# The Economic Impact of Georgia's Deepwater Ports On Georgia's Economy in FY 2023

June 2024

Jeffrey M. Humphreys, Director Selig Center for Economic Growth Terry College of Business The University of Georgia

This study was supported by a grant from the Georgia Ports Authority.

# **Executive Summary**

This summary highlights some of the findings regarding the economic impact of Georgia's deepwater ports on Georgia's economy in fiscal year 2023. The ensuing sections contain the comprehensive technical report.

The statewide economic impact of Georgia's deepwater ports in fiscal year 2023 includes:

- \$171 billion in sales (12 percent of Georgia's total sales);
- \$72 billion in state GDP (9 percent of Georgia's total GDP);
- **\$40** billion in income (6 percent of Georgia's total personal income);
- 609,197 full- and part-time jobs (12 percent of Georgia's total employment);
- **\$10** billion in federal taxes;
- \$2.8 billion in state taxes; and
- \$2.5 billion in local taxes.

These economic impacts demonstrate that continued emphasis on imports and exports through Georgia's deepwater ports translates into jobs, higher incomes, greater production of goods and services, and revenue collections for government. Ports operations help to preserve Georgia's manufacturing base, and foster growth of the state's massive logistics, distribution, and warehousing cluster.

# **Output Impacts**

Measured in the simplest and broadest terms, the total economic impact of Georgia's deepwater ports on Georgia's economy is \$171 billion, which is 12 percent of Georgia's output in FY 2023. Out of the total, \$98 billion represents initial spending, or direct economic impact; \$73 billion is indirect and induced spending, or the re-spending (multiplier) impact. Dividing the total output impact (\$171 billion) by initial spending (\$98 billion) yields an average multiplier value of 1.75. On average, therefore, every dollar initially spent by the ports industry and ports users generates an additional 75 cents for the state's economy.

#### State GDP (Value Added) Impacts

Measured in terms of GDP or value added, Georgia's deepwater ports contribute \$72 billion to the state's economy in fiscal year 2023, which is 9 percent of Georgia's total GDP. Out of the total, \$34 billion represents the direct effects of initial spending, or the direct economic impact; \$38 billion is indirect and induced spending, or the re-spending (multiplier) impact.

# **Income Impacts**

Measured in terms of income, Georgia's deepwater ports contributed \$40 billion to the state's economy in fiscal year 2023, which is 6 percent of Georgia's total personal income. Of the total, \$19 billion represents the direct effects of initial spending, or the direct economic impact; \$21 billion is indirect and induced spending, or the re-spending (multiplier) impact.

# **Employment Impacts**

The economic impact of Georgia's deepwater ports probably is most easily understood in terms of its effects on employment. Measured in these terms, Georgia's deepwater ports support 609,197 full- and part-time jobs, which is 12 percent of Georgia's total employment. This means that one job out of every eight is in some way dependent on the ports. Of the total employment impact, 275,688 jobs represent the direct effects of initial spending, or the direct economic impact; 333,509 jobs constitute the indirect and induced effect of spending, or the re-spending impact.

# **Tax Impacts**

**State:** The total economic impact of Georgia's deepwater ports on tax collections by state government in fiscal year 2023 is \$2.8 billion.

**Local:** The total economic impact of Georgia's deepwater ports on tax collections by local governments in fiscal year 2023 is \$2.5 billion.

**Federal:** The total economic impact of Georgia's deepwater ports on tax collections by the federal government in fiscal year 2023 is \$10 billion.

Deepwater ports are one of Georgia's strongest economic engines, fostering the development of virtually every industry. The ports are especially supportive of other forms of transportation, manufacturing, wholesale/distribution centers, and agriculture. The outstanding performance of Georgia's deepwater ports relative to other American ports reflects strong competitive advantages that allowed Georgia's ports to expand their share of activities. These advantages are largely the result of strategic investments in port facilities by the state over many years.

Georgia's deepwater ports industry consists of public marine terminals in Savannah and Brunswick owned by the Georgia Ports Authority as well as private marine terminals. Georgia's deepwater ports are thriving, and Savannah's port is one of the fastest growing container ports in the world. The superb performance of Georgia's ports relative to other ports reflects strong comparative advantages that allowed them to expand their shares of regional and national waterborne cargo traffic. These comparative advantages are the result of a series of strategic expansions over many years.

It is obvious that Georgia's deepwater ports create substantial economic impacts on the state in terms of output (sales), state GDP, income, employment, and tax revenues for federal, state, and local governments. Nonetheless, this study provides a quantitative assessment of the changes in overall economic activity as a result of the presence and operations of Georgia's deepwater ports in fiscal year 2023.

The facilities owned by the Georgia Ports Authority in Savannah and Brunswick will be referred to as the Port of Savannah and the Port of Brunswick, respectively; and cargo volumes, expenditures, and impact estimates for these facilities will be reported separately from those for private facilities/docks. The amounts expressed in this report (including the executive summary and appendices) are reported in current (2023) dollars.

**Economic Impact Highlights** 

The fundamental finding of this study is that the strategic decisions by state government to invest public resources in the two deepwater ports have contributed to substantial economic activity in Georgia. The statewide economic impact of the deepwater ports in fiscal year 2023 includes:

- \$171 billion in sales (12 percent of Georgia's total sales);
- \$72 billion in state GDP (9 percent of Georgia's total GDP);
- \$40 billion in income (6 percent of Georgia's total personal income);
- 609,197 full- and part-time jobs (12 percent of Georgia's total employment);
- \$10 billion in federal taxes;
- \$2.8 billion in state taxes; and
- \$2.5 billion in local taxes.

Measured in the simplest and broadest possible terms, the total economic impact of Georgia's deepwater ports on Georgia's economy is \$171 billion. This amount represents the combined impact of the ports industry and ports users on output, which can be thought of as the equivalent of business revenue, sales, or gross receipts. The \$171 billion output impact accounts for 12 percent of Georgia's total output in FY 2023. Out of the \$171 billion, \$10 billion (6 percent) represents the results from the ports industry and \$162 billion (94 percent) represents the results from ports users.

Of the FY 2023 total output impact, \$98 billion represents initial spending, or direct economic impact; and \$73 billion is indirect and induced spending, or the re-spending (multiplier) impact. Dividing the total output impact (\$171 billion) by direct spending (\$98 billion) yields an average multiplier value of 1.75. On average, therefore, every dollar initially spent by either the ports industry and ports users generates an additional 75 cents for the economy.

Expressed in other dimensions, the ports industry and port users together support \$72 billion in state GDP and \$40 billion in income, which account for 9 percent and 6 percent of Georgia's GDP and total personal income, respectively. The total economic impact on employment is 609,197 full- and part-time jobs, or almost one job out of every eight.

The combined impact of the ports industry and ports users on state tax collections is \$2.8 billion. The combined impact of the ports industry and ports users on local tax collections is \$2.5 billion. On federal tax collections it is \$10 billion.

Container traffic is the primary source of economic impact. The distribution of total economic impacts of cargobased activity at the Georgia Ports Authority's facilities in Savannah and Brunswick by mode of cargo indicates that containerized cargo accounts for 94 percent of the reported economic impacts. Auto/vehicle cargo accounts for 4 percent of the reported impacts, and breakbulk and dry bulk cargo each accounts for 1 percent of the reported impacts. Dry bulk and liquid bulk cargo each account for less than 1 percent of reported impacts.

# The Concept of Ports Economic Impact

The total economic impact of Georgia's deepwater ports consists of (1) direct spending by the ports industry, (2) direct spending by ports users, and (3) the secondary or indirect and induced spending—often referred to as the multiplier effects—created as direct expenditures by either the ports industry or ports users are re-spent.

The ports industry is defined to include economic activity (spending) that involves the transportation of waterborne cargo and ports services, including the ports themselves, the companies engaged in deepwater transportation as well as companies that provide ship services, and companies that provide inland transportation of waterborne cargo. Ports investment (capital expenditures) for additions and/or improvements to Georgia's deepwater ports also are included as part of the ports industry. This definition of the ports industry is identical to the definition used by the U.S. Department of Transportation, Maritime Administration in the MARAD Port Economic Impact Kit. Thus, the ports industry includes activities that take place on the vessel, at the terminal, and during the inland movement of cargo. Since the firms and enterprises that provide these activities locate in Georgia because of the existence of the ports, all their activity (spending) can be counted as direct economic impact.

Ports users are mainly manufacturers, wholesalers, distributors, and warehousing and storage firms that use the ports to transport materials and/or products. Although most users are importers and exporters, some ship materials or products to and/or from domestic locations. All the economic activity (spending) generated by ports users whose decision to locate, remain, and/or expand in Georgia hinges on the presence of these deepwater ports can be counted as direct economic impact. But since most ports users are only partially dependent on the presence of Georgia's deepwater ports, only a portion of their total economic activity is counted as direct economic impact. For example, firms that use Georgia's deepwater ports due to cost advantages over other ports or other modes of transportation are only partially dependent on Georgia's ports. Also, users that only ship a portion of their production and materials through Georgia's deepwater ports are only partially dependent on the ports. To avoid double counting, ports users' activity is defined to exclude their transportation expenditures associated with the waterborne cargo that is handled by Georgia's ports industry.

Secondary spending often is referred to as the multiplier effect of direct spending. There are two types of secondary spending: indirect spending and induced spending. Indirect spending refers to the changes in inter-industry purchases as Georgia's industries respond to the additional demands triggered by spending by either the ports industry or ports users. It consists of the ripples of activity that are created when the ports industry or ports users purchase goods or services from other industries located in the state. Induced spending refers to the additional demands triggered by spending by households as their income increases due to changes in production. Basically, the induced impact captures the ripples of activity that are created when households spend more due to the increases in their earnings that were generated by the direct and indirect spending.

The sum of the direct, indirect, and induced economic impacts is the total economic impact, which often is expressed in terms of output (sales), state GDP, income, or employment. Output is gross receipts or sales, plus or minus inventory. Total output impacts are the most inclusive, largest, measure of economic impact. Because of their size, output impacts typically are emphasized in economic impact studies and receive much media attention. One problem with output as a measure of economic impact, however, is that it includes the value of inputs produced by other industries, which means that there inevitably is some double counting of economic activity. The other measures of economic

impact (GDP, income, and employment) are free from double counting and provide a much more realistic measure of the true economic impact of Georgia's deepwater ports.

State GDP is value added, which consists of employee compensation, proprietor income, other property income, and indirect business taxes. Value added is equivalent to gross output (sales or receipts and other operating income, commodity taxes, and inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported). It is often referred to as the state-level counterpart of the nation's gross domestic product (GDP). Income is all forms of employment income, including wages, salaries, and proprietors' incomes. It does not include non-wage compensation (e.g., pensions and health insurance), transfer payments (e.g., welfare or social security benefits), or unearned income (e.g., dividends, interest, and rent). Employment includes total wage and salary employees as well as self-employed individuals. It encompasses both full- and part-time jobs and is measured in annual average jobs.

# Methodology

Estimating the economic impact of Georgia's deepwater ports involved two distinct steps. First, data regarding tonnage by type and capital expenditures were obtained from the Georgia Ports Authority. The tonnage and capital expenditure data were imported into the U.S. Department of Transportation's MARAD Port Economic Impact Kit to estimate the direct, indirect, induced, and total economic impacts of the ports industry. Second, ports users' spending was estimated. Ports users were surveyed to determine the degree to which they depend on Georgia's deepwater ports. To help correct for non-response and/or incomplete responses and to update the analysis, several types of government and administrative data were used to assess the proportion of revenue or sales in various industries that could be attributed to ports usage. Once initial spending by ports users was estimated, the IMPLAN economic impact assessment software system was used to estimate the indirect and induced economic impacts of the ports-related portion of spending by users. Finally, the statewide economic impact estimates were allocated to indvidual counties based on each county's economic structure and PIERS trade data regarding county-level imports and exports (measured in terms of short tons).

#### **Estimating the Ports Industry's Economic Impact**

A revised version of the U.S. Department of Transportation's MARAD port economic impact model that was built specifically for Georgia was used to estimate the direct, indirect, and induced economic impact of spending by the ports industry. A general discussion of the model, including its structure, methods, and use can be found in the two-volume *MARAD Port Economic Impact Kit*.

The Georgia Ports Authority provided the fiscal year 2023 data on cargo volume (import and export) by mode of transportation for the Savannah and Brunswick facilities that the MARAD model required. The cargo volume reported for the Port of Savannah includes data for the Garden City and Ocean terminals. The cargo volume reported for the Port of Brunswick includes data for the Mayor's Point Terminal, Colonel's Island, and the Brunswick East River/ Lanier Docks. Table 1 summarizes cargo volume for cars, containerized cargo, breakbulk cargo, dry bulk cargo, and liquid bulk cargo. Cargo volume is expressed on a per-vehicle basis for auto/vehicle cargo; a per-TEU (Twenty Foot Equivalent Unit) basis for containerized cargo; and a per-short ton (2,000 pounds) for breakbulk, dry bulk, and liquid bulk. In addition, the Georgia Ports Authority provided estimates of cargo volume for the private facilities/docks based on an analysis of data obtained from PIERS (Table 2). The Georgia Ports Authority also provided capital expenditures (ports investment) in FY 2023 for the facilities that it owns. Capital expenditures by the private facilities/docks are not included in this analysis, however.

#### **Estimating the Ports Users' Economic Impact**

Commodity-level data for vessel borne imports and exports were extracted from USA Trade Online on February 23, 2024, for the Port of Savannah and the Port of Brunswick. Vessel borne exports were adjusted to account for origin

of movement (Georgia), and vessel borne imports were adjusted to account for state of destination (Georgia). In addition, data and insights from two surveys were used to estimate the port users' economic impacts. For example, in Spring/Summer 2014, the Selig Center collaborated with the Georgia Governor's Development Council and the Center of Innovation for Logistics to survey representatives from Georgia's strategic industries (as well as economic development and transportation experts) regarding Georgia's ports and their impact on transportation competitiveness. Also, a confidential survey of the entire population of current users of the Georgia Ports Authority's facilities was conducted in 2003 to identify the industries that utilize the ports, their sales, and the extent to which they depend on the ports. The Economic Impact of Georgia's Deepwater Ports on Georgia's Economy in FY 2003 (April 2004) contains both the survey instrument and a brief summary of responses. Secondary sources of information supplemented and updated the information obtained from the surveys. These include: (1) The U.S. Department of Commerce, Bureau of Economic Analysis' historical data on gross domestic product and output, gross state product, and personal income. (2) The U.S. Department of Labor's and the Georgia Department of Labor's historical data on employment by industry. (3) U.S. Department of Transportation, Maritime Administration, Office of Ports and Domestic Shipping on the economic impact of ports users at the national level. (4) Studies of the economic impacts of the U.S. Deepwater Port System prepared for the American Association of Port Authorities. (5) The Georgia Department of Community Affairs and the Department of Industry Trade and Tourism's summary information from their survey of manufacturers regarding their international trade activity and current and future exports of their products. (6) County-level data provided by PIERS on the volume and estimated value of imports and exports for Georgia.

Based on an analysis of of data from USA Trade Online, the surveys, and secondary information sources, it was determined that port-related sales (output) totaled \$97 billion in Georgia. Manufacturers were estimated to account for about 80 percent of port-related sales, while wholesale/distribution/warehousing/storage activities accounted for about 15 percent of port-related sales, and agriculture, forestry, and mining accounted for the remaining 5 percent.

The IMPLAN modeling system was used to estimate the indirect and induced economic impact of ports users' initial spending (\$97 billion). A detailed discussion of the IMPLAN modeling system, including its structure, methods, and use, can be found at www.implan.com. IMPLAN estimated that \$97 billion in initial spending by port users represents \$92 billion in direct spending to Georgia's economy.

Results

The total economic impact of Georgia's deepwater ports on output, GDP, income, and employment is summarized in Table 3. The direct, indirect plus induced, and the total economic impacts of Georgia's deepwater ports in terms of output, income, and gross state product are reported in Table 4. Similarly, Table 5 and Table 6 report the employment and tax impacts, respectively. Table 7 reports the overall multiplier values for output, employment, income, and GDP. Table 8 reports the total economic impacts of cargo-based activity by mode of cargo at the Georgia Ports Authority's operations in Savannah and Brunswick. Table 9 shows the economic impacts per 1,000 TEUs of container cargo at the Port of Savannah. Table 10 details the total employment impact by county. More detailed tabulations of the economic impact of Georgia's deepwater ports are included in the Appendix.

#### ■ Output Impacts ■

Measured in the broadest terms, the total economic impact of the Port of Savannah and the Port of Brunswick on Georgia's economy is \$171 billion, which is 12 percent of Georgia's output.

Out of the total, \$10 billion (6 percent) represents the results from the ports industry, of which the GPA's operations at the Port of Savannah contribute 77 percent. Ports users' total output impact, however, is sseventeen times greater than that of the ports industry—\$162 billion. Indeed, ports users account for 94 percent of the total output impact of Georgia's deepwater ports. The ports exist to serve their users so it is not surprising that the majority of the economic impacts are generated by ports users rather than the industry itself.

Of the total output impact, \$98 billion represents initial spending, or direct economic impact; \$73 billion is indirect and induced spending, or the re-spending (multiplier) impact. Dividing the total output impact (\$171 billion) by direct spending (\$98billion) yields an average multiplier value of 1.75. On average, therefore, every dollar initially spent by either the ports industry or ports users generates an additional 75 cents for the state's economy.

### ■ State GDP (Value Added) Impacts ■

Measured in terms of GDP or value added, Georgia's deepwater ports contributed \$72 billion to the state's economy, which is 9 percent of Georgia's total GDP. Out of the total GDP impact, \$5 billion (7 percent) represents the results from the ports industry. The GPA's operations at the Port of Savannah contribute 77 percent of this amount. However, the \$67 billion GDP impact attributed to ports users is about fourteen times greater than that of the ports industry, so users account for 93 percent of the total GDP impact of Georgia's deepwater ports.

Of the total GDP impact, \$34 billion represents the direct effects of initial spending, or the direct economic impact; \$38 billion is indirect and induced spending, or the re-spending (multiplier) impact. Dividing the total GDP impact (\$72 billion) by the direct GDP impact (\$34 billion) yields an average multiplier value of 2.12. On average, therefore, every dollar of direct GDP produced by the ports industry and ports users yields an additional 112 cents for the state's economy.

# ■ Income Impacts ■

Measured in terms of income, Georgia's deepwater ports contributed \$40 billion to the state's economy, which is 6 percent of Georgia's total personal income. Out of the total, \$3 billion (8 percent) represents the results from the ports industry. The GPA's operations at the Port of Savannah contribute 77 percent of this amount, but ports users' \$36 billion income impact is over eleven times greater. Indeed, users account for 92 percent of the total income impact of Georgia's deepwater ports.

Of the total income impact, \$19 billion represents the direct effects of initial spending, or the direct economic impact; \$21 billion is indirect and induced spending, or the re-spending (multiplier) impact. Dividing the total income impact (\$40 billion) by the direct income impact (\$19 billion) yields an average multiplier value of 2.11. On average, therefore, every dollar of direct income produced by the ports industry and ports users generates an additional 111 cents for the state's economy.

#### Employment Impacts

The economic impact of Georgia's deepwater ports probably is most easily understood in terms of its effects on employment. Measured in these terms, Georgia's deepwater ports support 609,197 full- and part-time jobs, which equal 12 percent of Georgia's total employment—based on the household survey definition of employment.

This means that more than one job out of every eight is in some way dependent on the ports. Out of the 609,197 jobs, 59,854 (10 percent) represent the results from the ports industry. The GPA's operations at the Port of Savannah contribute 78 percent of these 59,854 jobs, but ports users' 549,343-job impact is almost ten times greater, so users account for 90 percent of the total employment impact of Georgia's deepwater ports.

Of the total employment impact, 275,688 jobs represent the direct effects of initial spending, or the direct economic impact; 333,509 jobs constitute the indirect and induced effect of spending, or the re-spending (multiplier) impact. Dividing the total job impact (609,197 jobs) by the direct job impact (275,688 jobs) yields an average multiplier value of 2.21. So, on average, each job created directly by the ports industry and ports users yields an additional 1.2 jobs in the state.

#### ■ State Tax Impact ■

Spending by the ports industry and ports users generate substantial tax revenue for Georgia's state government. The total economic impact of Georgia's deepwater ports on tax collections by state government in fiscal year 2023 is \$2.8 billion.

#### ■ Local Tax Impact ■

Spending by the ports industry and ports users generate substantial tax revenue for Georgia's local governments. The total economic impact of Georgia's deepwater ports on tax collections by local governments in fiscal year 2023 is \$2.5 billion.

### ■ Federal Tax Impact ■

Spending by the ports industry and ports users generate substantial tax revenue for the federal government. The total economic impact of Georgia's deepwater ports on tax collections by the federal government in fiscal year 2023 is \$10 billion.

**Comparisons to Previous Estimates** 

In 2022, the Georgia Ports Authority retained the University of Georgia's Terry College of Business to estimate the deconomic impact of Georgia's deepwater ports on the state's economy. Economic impact estimates for FY 2021 were published in *The Economic Impact of Georgia's Deepwater Ports: FY 2021* (June 2022). The methods used were very similar to those used in this study. The FY 2021 impacts of Georgia's deepwater ports were 561,087 full- and part-time jobs, \$140 billion in sales, \$59 billion in state GDP, and \$33 billion in income. The job impact therefore is 8.6 percent higher in FY2023 than in FY2021.

In 2020, the economic impact estimates for FY 2019 were published in The Economic Impact of Georgia's Deepwater Ports on Georgia's Economy in FY 2019 (July 2020). The FY 2019 impacts of Georgia's deepwater ports were 496,719 full- and part-time jobs, \$122 billion in sales, \$51 billion in state GDP, and \$29 billion in income.

In 2018, the FY 2017 impacts of Georgia's deepwater ports were 439,220 full- and part-time jobs, \$106 billion in sales, \$44 billion in state GDP, and \$25 billion in income.

In 2015, the FY 2014 impacts of Georgia's deepwater ports were 369,193 full- and part-time jobs, \$84 billion in sales, \$33 billion in state GDP, and \$20 billion in income.

In 2012, the FY 2011 impacts of Georgia's deepwater ports were 352,146 full- and part-time jobs, \$66.9 billion in sales, \$32.4 billion in state GDP, and \$18.5 billion in income.

In 2010, the FY 2009 impacts of Georgia's deepwater ports were \$61.7 billion in sales, \$26.8 billion in state GDP, \$15.5 billion in income, and 295,443 full- and part-time jobs.

In 2004, the FY 2003 impact of Georgia's deepwater ports were \$35.4 billion in sales, \$17.1 billion in gross state product, \$10.8 billion in income, and 275,968 full- and part-time jobs.

In 1997, Booz-Allen & Hamilton, Inc. conducted a study and published its results (for 1996) in Economic Impacts of Georgia's Deepwater Ports of Savannah and Brunswick (March 20, 1998). Instead of using actual cargo volumes and standard macroeconomic input-output modeling systems (e.g., MARAD Port Economic Impact Kit, IMPLAN, RIMS, or REMI) to measure direct, indirect, and induced economic impacts, Booz-Allen & Hamilton relied primarily on direct survey methods, which they said is "somewhat unique." Due to the unique character of their methods as well as the use of non-conventional definitions of standard economic impact terms, it is very difficult to make meaningful direct comparisons of their results to the results of this study, or to those of other port economic impact studies.

Booz-Allen & Hamilton found that the total economic impact of Georgia's deepwater ports on output (sales) and employment were \$22.3 billion and 76,672 jobs, respectively. Their estimates of the economic impact on tax collections by state and local governments was \$569 million, and that the economic impact on wages was \$1.7 billion. The estimates produced by the Terry College of Business (based on data for FY 2003) were considerably larger. The order of magnitude of Booz-Allen & Hamilton's output impact (\$22.3 billion), however, appears to be somewhat reasonable considering that: (1) the Port of Savannah and the Port of Brunswick both experienced exceptionally rapid growth in cargo volumes from 1996-2003 (implying that direct spending by the ports industry was much smaller in 1996 than it was in 2003); (2) Georgia's overall economy was much smaller in 1996 than it was in 2003 (implying that ports-related impacts were much smaller in 1996 than in 2003); (3) the survey-based approach did not capture all of the direct economic impacts; (4) the survey-based approach is incapable of capturing many of the indirect economic impacts; and (5) the survey-based approach does not capture any of the induced economic impacts.

In 1999, Georgia Southern University applied more conventional input-output modeling techniques to re-estimate the ports' 1996 economic impact. However, it appears that they relied on Booz-Allen & Hamilton's estimate of direct economic impact. Nonetheless, Georgia Southern's use of the REMI model to re-estimate both the indirect and induced economic impacts more fully captured the indirect and induced economic impacts of the direct spending (as estimated by Booz-Allen & Hamilton). Consequently, their impact estimates were higher than those produced by Booz-Allen & Hamilton.

**Closing Comment** 

This study investigates the economic impact of Georgia's deepwater ports, and finds substantial economic impacts in terms of output (gross receipts or sales), state GDP, income, employment, state and local tax revenues, and federal tax revenues. The findings are based on analytical methods that are standard in regional economics and economic consulting.

# Cargo Volume by Mode of Transportation at the Georgia Ports Authority's Facilities in Savannah and Brunswick (Import and Export) in FY 2023

					Percent of Total
Cargo Type	Mode	GPA Total	Savannah	Brunswick	by Mode
Autos					
	Long Dist. Truck	27,095	27,095	0	4
	Short Dist. Truck	573,222	12,506	560,716	77
	Rail	146,671	2,084	144,587	20
	Total	746,988	41,685	705,303	100
Containerize	ed				
	Long Dist. Truck	2,146,506	2,146,506	0	40
	Short Dist. Truck	2,391,433	2,391,433	0	44
	Rail	838,509	838,509	0	16
	Total	5,376,448	5,376,448	0	100
Breakbulk		075 000	005 500	50.400	10
	Long Dist. Iruck	375,990	325,500	50,490	48
	Short Dist. Iruck	223,119	122,139	110,980	28
	Rall	190,789	71,203	119,586	24
	Iotal	789,898	518,842	271,056	100
Dry Bulk					
	Long Dist. Truck	668,282	0	668,282	80
	Short Dist. Truck	0	0	0	0
	Rail	167,071	0	167,071	20
	Total	835,353	0	835,353	100
Liauid Bulk					
1	Long Dist. Truck	184,150	62,244	121,906	26
	Short Dist. Truck	261,448	258,960	2,488	37
	Rail	266,006	266,006	0	37
	Total	711,604	587,210	124,394	100

Note: Cargo volume is expressed on a per-vehicle basis for auto/vehicle cargo; a per-TEU ("Twenty-Foot Equialent") basis for containerized cargo; a per-short ton (2,000 pounds) basis for breakbulk, dry bulk, and liquid bulk cargo. Cargo volume is for the public facilities owned by the Georgia Ports Authority and does not include cargo volume for private facilities/docks. Breakbulk does not include autos, which are reported separately.

### Cargo Volume for Private Facilities/Docks in Savannah and Brunswick (Import and Export) in FY 2023

	Cargo Volume
Cargo Type	Total
Breakbulk	5,117,402
Dry Bulk	1,762,190
Liquid Bulk	761,539
Total	7,641,131

Note: Cargo volume is expressed on a per-short ton (2,000 pounds) basis. Cargo volume is for the privately owned facilities/docks and does not include cargo volume for facilities owned by the Georgia Ports Authority.

Source: Estimated by the Selig Center for Economic Growth (based on data provided by PIERS), Terry College of Business, The University of Georgia (www.selig.uga.edu), 2024.

Table 3

#### Summary of the Economic Impact of Georgia's Deepwater Ports on Georgia in Fiscal Year 2023 (millions of 2023 dollars)

	Total Economic Impact on:			Employment	
	<u>Output</u>	State GDP	Income	<u>(jobs)</u>	
Ports Industry	9,563	4,685	3,286	59,854	
Savannah Cargo-Based Activity	7,364	3,593	2,538	46,572	
Brunswick Cargo-Based Activity	377	181	123	2,319	
Ports Investment	1,066	544	355	5,678	
Private Facilities/Docks	757	366	270	5,285	
Ports Users	161,614	67,272	36,934	549,343	
Total Output/Revenue Impact	171,177	71,957	40,220	609,197	

Note: The ports industry refers to firms/enterprises located in Georgia because of the ports' existence. Savannah and Brunswick cargo-based activity and port investment refer to impacts generated by the public facilities owned by the Georgia Ports Authority. Private facilities/docks refers to impacts generated by privately owned facilities/ docks. Ports users are firms/enterprises that utilize ports facilities (primarily importers and exporters).

# Economic Impact of Georgia's Deepwater Ports on Output (Revenue), Income, and State GDP in Georgia, Fiscal Year 2023 (millions of 2023 dollars)

	Direct Economic Impact on Output/Revenue	Indirect & Induced Economic Impact on Output/Revenue	Total Economic Impact on Output/Revenue
Ports Industry	6,056	3,507	9,563
Savannah Cargo-Based Activity	4,792	2,572	7,364
Brunswick Cargo-Based Activity	244	132	377
Ports Investment	528	539	1,066
Private Facilities/Docks	493	264	757
Ports Users	91,918	69,696	161,614
Total Output/Revenue Impact	97,974	73,203	171,177
	Direct	Indirect & Induced	Total
	Economic Impact on	Economic Impact on	Economic Impact on

	Income	Income	Income
Ports Industry	2,152	1,134	3,286
Savannah Cargo-Based Activity	1,695	843	2,538
Brunswick Cargo-Based Activity	80	43	123
Ports Investment	193	161	355
Private Facilities/Docks	184	86	270
Ports Users	16,890	20,044	36,934
Total Income Impact	19,042	21,179	40,220

	Direct	Indirect & Induced	Total
	Economic Impact on	Economic Impact on	Economic Impact on
	State GDP	State GDP	State GDP
Ports Industry	2 932	1 753	4 685
Savannah Cargo-Based Activity	2,336	1,258	3,593
Brunswick Cargo-Based Activity	116	65	181
Ports Investment	244	301	544
Private Facilities/Docks	237	129	366
Ports Users	30,955	36,318	67,272
Total State GDP	33,887	38,070	71,957

Note: The ports industry refers to firms/enterprises located in Georgia because of the ports' existence. Savannah and Brunswick cargo-based activity and port investment refer to impacts generated by the public facilities owned by the Georgia Ports Authority. Private facilities/docks refers to impacts generated by privately owned facilities/docks. Ports users are firms/enterprises that utilize ports facilities (primarily importers and exporters).

# Economic Impact of Georgia's Deepwater Ports on Employment in Georgia, Fiscal Year 2023 (full- and part-time jobs)

	Direct Economic Impact on Employment	Indirect & Induced Economic Impact on Employment	Total Economic Impact on Employment
Ports Industry	38,683	21,171	59,854
Savannah Cargo-Based Activity	30,442	16,130	46,572
Brunswick Cargo-Based Activity	1,498	821	2,319
Ports Investment	3,125	2,533	5,678
Private Facilities/Docks	3,618	1,667	5,285
Ports Users	237,005	312,338	549,343
Total Employment Impact	275,688	333,509	609,197

Note: The ports industry refers to firms/enterprises located in Georgia because of the ports' existence. Savannah and Brunswick cargo-based activity and ports investment refer to impacts generated by the public facilities owned by the Georgia Ports Authority. Private facilities/docks refers to impacts generated by privately owned facilities/docks. Ports users are firms/enterprises that utilize ports facilities (primarily importers and exporters).

Source: Estimated by the Selig Center for Economic Growth, Terry College of Business, The University of Georgia (www.selig.uga.edu), 2024.

Table 6

# Economic Impact of Georgia's Deepwater Ports on Tax Collections in Georgia, Fiscal Year 2023 (millions of 2023 dollars)

	Federal Taxes	State Taxes	Local Taxes
Ports Industry	980.3	191.6	194.0
Savannah Cargo-Based Activity	779.9	146.8	151.9
Brunswick Cargo-Based Activity	37.8	7.1	7.4
Ports Investment	80.6	22.4	19.0
Private Facilities/Docks	82.0	15.3	15.7
Ports Users	8,970.7	2,620.0	2,351.9
Total	9,951.0	2,811.6	2,545.9

Note: The ports industry refers to firms/enterprises located in Georgia because of the ports' existence. Savannah and Brunswick cargo-based activity and ports investment refer to impacts generated by the public facilities owned by the Georgia Ports Authority. Private facilities/docks refers to impacts generated by privately owned facilities/ docks. Ports users are firms/enterprises that utilize ports facilities (primarily importers and exporters).

# Overall Multipliers for Output, Employment, Income, and State GDP, Fiscal Year 2023

	Multiplier Values			
	Output	Employment	Income	State GDP
Ports Industry	1.579	1.547	1.527	1.598
Savannah Cargo-Based Activity	1.537	1.530	1.497	1.538
Brunswick Cargo-Based Activity	1.541	1.548	1.543	1.559
Ports Investment	2.021	1.817	1.836	2.234
Private Facilities/Docks	1.537	1.461	1.471	1.546
Ports Users	1.758	2.318	2.187	2.173
Total	1.747	2.210	2.112	2.123

Note: The ports industry refers to firms/enterprises located in Georgia because of the ports' existence. Savannah and Brunswick cargo-based activity and ports investment refer to impacts generated by the public facilities owned by the Georgia Ports Authority. Private facilities/docks refers to impacts generated by privately owned facilities/ docks. Ports users are firms/enterprises that utilize ports facilities (primarily importers and exporters).

Source: Estimated by the Selig Center for Economic Growth, Terry College of Business, The University of Georgia (www.selig.uga.edu), 2024.

	Ta	able 8					
Distribution of Total Economic Impacts of Cargo-Based Activity at the Ports of Savannah and Brunswick by Mode of Cargo, Fiscal Year 2023							
Mode/Impact	Output/Revenue (Mil. \$2023)	State GDP (Mil. \$2023)	Income (Mil. \$2023)	Employment (jobs)			
Containerized Breakbulk Auto/Vehicle Dry Bulk Liquid Bulk	7,256 85 292 58 48	3,541 42 142 27 22	2,501 32 94 19 15	45,864 623 1,774 350 281			
Total	7,740	3,774	2,661	48,892			
Percent of Total Containerized Breakbulk Auto/Vehicle Dry Bulk Liquid Bulk	93.7 1.1 3.8 0.8 0.6	93.8 1.1 3.8 0.7 0.6	94.0 1.2 3.5 0.7 0.6	93.8 1.3 3.6 0.7 0.6			
Total	100.0	100.0	100.0	100.0			

### Economic Impact of 1,000 TEUs of Container Traffic on Georgia's Economy, Fiscal Year 2023 (thousands of 2023 dollars and jobs)

Economic Impact	Total	Ports Users	Ports Industry
Output/Revenue	27,019	25,670	1,350
State GDP/Value Added	11,359	10,700	659
Income	6,327	5,862	465
Employment (jobs)	95	86	9
Local Taxes	401	374	28
State Taxes	443	416	27
Federal Taxes	1,568	1,425	143

The estimates represent the total economic impact (direct, indirect, and induced) of 1,000 TEUs of container traffic at the Port of Savannah of the Ports Industry and Ports Users combined. The estimates are scalable (up or down) within reasonable limits.

# Economic Impact of Georgia's Deepwater Ports On County-Level Employment in Georgia, Fiscal Year 2023 (full- and part-time jobs)

County	Employment	County	Employment
Appling	695	Dada	505
Appling Atkinson	400	Daue	945
Bacon	400	Deestur	940
Bakor	421	Dekalb	26 297
Baldwin	1 466	Dertaib	50,207
Bally	1,400	Dodye	524
Banks	512	Dooly	336
Barrow	2,559	Dougnerty	4,728
Bartow	6,617	Douglas	6,695
Ben Hill	//4	Early	390
Berrien	548	Echols	57
Bibb	11,068	Effingham	5,702
Bleckley	259	Elbert	1,037
Brantley	472	Emanuel	1,017
Brooks	479	Evans	662
Bryan	2,766	Fannin	645
Bulloch	5,632	Fayette	6,059
Burke	859	Floyd	4,638
Butts	1.152	Forsyth	8.927
Calhoun	123	Franklin	1.043
Camden	1,401	Fulton	102,254
Candler	358	Gilmer	879
Carroll	4 700	Glascock	41
Catoosa	1 901	Glynn	6 278
Charlton	230	Gordon	3 644
Chatham	55 753	Grady	847
Chattaboochee	883	Greene	729
Chattooga	670	Gwinnett	51 531
Charokaa	8 589	Habersham	1 503
Clarka	6,009		1,000
Clay	54	Hancock	12,012
Oldy	54	Trancock	121
Clayton	22,942	Haralson	919
Clinch	385	Harris	782
Cobb	43,064	Hart	995
Coffee	2,336	Heard	305
Colquitt	1,875	Henry	10,015
Columbia	3,949	Houston	6,514
Cook	453	Irwin	196
Coweta	6,024	Jackson	7,050
Crawford	134	Jasper	399
Crisp	917	Jeff Davis	5,930

(continued)

# Table 10 (Continued)

# Economic Impact of Georgia's Deepwater Ports On County-Level Employment in Georgia, Fiscal Year 2023 (full- and part-time jobs)

County	Employment	County	Employment
Jefferson	858	Richmond	10.214
Jenkins	185	Rockdale	4,436
Johnson	193	Schley	169
Jones	497	Screven	427
Lamar	614	Seminole	313
Lanier	169	Spalding	2,730
Laurens	1,852	Stephens	1,076
Lee	841	Stewart	112
Liberty	6,991	Sumter	1,723
Lincoln	170	Talbot	125
Long	136	Taliaferro	24
Lowndes	5,309	Tattnall	1,273
Lumpkin	906	Taylor	160
McDuffie	893	Telfair	299
McIntosh	368	Terrell	298
Macon	414	Thomas	1,937
Madison	508	Tift	2,537
Marion	134	Toombs	1,502
Meriwether	577	Towns	335
Miller	148	Treutlen	164
Mitchell	897	Troup	6,046
Monroe	712	Turner	294
Montgomery	227	Twiggs	385
Morgan	1,192	Union	777
Murray	1,893	Upson	802
Muscogee	8,392	Walker	2,294
Newton	3,452	Walton	3,259
Oconee	1,526	Ware	1,667
Oglethorpe	293	Warren	205
Paulding	3,182	Washington	3,093
Peach	1,282	Wayne	2,977
Pickens	894	Webster	69
Pierce	497	Wheeler	114
Pike	440	White	930
Polk	1,384	Whitfield	10,041
Pulaski	283	Wilcox	176
Putnam	874	Wilkes	288
Quitman	43	Wilkinson	823
Rabun	533	Worth	347
Randolph	236	Georgia Total	609,197

Note: The allocation of port users' jobs to the counties is partially based on the location of the company on the bill of lading and is not necessarily the origin/destination of the cargo.

# The Economic Impact of Ports Industry Activity at the Georgia Ports Authority's Facilities in Savannah and Brunswick on Georgia in Fiscal Year 2023 (thousands of 2023 dollars)

Tatal Facebore in Jone at	Model Output	Model Employment	Model Income	Model GSP
Iotal Economic Impact	(000 of 2023\$)	(JODS)	(000 of 2023\$)	(000 of 2023\$
Agriculture	8,451.0	24.0	810.2	1,401.1
Agri. Serv., Forestrv. & Fish	3.335.4	45.0	1.492.0	1.841.3
Mining	11.648.2	82.0	1,675.5	4.025.9
Construction	94.370.9	203.0	12,961.2	29,124,2
Manufacturing	495.621.7	1.102.0	79.164.1	144.937.8
Trans. & Public Utilities	5.390.174.8	34.282.0	1.913.880.0	2.645.088.9
Wholesale	197.960.7	806.0	80.501.1	84.109.6
Retail Trade	429,795.8	5.423.0	158.025.5	250,187.9
Finance, Ins., & Real Estate	475,988,6	1.940.0	152,277,2	303,505,3
Services	576.409.7	4.696.0	242,431.5	279,243.6
Government	56 283 5	284.0	17 889 5	31 004 9
Government	00,200.0	20110	17,000.0	01,001.0
Total	7,740,040.6	48,892.0	2,661,108.0	3,774,471.1
Distribution of Economic Impact				
1. Direct Impact	5,036,014.5	31,940.0	1,774,847.4	2,451,870.6
2. Indirect & Induced Impacts	2,704,026.1	16,951.0	886,292.3	1,322,600.1
<ol><li>Total Economic Impact</li></ol>	7,740,040.6	48,892.0	2,661,108.0	3,774,471.1
4. Multipliers (e.g., 3/1)	1.537	1.531	1.499	1.539
Composition of Gross State Produ	ct			
1. Wages (Net of Taxes)				2,351,744.2
2. Taxes, Total				594,676.6
a. Local Taxes				98,503.3
b. State Taxes				88,619.5
c. Federal Taxes				407,551.5
3. Profits, dividends, rent and other	er			828,050.2
4. Total Gross State Product (1+2-	+3)			3,774,471.1
Tax Accounts				
Total				1,130,817.8
Local				159,253.5
State				153,858.1
Federal				817,705.5
Effects Per Million Dollars of Initial	Expenditures			
Employment (jobs)				9.7
Income				528,030.5
State Taxes				30,529.3
Local Taxes				31,599.9
Gross State Product				748,949.7
			F 0	

Note: Employment includes full- and part-time jobs. Detail may not sum to totals due to rounding.

# The Economic Impact of Ports Industry Activity at the Georgia Ports Authority's Facilities in Savannah on Georgia in Fiscal Year 2023 (thousands of 2023 dollars)

Total Economic Impact	Model Output (000 of 2023\$)	Model Employment (jobs)	Model Income (000 of 2023\$)	Model GSP (000 of 2023\$)
Agriculture	8,040.6	23.0	771.3	1,333.6
Agri. Serv., Forestry, & Fish	3,220.3	44.0	1,440.7	1,774.2
Vining	11,078.8	79.0	1,593.1	3,828.6
Construction	88,597.0	191.0	12,161.7	27,347.3
Manufacturing	471,820.4	1,049.0	75,396.9	138,007.0
Frans. & Public Utilities	5,141,529.5	32,759.0	1,832,913.5	2,527,517.8
Vholesale	189,056.4	770.0	76,880.3	80,326.3
Retail Trade	409,937.1	5,172.0	150,725.6	238,634.6
Finance, Ins., & Real Estate	451,006.0	1,843.0	144,982.2	287,296.1
Services	543,813.8	4,402.0	227,321.7	263,101.7
Government	45,399.5	238.0	14,223.1	23,935.6
Fotal	7,363,500.2	46,573.0	2,538,409.9	3,593,103.7
Distribution of Economic Impact				
1. Direct Impact	4,791,593.4	30,442.0	1,695,342.6	2,335,558.0
2. Indirect & Induced Impacts	2,571,906.8	16,130.0	843,098.9	1,257,545.5
3. Total Economic Impact	7,363,500.2	46,573.0	2,538,409.9	3,593,103.7
4. Multipliers (e.g., 3/1)	1.537	1.530	1.497	1.538
Composition of Gross State Produc	ct			
1. Wages (net of taxes)				2,243,457.7
2. Taxes. Total				567,109.5
a. Local Taxes				93,951.9
b. State Taxes				84,524,9
c. Federal Taxes				388,632,9
3. Profits, dividends, rent and of	her			782.536.3
4. Total Gross State Product (1-	+2+3)			3,593,103.7
Fax Accounts				
Fotal				1,078,530.4
₋ocal				151,899.3
State				146,755.2
Federal				779,875.4
	Expenditures			
Effects Per Million Dollars of Initial	•			9.7
Effects Per Million Dollars of Initial Employment (jobs)				
Effects Per Million Dollars of Initial Employment (jobs) ncome				529,405.9
Effects Per Million Dollars of Initial Employment (jobs) ncome State Taxes				529,405.9 30,607.0
Effects Per Million Dollars of Initial Employment (jobs) ncome State Taxes .ocal Taxes				529,405.9 30,607.0 31,679.8
Effects Per Million Dollars of Initial Employment (jobs) ncome State Taxes Local Taxes Gross State Product				529,405.9 30,607.0 31,679.8 749,370.8

Note: Employment includes full- and part-time jobs. Detail may not sum to totals due to rounding.

# The Economic Impact of Ports Industry Activity at the Georgia Ports Authority's Facilities in Brunswick on Georgia in Fiscal Year 2023 (thousands of 2023 dollars)

Total Economic Impact	Model Output (000 of 2023\$)	Model Employment (jobs)	Model Income (000 of 2023\$)	Model GSP (000 of 2023\$
Agriculture	410.3	1.0	38.9	67.4
Agri. Serv., Forestry, & Fish	115.2	1.0	51.3	67.1
Mining	569.4	3.0	82.5	197.3
Construction	5 773 9	12.0	799.4	1 776 9
Manufacturing	23 801 3	53.0	3 767 2	6 930 8
Trans. & Public Utilities	248 645 3	1 523 0	80,966,5	117 571 1
Wholesale	8 904 3	36.0	3 620 9	3 783 3
Retail Trade	19 858 7	251.0	7 299 9	11 553 4
Finance, Ins., & Real Estate	24 982 6	97.0	7 295 0	16 209 2
Services	32 595 9	294.0	15 109 8	16 142 0
Government	10 884 0	46.0	3 666 3	7 069 4
T	10,001.0	10.0	0,000.0	,,000.1
Iotal	376,540.4	2,319.0	122,698.1	181,367.4
Distribution of Economic Impact				
1. Direct impact	244,421.1	1,498.0	79,504.7	116,312.6
2. Indirect & Induced Impacts	132,119.3	821.0	43,193.4	65,054.6
3. Total Economic Impact	376,540.4	2,319.0	122,698.1	181,367.4
Composition of Gross State Produ 1. Wages (net of taxes) 2. Taxes, total a. Local Taxes	ict			108,286.5 27,567.0 4,553.4
b. State Taxes				4,094.7
c. Federal Taxes				18,918.6
3. Profits, dividends, rent and othe	er			45,513.8
4. Total Gross State Product (1+2	+3)			181,367.4
Tax Accounts				50 007 4
				52,287.4
Luuai Stata				7,354.3
Sidle				7,102.8
rederal				37,830.1
Effects Per Million Dollars of Initial	Expenditures			0.5
				9.5
State Taxes				0,007,0
				29,007.9
Gross State Product				30,034.8
Initial Expenditure in Dollars			0/	140,704.0

Note: Employment includes full- and part-time jobs. Detail may not sum to totals due to rounding.

# The Economic Impact of Auto/Vehicle Cargo at the Georgia Ports Authority's Facilities in Savannah and Brunswick on Georgia in Fiscal Year 2023 (thousands of 2023 dollars)

Total Economic Impact	Model Output (000 of 2023\$)	Model Employment (jobs)	Model Income (000 of 2023\$)	Model GSP (000 of 2023\$)
Agriculture	201.0	1.0	20.4	E0 7
Agriculture	321.3	1.0	30.4	52.7
Agri. Serv., Forestry, & Fish	90.2	1.0	40.3	52.7
Mining	317.3	2.0	47.4	111.5
Construction	4,955.6	11.0	687.8	1,523.9
Manufacturing	16,303.3	41.0	2,877.3	5,025.6
Irans. & Public Utilities	194,611.5	1,176.0	62,524.8	92,545.4
Wholesale	6,313.1	25.0	2,567.1	2,682.3
Retail Trade	15,229.3	193.0	5,598.2	8,858.8
Finance, Ins., & Real Estate	20,159.2	76.0	5,686.9	13,156.9
Services	23,906.7	204.0	10,924.3	11,693.5
Government	10,282.5	42.0	3,474.9	6,736.5
Total	292,490.2	1,774.0	94,459.7	142,439.9
Distribution of Economic Impact				
1. Direct Impact	189,599.1	1,135.0	60,761.9	91,558.2
2. Indirect & Induced Impacts	102,891.1	639.0	33,697.7	50,881.7
3. Total Economic Impact	292,490.2	1,774.0	94,459.7	142,439.9
4. Multipliers (e.g., 3/1)	1.543	1.563	1.555	1.556
Composition of Gross State Produ 1. Wages (net of taxes) 2. Taxes, total a. Local Taxes b. State Taxes c. Federal Taxes 3. Profits, dividends, rent and othe 4. Total Gross State Product (1+2- Tax Accounts	er +3)			83,067.6 21,519.7 3,631.1 3,229.1 14,659.5 37,852.6 142,439.9
Total				40 550 7
Local				5 787 4
State				5 544 8
Federal				29 218 5
Effects Per Million Dollars of Initial	Expenditures			29,210.5
Employment (jobs)				9.3
Income				497,182.3
State Taxes				29,184.7
Local Taxes				30,461.5
Gross State Product				749,722,4
Initial Expenditure in Dollars			1	89 990 155 1

Note: Employment includes full- and part-time jobs. Detail may not sum to totals due to rounding.

# The Economic Impact of Breakbulk Cargo at the Georgia Ports Authority's Facilities in Savannah and Brunswick on Georgia in Fiscal Year 2023 (thousands of 2023 dollars)

Total Economic Impact	Model Output (000 of 2023\$)	Model Employment (jobs)	Model Income (000 of 2023\$)	Model GSP (000 of 2023\$)
Agriculture	100.2	0.0	9.6	16.5
Agri. Serv., Forestry, & Fish	37.9	0.0	17.0	21.1
Mining	183.0	1.0	25.8	62.8
Construction	1 053 7	3.0	144 4	325.4
Manufacturing	6 690 3	13.0	947 9	1 845 0
Trans. & Public Utilities	48 026 5	317.0	17 253 2	23 609 6
Wholesale	2 195 7	9.0	893.0	932.9
Retail Trade	5 054 3	64.0	1 858 8	2 942 3
Finance, Ins., & Real Estate	5 521 3	22.0	1 744 9	3 528 8
Services	1/ 872 7	185.0	8 240 8	7 003 7
Government	1 276 7	60	422 7	701 2
	1,270.7	0.0	422.1	191.0
Total	85,012.4	623.0	31,558.2	42,069.4
Distribution of Economic Impact				
1. Direct Impact	55,315.4	433.0	21,809.9	27,460.5
<ol><li>Indirect &amp; Induced Impacts</li></ol>	29,696.8	189.0	9,748.3	14,608.9
<ol><li>Total Economic Impact</li></ol>	85,012.4	623.0	31,558.2	42,069.4
4. Multipliers (e.g., 3/1)	1.537	1.439	1.447	1.532
Composition of Gross State Product				
1. Wages (net of taxes)				28 078 1
2. Taxes. Total				6 863 8
a. Local Taxes				1 145 6
b. State Taxes				1 034 3
c. Federal Taxes				4 683 4
3. Profits, dividends, rent and other				7 127 4
4. Total Gross State Product (1+2+3	3)			42,069.4
Tax Accounts				
Total				13,221.8
Local				1 866 3
State				1 807 9
Federal				9,547.5
Effects Per Million Dollars of Initial F	xpenditures			
Employment (jobs)				11.3
Income				569 947 6
State Taxes				32 650 3
Local Taxes				32,000.0
Creas Chata Draduat				33,704.9 750 701 0
Gross State Product				

Note: Employment includes full- and part-time jobs. Detail may not sum to totals due to rounding.

# The Economic Impact of Containerized Cargo at the Georgia Ports Authority's Facilities in Savannah and Brunswick on Georgia in Fiscal Year 2023 (thousands of 2023 dollars)

Total Economic Impact	Model Output (000 of 2023\$)	Model Employment (jobs)	Model Income (000 of 2023\$)	Model GSP (000 of 2023\$
Agriculture	7,920.7	23.0	760.0	1,314.0
Agri, Serv., Forestry, & Fish	3.181.9	44.0	1.423.5	1.752.7
Mining	10.809.7	77.0	1,555.2	3.736.4
Construction	87.201.6	187.0	11.969.6	26.916.9
Manufacturing	462,919,3	1.033.0	74,223,8	135.637.7
Trans. & Public Utilities	5.075.442.3	32.347.0	1.810.213.3	2.495.635.9
Wholesale	186,125,5	759.0	75.688.4	79.081.1
Retail Trade	403.925.7	5.095.0	148.515.2	235.136.2
Finance, Ins., & Real Estate	444.296.2	1.817.0	142.872.5	283.002.9
Services	530.371.9	4.251.0	220.364.7	256.078.9
Government	43,729.0	231.0	13,669.3	22,896.5
Total	7 255 022 6	15 964 0	2 501 255 2	2 5/1 190 2
Distribution of Economic Impact	4 701 970 0	20.067.0	1 670 266 1	0.201.001.2
1. Direct impact	4,721,370.9	29,907.0	1,070,300.1	2,301,921.3
2. Indirect & induced impacts	2,034,002.0	15,696.0	030,920.9	1,239,200.0
4. Multipliers (e.g., 3/1)	1.537	45,864.0 1.530	2,501,255.2	3,541,189.3 1.538
Composition of Gross State Produ	ct			
<ol> <li>Wages (net of taxes)</li> </ol>				2,210,406.3
2. Taxes, total				559,022.5
a. Local Taxes				92,641.4
b. State Taxes				83,328.4
c. Federal Taxes				383,052.9
3. Profits, dividends, rent and othe	er			771,760.4
4. Total Gross State Product (1+2-	+3)			3,541,189.3
Tax Accounts				1 000 057 0
				140 740 5
EUCAI Stata				149,740.5
Siale				144,040.2
reuerai				700,509.0
Effects Per Million Dollars of Initial Employment (jobs)	Expenditures			97
Income				529,420.6
State Taxes				30,616.5
Local Taxes				31,694.4
Gross State Product				749,535.2

Note: Employment includes full- and part-time jobs. Detail may not sum to totals due to rounding.

# The Economic Impact of Dry Bulk Cargo at the Georgia Ports Authority's Facilities in Savannah and Brunswick on Georgia in Fiscal Year 2023 (thousands of 2023 dollars)

Total Economic Impact	Model Output (000 of 2023\$)	Model Employment (jobs)	Model Income (000 of 2023\$)	Model GSP (000 of 2023\$)
Aariculture	59.5	0.0	5.7	9.7
Agri Serv Forestry & Fish	14.0	0.0	6.0	8.1
Mining	177.3	1.0	24.6	60.3
Construction	611.7	1.0	83.9	188.8
Manufacturing	5.168.6	8.0	604.4	1.303.7
Trans. & Public Utilities	39,287.8	246.0	13.029.8	18.005.4
Wholesale	1,799.7	7.0	731.9	764.6
Retail Trade	3.057.1	39.0	1.123.6	1.778.8
Finance, Ins., & Real Estate	3.313.5	14.0	1.082.6	2.105.7
Services	4.028.2	31.0	1.616.8	1.931.4
Government	657.4	3.0	215.3	395.1
Total	58,174.7	350.0	18,524.7	26,551.9
Distribution of Economic Impact				
1. Direct Impact	37,969.4	226.0	11,981.1	16,769.4
2. Indirect & Induced Impacts	20,205.4	125.0	6,543.7	9,782.5
3. Total Economic Impact	58,174.7	350.0	18,524.7	26,551.9
4. Multipliers (e.g., 3/1)	1.532	1.549	1.546	1.583
Composition of Gross State Produ	ct			
1. Wages (net of taxes)				16,501.2
2. Taxes, Total				4,009.8
a. Local Taxes				606.4
b. State Taxes				569.9
c. Federal Taxes				2,833.4
3. Profits, dividends, rent and othe	er			6,041.0
4. Total Gross State Product (1+2-	⊦3)			26,551.9
Tax Accounts				
Total				7,741.9
Local				1,029.3
State				1,024.0
Federal				5,688.7
Effects Per Million Dollars of Initial	Expenditures			
Employment (jobs)				9.2
Income				487,347.0
State Taxes				26,939.1
Local Taxes				27,078.7
Gross State Product				698,525.6
Initial Expanditure in Dollars				0 011 240 0

Note: Employment includes full- and part-time jobs. Detail may not sum to totals due to rounding.

# The Economic Impact of Liquid Bulk Cargo at the Georgia Ports Authority's Facilities in Savannah and Brunswick on Georgia in Fiscal Year 2023 (thousands of 2023 dollars)

Total Economic Impact	Model Output (000 of 2023\$)	Model Employment (jobs)	Model Income (000 of 2023\$)	Model GSP (000 of 2023\$
Aariculture	49.4	0.0	4.6	8.1
Agri, Serv., Forestry, & Fish	11.5	0.0	5.1	6.7
Mining	161.0	1.0	22.5	54.9
Construction	548.4	1.0	75.6	169.2
Manufacturing	4 540 1	7.0	510.7	1 125 7
Trans & Public Litilities	32 806 8	196.0	10 858 9	15 292 6
Wholesale	1 526 7	6.0	620.7	648 7
Retail Trade	2 529 5	32.0	929.7	1 471 8
Finance Ins & Real Estate	2,628.4	11.0	890.4	1 711 1
Services	3 230 2	25.0	1 285 0	1 546 2
Government	338.0	20	107.2	185.4
Government	000.0	2.0	107.2	105.4
Total	48,439.7	281.0	15,310.1	22,220.6
Distribution of Economic Impact				
1. Direct Impact	31,759.6	179.0	9,928.5	14,161.2
<ol><li>Indirect &amp; Induced Impacts</li></ol>	16,680.2	102.0	5,381.7	8,059.0
<ol><li>Total Economic Impact</li></ol>	48,439.7	281.0	15,310.1	22,220.6
4. Multipliers (e.g., 3/1)	1.525	1.570	1.542	1.569
Composition of Gross State Product				
<ol> <li>Wages (net of taxes)</li> </ol>				13,691.1
2. Taxes, total				3,260.8
a. Local Taxes				480.8
b. State Taxes				457.9
c. Federal Taxes				2,322.2
3. Profits, dividends, rent and other				5,268.8
4. Total Gross State Product (1+2+3	3)			22,220.6
Tax Accounts				
Total				6,345.5
Local				830.1
State				833.2
Federal				4,681.8
Effects Per Million Dollars of Initial E	xpenditures			
Employment (jobs)				8.8
Income				481,452.4
State Taxes				26,202.7
Local Taxes				26,102.5
Gross State Product				698,763.8
			~	1 700 070 0

Note: Employment includes full- and part-time jobs. Detail may not sum to totals due to rounding.

# The Economic Impact of Private Docks in Savannah and Brunswick on Georgia in Fiscal Year 2023 (thousands of 2023 dollars)

Total Economic Impact	Model Output (000 of 2023\$)	Model Employment (iobs)	Model Income (000 of 2023\$)	Model GSP (000 of 2023\$)
	(*** * = = = = + ;	()====)		
Agriculture	859.4	2.0	82.3	142.1
Agri. Serv., Forestry, & Fish	293.2	4.0	131.5	164.0
Mining	1,741.3	13.0	245.1	596.3
Construction	8,906.1	19.0	1,220.0	2,750.8
Manufacturing	60,151.4	112.0	8,184.1	16,272.0
Trans. & Public Utilities	452,512.2	2,945.0	158,415.5	217,229.0
Wholesale	20,495.4	84.0	8,334.5	8,708.1
Retail Trade	43,602.3	550.0	16,033.0	25,379.4
Finance, Ins., & Real Estate	47,497.8	193.0	15,152.3	30,310.8
Services	110,542,4	1.316.0	59,037.9	58,584,7
Government	10,160.3	46.0	3,350.3	6,225.0
Total	756,761.4	5,284.0	270,186.3	366,361.5
Distribution of Economic Impact				
1. Direct Impact	492,514.5	3,618.0	183,719.0	236,910.9
2. Indirect & Induced Impacts	264,247.2	1,667.0	86,467.2	129,450.6
3. Total Economic Impact	756,761.4	5,284.0	270,186.3	366,361.5
4. Multipliers (e.g., 3/1)	1.537	1.460	1.471	1.546
Composition of Gross State Produc	ct			
1 Wages (net of taxes)				240 571 1
2 Taxes total				58,583,3
a Local Taxes				9.505.9
b. State Taxes				8.678.7
c. Federal Taxes				40,398,7
3 Profits dividends rent and othe	r			67 207 3
4. Total Gross State Product (1+2+	-3)			366,361.5
Tax Accounts				
Total				113,018.6
Local				15,673.8
State				15,302.3
Federal				82,042.3
Effects Per Million Dollars of Initial	Expenditures			
Employment (jobs)				10.7
Income				548,043.6
State Taxes				31,039.1
Local Taxes				31,792.5
Gross State Product				743,124.7
Initial Expenditure in Dollars			49	93.001.409.4

Note: Employment includes full- and part-time jobs. Detail may not sum to totals due to rounding.

# Bibliography

# **Printed Publications:**

American Association of Port Authorities (February 2024). Exports, Jobs and Economic Growth.

American Association of Port Authorities (April 2022). The Economic Impact of U.S. Seaports.

American Association of Port Authorities (April 2015). U.S. Public Port Facts.

American Association of Port Authorities (February 2006). America's Ports Today.

Booz-Allen & Hamilton Inc. (March 20, 1998). *Economic Impacts of Georgia's Deepwater Ports of Savannah and Brunswick*. Prepared for the Georgia Ports Authority.

Bureau of Business Research and Economic Development, Georgia Southern University (January 25, 1999). *The Regional Impacts of Georgia's Deep Water Ports*. Prepared for the Georgia Ports Authority.

Business Roundtable (February 2022). *How Georgia's Economy Benefits from Trade and Investment*. www.brt.org/ trade.

CompTIA (2020). Tech Trade Snapshot 2020: U.S. Technology Export Trends and Trade-Supported Jobs Analysis – National and Statewide Data. CompTIA.org

Connecticut Center for Economic Analysis, Department of Economics, University of Connecticut (May 23, 2001). *The Economic Impact of Connecticut's Deepwater Ports: An IMPLAN and REMI Analysis*. Prepared for the Connecticut Coastline Port Authority.

Executive Office of the President (2017). North American Industry Classification System. Office of Management and Budget. www.census.gov/naics.

Fisher, Jamie; Humphreys, Jeffrey; Kochut, Beata; Monteiro, Heather; Martin, Parker; and Borgman, Racheal (February 2, 2015). *Transportation Competitiveness Initiative, Draft Research Report*. Research conducted by the Governor's Development Council, UGA Selig Center for Economic Growth, and the Center of Innovation for Logistics. Published by the Georgia Regional Transportation Authority, 245 Peachtree Center Ave. NE., Atlanta, GA 30303.

Georgia Department of Community Affairs and Georgia Department of Industry Trade and Tourism (FY 2003). Results from the Business Retention and Expansion Process (BREP) Survey.

Georgia Department of Economic Development (2024). *International Trade by the Numbers: 2023*. Georgia.org/ Trade.

Georgia Department of Economic Development (2023). *Georgia Shatters Trade Records Again: 2022 Global Trade Summary*. Georgia.org/Trade.

Georgia Department of Economic Development (2022). *Georgia Sets New Records for Total Trade, Exports in 2021*. Georgia.org/Trade.

Georgia Ports Authority (2022). 2022 Annual Report. Georgia Ports Authority. Gaports.com.

Hall, Jeffrey. (2017) *Jobs Supported by State Exports*, 2016. Office of Trade and Economic Analysis, International Trade Administration, U.S. Department of Commerce.

Lahr, Michael L. (August 2005). *Economic Impacts of the New York/New Jersey Port Industry 2004*. Published by Rutgers Economic Advisory Service and A. Strauss-Wieder, Inc.

Hamilton, Gregory L., Rasmussen, David, and Zeng, Xiaogin (August 2000). *Rural Inland Waterways Economic Impact Kit Analysis Manual*. Institute for Economic Advancement, University of Arkansas at Little Rock.

Humphreys, Jeffrey M. (2022). *The Economic Impact of Georgia's Deepwater Ports on Georgia's Economy in FY 2021*. Selig Center for Economic Growth, Terry College of Business, University of Georgia. www.selig.uga.edu

Humphreys, Jeffrey M. (2020). *The Economic Impact of Georgia's Deepwater Ports on Georgia's Economy in FY 2019*. Selig Center for Economic Growth, Terry College of Business, University of Georgia. www.selig.uga.edu

Humphreys, Jeffrey M. (2018). *The Economic Impact of Georgia's Deepwater Ports: FY 2017*. Selig Center for Economic Growth, Terry College of Business, University of Georgia. Published by the Georgia Ports Authority.

Humphreys, Jeffrey M. (2015). *The Economic Impact of Georgia's Deepwater Ports: FY 2014*. Selig Center for Economic Growth, Terry College of Business, University of Georgia. Published by the Georgia Ports Authority.

Humphreys, Jeffrey M. (2012). *The Economic Impact of Georgia's Deepwater Ports: FY 2011*. Selig Center for Economic Growth, Terry College of Business, University of Georgia. Published by the Georgia Ports Authority.

Humphreys, Jeffrey M. (2010). *The Economic Impact of Georgia's Deepwater Ports on Georgia's Economy in FY 2009*. Selig Center for Economic Growth, Terry College of Business, University of Georgia. Published by the Georgia Ports Authority.

Humphreys, Jeffrey M. (2007). *The Economic Impact of Georgia's Deepwater Ports on Georgia's Economy in FY 2006*. Selig Center for Economic Growth, Terry College of Business, University of Georgia. Published by the Georgia Ports Authority.

Humphreys, Jeffrey M. and Bart, Barbara D. (April 2004). *The Economic Impact of Georgia's Deepwater Ports on Georgia's Economy in FY 2003*. Selig Center for Economic Growth, Terry College of Business, University of Georgia; Savannah State University; and the Georgia Ports Authority.

International Trade Administration (2017). U.S. Trade Overview 2016. Office of Economic Analysis, Trade Policy and Analysis, Industry and Analysis, International Trade Administration.

Intervisions (2017). Port of Vancouver: 2016 Economic Impact Study. Prepared for Vancouver Fraser Port Authority.

Marine Transportation System National Advisory Council (December 18, 2000). U.S. Economic Growth and the Marine Transportation System.

Martin Associates (March 2019). *The 2018 National Economic Impact of the U.S. Coastal Port System*. Prepared for American Association of Port Authorities.

Martin Associates (April 5, 2019). *The Local and Regional Economic Impacts of the Port of Houston*, 2018. Prepared for the Port of Houston Authority.

Martin Associates (April 26, 2019). *The Local and Regional Economic Impacts of Port Everglades, Fiscal Year 2018, Final Report*. Prepared for Port Everglades Department.

Martin Associates (July 17, 2019). *The Local and Regional Economic Impacts of the Port of Jacksonville*, 2018. Prepared for Jacksonville Port Authority.

Martin Associates (March 2015). *The 2014 National Economic Impact of the U.S. Coastal Port System*. Prepared for American Association of Port Authorities.

Martin Associates (April 30, 2014). *Economic Impacts and Competitiveness of the West Coast Ports and Factors that Could Threaten Growth*. Prepared for the Pacific Maritime Association.

Martin Associates (June 2013). *The Local and Regional Economic Impacts of the Port of Tampa*. Prepared for the Tampa Port Authority.

Martin Associates (June 6, 2008). *The Local and Regional Economic Impacts of the U.S. Deepwater Port System*, 2007. Prepared for the American Association of Port Authorities.

Martin Associates (January 25, 2005). *The 2003 Economic Impact of the Port of Seattle*. Prepared for the Port of Seattle.

Miller, Ronald E. and Blair, Peter D. (1985). *Input-Output Analysis: Foundations and Extensions*. Prentice-Hall, Inc., London.

Nachtmann, Heather (July 31, 2002). *Economic Evaluation of the Impact of Waterways on the State of Arkansas*. Department of Agricultural Engineering, University of Arkansas.

Nessen, Joseph C. (October 2023). 2023 Economic Impact of the South Carolina Ports Authority: Statewide and Regional Analysis. South Carolina Ports.

Rasmussen, Chris and Hall, Jeffrey (September 2014). *Jobs Supported by State Exports 2013*. Office of Trade and Economic Analysis, Department of Commerce, International Trade Administration.

Ryan, Timothy P. (February 2001). *The Economic Impacts of the Ports of Louisiana and the Maritime Industry*. University of New Orleans, New Orleans, LA.

Trade Partnership Worldwide, LLC., (February 2022). *Trade and American Jobs: The Impact of Trade on U.S. and State-Level Employment: 2022 Update*. 1001 Connecticut Avenue, NW, Washington, DC, 20036.

USA Trade Online. United State Census Bureau.

U.S. Department of Commerce, Bureau of Economic Analysis (1999). *Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System (RIMS II)*. Washington, D.C.: U.S. Government Printing Office.

U.S. Government Printing Office. (2009). House Report 111-243. 111<sup>th</sup> Congress, 1<sup>st</sup> Session, House of Representatives. Maritime Workforce Development Act, July 31, 2009.

U.S. Department of Commerce, U.S. Census Bureau News, CB09-56 (April 9, 2009). A Profile of U.S. Exporting Companies, 2006-2007.

U.S. Department of Transportation, Bureau of Transportation Statistics (2022). 2022 Port Performance Freight Statistics Program: Supply-Chain Feature.

U.S. Department of Transportation, Bureau of Transportation Statistics (2020). Port Performance Freight Statistics Annual Report to Congress 2020.

U.S. Department of Transportation, Maritime Administration (October 2000). MARAD Port Economic Impact Kit: Volume I: Handbook for Undertaking Port Economic Impact Assessments and Volume II: A User's Guide.

U.S. Department of Transportation, Maritime Administration (June 2005). A Report to Congress on the Performance of Ports and the Intermodal System.

U.S. Department of Transportation, Maritime Administration, Task Force (September 1999). A Report to Congress An Assessment of the U.S. Marine Transportation System.

U.S. Department of Transportation, Maritime Administration, Office of Policy and Plans (February 2011). U.S. Water Transportation Statistical Snapshot.

U.S. Department of Transportation, Maritime Administration, Office of Ports and Domestic Shipping (October 1998). A Report to Congress on the Status of the Public Ports of the United State 1996-1997.

U.S. Department of Transportation, Research and Innovation Technology Administration, Bureau of Transportation Statistics (2009). *America's Container Ports: Freight Hubs That Connect Our Nation to Global Markets*.

Von Nessen, Joseph C. (October 2019). The Economic Impact of the South Carolina Ports Authority: A Statewide and Regional Analysis. Division of Research, Moore School of Business, University of South Carolina.

Washington Economics Group, Inc. (November 23, 2003). A Forecast of Florida's International Trade Flows and the Economic Impact of Florida Seaports. Prepared for the Florida Seaport Transportation and Economic Development Council.

Wilber Smith Associates, Inc. (October 2008). *South Carolina State Ports Authority Economic Impact Study*. Prepared for the South Carolina State Ports Authority.