of outputs in these industries were estimated using data from the U.S. Bureau of Census, Census of Manufacturing and Census of Construction. These ratios were then used to convert the dollar value of the imported break-bulk and bulk cargoes, including petroleum into a dollar value of output in the consuming industries in the state. Using the respective jobs to value of output multipliers for these industries from the Bureau of Economic Analysis, Regional Input-Output Modeling System (RIMSII) model, the value of the break-bulk and bulk cargoes (i.e., steel products, and lumber/plywood, petroleum) moving via the public ports and remaining in (or produced in) the state of Florida was converted into related shipper/consignee jobs with these users and associated supporting industries within the state.

Finally, the direct, induced and indirect port sector job impacts associated with each of the cargoes for which related shipper/consignee jobs was estimated were subtracted from the total related jobs (by commodity and cargo type) to avoid double counting, as the related shipper/consignee jobs include job impacts at each stage of handling the imported and exported cargo, such as the port activity and the trucking and rail activity to move the cargo to and from each port and the induced and indirect jobs associated with the direct port activity.

Total Economic Output and Business Revenue Impact

The *98.2 million tons of cargo* handled at the cargo terminals included in the study generated revenue for firms in each of the economic sectors. For example, revenue is received by the railroads, the trucking companies and pipelines within the surface transportation sector as a result of moving export cargo to the seaport terminals and distributing the imported commodities inland after receipt at the cargo terminals. The firms in the maritime services sector receive revenue from arranging for transportation services, cargo handling, providing services to vessels in port and repairs to vessels calling the port facilities.

The port authorities receive revenue from terminal leases and port charges such as wharfage and dockage assessed on cargo and vessels. In addition, revenue is received by shippers/consignees from the sales of cargo shipped or received via the seaport cargo terminals and from the sales of products made with raw materials received through the terminals. Since this chapter is concerned with the revenue generated from providing maritime services, the shipper/consignee revenue (i.e., the value of the cargo shipped or received through the seaport terminals, as well as the value of the products produced by the port-dependent shippers/consignees) will be excluded from the remaining discussion.

The revenue generated by port activity consists of many components. For example, gross revenue is used to pay employee salaries and taxes, it is distributed to stockholders of the companies providing the vessel and cargo handling services, and it is used for the purchases of equipment and maintenance services. Of these components, only three can be isolated geographically with any degree of accuracy. These are the personal income component of revenue, which can be traced to geographic locations based on the residence of

those receiving the income, the payment of state and local taxes, and the in-state purchases made by firms dependent upon the maritime activity.

The balance of the revenue is distributed in the form of payments to firms located outside the State of Florida area providing goods and services to the economic sectors and for the distribution of company profits to shareholders. Many of these firms and owners are located outside of the State of Florida and, thus, it is difficult to trace the ultimate location of the distributed revenue (other than personal income, taxes and local purchases). The value of output created by in-state related shippers/consignees of the ports is attributed to the state of Florida, and the local purchases from other firms within the State are also included in this user output measure, as defined by the in-state output coefficients (for the user industries) developed from the U.S. Bureau of Economic Analysis, Regional Input-Output Modeling System (RIMSII).

Output Impact

The output impact is a measure of the total economic activity in the state that is generated by the cargo moving via public ports. In 2012, maritime cargo activity at the ports generated a total of \$90.3 billion of total economic activity in the state. Of the \$90.3 billion, \$5.8 billion is the direct business revenue received by the firms directly dependent upon the public ports and providing maritime services and inland transportation services to the cargo handled at the maritime terminals and the vessels calling the public ports. The balance, \$84.6 billion, represents the value of the output to the state of Florida that is created due to the cargo moving via each of the public ports. This includes the value added at each stage of producing an export cargo, as well as the value added at each stage of production for the firms using imported raw materials and intermediate products that flow via the ports and are consumed by industries within the state of Florida.

Personal Income Impact

The income impact is estimated by multiplying the average annual earnings (excluding benefits) of each port participant, i.e., truckers, steamship agents, pilots, towing firm employees, longshoremen, warehousemen, etc., by the corresponding number of direct jobs in each category. The individual annual income in each category multiplied by the corresponding job impact resulted in \$1.7 billion in personal wage and salary earnings.

The impact of the re-spending of this direct income for local purchases is estimated using a personal earnings multiplier. The personal earnings multiplier is based on data supplied by the Bureau of Economic Analysis (BEA), Regional Input-Output Modeling System (RIMS II). The BEA estimates that for every one dollar earned by direct employees generated by activity at the cargo terminals, an additional \$2.35 of personal income and consumption expenditures would be created as a result of re-spending the income for purchases of goods and services produced locally. Hence, a personal earnings multiplier of 3.35 was used to estimate the incremental income and consumption impact of nearly \$4 billion. The total income, re-spending and consumption impact, inclusive of the re-spending effect is \$6.7 billion. This additional

re-spending of the direct income generates the 35,752 induced job impacts.

The 21,800 indirect job holders earned \$1 billion in indirect wages and salaries. The 455,926 related shipper/consignees of the cargo moving via the ports received about \$17.2 billion of personal income. Therefore, the total personal income impact and consumption impact created by ocean cargo activity is estimated at nearly at \$23.9 billion.

Tax Impact

State and local tax impacts are based on per employee tax burdens which are developed at the county, local and state jurisdictional levels. These tax per employee burdens are essentially tax indices that are used to allocate total taxes at each level of government to economic activity generated by the cargo terminals. To estimate the per employee tax indices, total taxes received at each governmental level in Florida was developed from the Tax Foundation, which reports total state and local taxes from all sources as a percent of total personal income.

Cargo activity generated \$620.5 million of state, county and local taxes. As a result of the economic activity created by the related shipper/consignees, an additional \$1.6 billion of state and local taxes were generated. The state of Florida receives approximately 48 percent of the tax revenues, while the local governments received 52 percent of the tax impact.

CHAPTER III

ECONOMIC IMPACTS OF CRUISE SERVICE IN FLORIDA

Introduction

In 2012, more than 7 million passengers embarked on cruises at Florida seaports. These passengers consist of passengers embarking on home port calls, in transit calls, as well as one day sails. The key difference between an in-transit call and a home port call is the fact that a vessel home porting will take on passengers and supplies at the ports, while a vessel making an intermediate in-transit call typically does not take on or discharge passengers, does take on supplies from local chandlers and caterers, nor uses local services such as advertising, maintenance and repair, linen services, etc. Hence, a call by a home ported vessel will generate a greater economic impact than an in-transit call. Also included in the passenger and vessel call counts are daily and overnight cruises to the Bahamas as well as daily gaming sails.

To measure the economic impact of the cruise service, Martin Associates developed cruise impact models for the ports of Canaveral, Everglades, Jacksonville, Miami, Palm Beach, and Tampa. These models include home port calls, in-transit calls as well as day cruises. The models can be used to test the sensitivity of the impacts to changes in the percent of passengers flying into the port city versus the percent of passengers driving to the port, the share of passengers staying in hotels prior to and after the cruise, the local expenditures by passengers while in hotels either before or after the cruise, and the local purchases by the cruise lines for food, liquor, and other supplies and services. The impact of changes in the mix of the size of vessels and the number of cruises by size of vessel and itinerary can also be evaluated using the model. These models were then used to develop a prototype model to be used to estimate the economic impacts of cruise operations at Key West, which has not been estimated using a port specific model.

In addition, as part of the individual cruise impact studies for the ports of Canaveral, Miami, and Tampa, Martin Associates conducted passenger surveys of more than 3,000 passengers embarking at these ports as well as 1,800 ships' crew. These passenger and crew member surveys were then used to develop the passenger profiles such as the share fly-in, the percent staying overnight, the length of stay pre- and post-cruise.

Impact Structure

Cruise service related to the home porting of a vessel contributes to the local and regional economies by providing employment and income to individuals, tax revenues to local and state governments, and revenue to businesses engaged in providing operational services and supplies to the vessels and passengers.

The flow of cruise industry-generated economic impacts throughout an economy creates four separate and non additive types of impacts.

These four types of impacts are:

Employment Impact - represents the number of full-time equivalent jobs generated by cruise activity at the Florida ports. This consists of jobs directly generated by the home porting of cruise vessels as well as induced jobs, or jobs created in the state due to the purchase of goods and services by those individuals directly dependent upon cruise activity.

Income Impact - the level of income associated with the jobs created by cruise activity, and adjusted to reflect re-spending throughout the state's economy.

Revenue Impact - the sales generated by firms engaged in supplying services and materials to the vessels while in port, as well as firms in the state visitor industry that supply services to cruise passengers staying in hotels before and after the cruise. The value of the cruise tickets is not included as a revenue impact except for those cruise services based in a specific port that provides the daily/non-conventional cruises.

Tax Impact - includes the state and local tax revenues generated by cruise activity. These are taxes paid by individuals directly dependent upon the cruise activity.

Impact of Home Port Calls

Home port activity at a port affects two sectors of the local and regional economy: the Maritime Service Sector; and the Visitor Industry Sector. Separate impacts are estimated for each of the various economic categories supplying goods and services to the cruise ships and passengers. A discussion of each of the impact categories is provided below.

The typical expenditure profile of a cruise line, while in port, provides an understanding of the types of firms involved in providing goods and services to the vessel and its passengers. These expenditure categories are:

- *Food and Beverage* - This category includes wholesale food and liquor distributors. It is to be emphasized that in some cases the non-perishable food brought on board for a cruise is not necessarily purchased locally, but based on contractual relationships and is from out of the area. Similarly, in some cases, liquor is purchased from in-bound warehouses, and not from local distributors. Interviews with the cruise operators identified the amount spent locally.
- *Logo Items* - These items are typically purchased under contract and are trucked into the port of embarkation. Therefore, no local impact is estimated.
- *Flowers* - Local wholesale flower distributors supply flowers for each cruise.
- *Public Relations and Advertising* - Contracts are usually developed with local advertising firms to promote the cruise. This is especially the case for the local cruises providing daily cruise services.
- *Parking* - Local parking management companies provide parking services for the passengers.
- *Taxis/buses* - Local taxis and buses provide transportation between the airport and the ship

or between the hotel and the ship for air/sea passengers.

- *Security* - These services are hired while the ship is in port.
- *Linen services* - Contracts are developed with local laundries for linen and laundry services.
- *Pilots* - State licensed and locally based operators guide the cruise ships into the terminal.
- *Tugs* - Tug services are required for certain cruise ships to assist in docking and undocking. However, most cruise vessels require minimal, if any, tug assists.
- *Stevedoring* - Required in loading and unloading baggage and ship stores.
- *Linehandling* - Securing and un-securing the vessel to the dock.
- *Local and Regional Travel Agencies* - Local travel agencies will receive a commission from ticket sales to area residents.
- *Waste Disposal* - Solid waste and other refuse that cannot be discharged at sea will be disposed by local refuse collectors.
- *Bunkers* - Fuel will be purchased from local bunkering companies.
- *Water* - Most cruise ships manufacture water at sea, but will still purchase some water locally prior to departure.

In addition to the impacts generated by direct vessel purchases, a percentage of the multi-day cruise passengers stay in hotels either before or after the cruise, which is part of the *Visitor Industry* expenditure category. They typically purchase retail items before or after the cruise, and eat in local hotel restaurants. Also, these passengers take cabs/buses from the airport to the hotel or ship, as well as taxis between the hotel and the ship and in the city. In addition to passengers impacting the local visitor industry, the ship's crew will also impact the industry. For example, the crew will likely purchase personal incidentals while in port. Also, a portion of the crew could be rotated on each sailing. The new crew may stay in a hotel upon arrival, while the departing crew may stay in a hotel prior to leaving the area. The crews of the daily sails are treated as based in the port city. The data collected from the passenger surveys and crew surveys were used to calibrate the cruise impact models, by length of cruise and size of ship.

In addition, the passengers arriving via the airports serving the ports also generate impacts on site at the airport, including jobs with airlines (ticket agents, baggage, concessions, taxis, security, etc.). To estimate the impact on the airport, Martin Associates used average impact ratios developed from our airport impact study conducted for Miami International Airport.

The economic impact analysis of cruise service at the ports of Canaveral, Everglades, Jacksonville, Miami, Palm Beach, and Tampa are based on telephone surveys of cruise lines calling these ports. The interviews of the cruise lines focused on typical expenditure profiles of a vessel while in port as well as the percent of crew that are rotated on/off during each sailing. Incidental expenses by crew while in port were also estimated from the interviews as well as in-house data. The percent of passengers that are air/sea versus

drive-in, the percent of visitor versus local passengers, and the share of passengers spending a pre/post night in the port city were developed from the more than 3,000 passenger surveys and 1,800 crew surveys conducted by Martin Associates at Canaveral, Miami and Tampa.

The induced impacts are based on the current expenditure profile of residents in each port area, as estimated by the U.S. Bureau of Labor Statistics, “Consumer Expenditure Survey”. The indirect impacts are estimated based on the local purchases by the directly dependent firms, combined with indirect jobs, income and revenue coefficients for the supplying industries in the state of Florida as developed for Martin Associates by the U.S. Bureau of Economic Analysis, Regional Input/Output Modeling System.

Cruise Service Impact Model

In order to assess the economic impacts of potential cruise business at the public ports in Florida, Martin Associates developed a spreadsheet framework that can be used to assess the impacts of changes in such factors as:

- Number of cruise vessel calls;
- Number of passengers;
- Passenger characteristics:
 1. Local expenditures;
 2. Local residents versus tourists;
 3. Length of pre/post night stay in the area in which the port is located;
- Size of crew;
- Length of cruise; and
- Size of vessel.

Economic Impact of Cruise Service on Florida

The economic impact of the more than 7 million cruise passengers using Florida ports is below.

EXHIBIT III-1: ECONOMIC IMPACT OF CRUISE OPERATIONS AT FLORIDA PORTS

	CRUISE GENERATED
JOBS	
DIRECT	20,032
INDUCED	11,809
INDIRECT	9,329
TOTAL JOBS	41,169
PERSONAL INCOME (THOUSANDS)	
DIRECT	\$657,783
INDUCED/LOCAL CONSUMPTION	\$1,280,956
INDIRECT	\$308,199
TOTAL PERSONAL INCOME (THOUSANDS)	\$2,246,938
BUSINESS REVENUE (THOUSANDS)	\$6,311,739
LOCAL PURCHASES (THOUSANDS)	\$458,298
STATE AND LOCAL TAXES (THOUSANDS)	\$207,478

Job and Personal Income Impacts

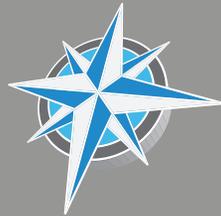
The cruise activity at public ports in Florida created 41,169 total jobs in the state of Florida. Of these 41,169 jobs, 20,032 were direct jobs, 11,809 jobs were supported in the state as the result of the purchases of the 20,032 direct jobs holders, while another 9,329 indirect jobs were supported in state industries that supply services and goods to the tourism industry catering to the passengers as well as to the chandlers and other firms supplying services and goods to the vessels while in port at the public ports in Florida.

The 20,032 direct job holders received \$657.8 million of direct wages and salaries. As the result of the purchases made locally with this income, (which supported the 11,809, induced jobs in the state) an additional \$1.3 billion of local income and consumption expenditures were created in the state. The 9,329 indirectly employed workers were paid \$308.2 million, for a total wage and salary income impact of \$2.3 billion, including the consumption impact.

Business and Tax Revenues

Local businesses supplying food, beverages, and services to the cruise lines and the services supplied at the airports handling the cruise passengers received \$6.3 billion of business revenue. In addition, in order to support the services and goods supplied to the cruise lines by these firms, another \$458.3 million of local purchases in the state were made by those firms providing direct services to the cruise lines. These local purchases supported the 9,329 indirect jobs in the local economy.

Finally, as the result of cruise activity at public ports within the state during the 2012 cruise season, \$207.5 million of state and local tax revenue was collected.



FLORIDA SEAPORTS

Florida Seaport Transportation and
Economic Development Council
www.flaports.org



use smartphone
bar code reader