2020-2021 Economic Contributions of the **FLORIDA CITRUS INDUSTRY**



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Food and Resource Economics Department Gainesville, Florida



ECONOMIC IMPACT ANALYSIS PROGRAM

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EXECUTIVE SUMMARY

The Florida citrus industry encompasses a range of economic activities including fruit production in 27 counties of central and south Florida, fresh fruit grading, packing, and shipping to domestic and international markets, fruit processing for juice extraction and bulk shipment, and juice packaging for retail distribution. Florida citrus-bearing grove area declined from approximately 750,000 acres in the year 2001 to around 369,300 acres in 2021, a reduction of 51 percent, while production volume for utilization declined by 79 percent, primarily due to losses from citrus greening disease (also known as Huanglongbing or HLB), which was introduced to the state in 2005. The purpose of this study is to estimate the economic contributions of the citrus industry in Florida for the 2020-21 citrus marketing season, updating previous studies for 2018-19 and 2019-20. The analysis was conducted using the IMPLAN Cloud regional economic modeling platform and associated databases (IMPLAN Group LLC) with modifications for multi-industry contribution analysis implemented within the web platform (as suggested by Cheney, 2016). Estimates of the regional economic contributions of the industry include multiplier effects that measure the economic activity in other sectors supported through supply chain spending and the spending of income directly or indirectly associated with the sale of Florida citrus products.

During the 2020-21 citrus marketing season, 57.9 million boxes of citrus fruit were produced in Florida, including 53.0 million boxes of oranges, 4.1 million boxes of grapefruit, and 0.9 million boxes of specialty citrus, of which 10 percent was sold in the fresh market and 90 percent was utilized for processing. The total grower value of citrus fruit production was nearly \$785 million, with fruit for processing valued at nearly \$673 million and fruit for fresh consumption valued at more than \$112 million, based on delivered prices. Florida citrus juice processors produced 666 million gallons of citrus juice in 2020-21, with a total producer value of \$2.983 billion (free on board [F.O.B.] price basis). Florida citrus processors also produced byproducts of citrus pulp, meal, molasses, and the essential oil d-Limonene, valued at nearly \$63 million.

The economic contribution analysis estimated total industry output contributions of \$6.935 billion, including \$1.425 billion from citrus fruit production (grower receipts), \$5.334 billion from citrus juice manufacturing, and \$177 million from packinghouse sales of fresh citrus. The citrus industry supported a total of 32,542 fulltime and part-time jobs in the state. Total value added contributions, estimated at \$2.841 billion, represent the industry's contribution to Gross State Product. Labor income contributions amounted to \$1.606 billion, representing earnings by employees and business owners. Total state and local tax contributions of the Florida citrus industry were \$151 million. The Southern commercial citrus production area had the highest share of citrus industry employment contributions (9,637 jobs), followed by Western (6,732 jobs), Central (5,254), Northern (5,158 jobs), Indian River District (2,591 jobs), and the rest of Florida (3,169 jobs). Comparing the overall economic contributions of the Florida citrus industry in 2020-21 with the 2019-20 season using updated data, we calculate that employment increased by 0.2 percent, labor income increased by 5.8 percent, value added increased by 3.4 percent, and industry output increased by 2.8 percent in constant dollar terms.



Table ES-1. Summary of economic contributions of Florida citrus industry activities, 2020-21.

Industry Activity	Multiplier Effect	Employment (Jobs)	Labor Income (M\$)	Value Added (M\$)	Industry Output (M\$)
	Direct Effect	7,671	\$222	\$500	\$785
Crower Descipts	Indirect Effect	3,188	\$131	\$175	\$292
Grower Receipts	Induced Effect	2,206	\$105	\$197	\$348
	Total Effect	13,065	\$458	\$872	\$1,425
	Direct Effect	4,288	\$276	\$499	\$2,298
Canned (NFC) Juice	Indirect Effect	5,457	\$337	\$531	\$1,103
Processors Sales	Induced Effect	3,819	\$183	\$342	\$602
	Total Effect	13,564	\$795	\$1,372	\$4,004
	Direct Effect	1,363	\$92	\$174	\$684
Frozen Juice	Indirect Effect	1,865	\$114	\$173	\$333
Processors Sales	Induced Effect	1,286	\$61	\$115	\$203
	Total Effect	4,515	\$268	\$462	\$1,220
	Direct Effect	66	\$4	\$8	\$36
Byproducts (Canned	Indirect Effect	85	\$5	\$8	\$17
Processors) Sales	Induced Effect	59	\$3	\$5	\$9
	Total Effect	210	\$12	\$21	\$62
	Direct Effect	54	\$4	\$7	\$27
Byproducts (Frozen	Indirect Effect	74	\$5	\$7	\$13
Processors) Sales	Induced Effect	51	\$2	\$5	\$8
	Total Effect	179	\$11	\$18	\$48
	Direct Effect	401	\$31	\$42	\$81
Fresh Fruit	Indirect Effect	307	\$17	\$26	\$48
Packinghouse Sales	Induced Effect	301	\$14	\$27	\$48
	Total Effect	1,009	\$62	\$95	\$177
	Direct Effect	13,844	\$628	\$1,231	\$3,911
	Indirect Effect	10,976	\$609	\$919	\$1,806
iotai (Ali Activities)	Induced Effect	7,722	\$369	\$691	\$1,218
	Total Effect	32,542	\$1,606	\$2,841	\$6,935

Values in 2021 dollars. Employment includes fulltime and part-time jobs. Numbers might not sum due to rounding. Source: IMPLAN 2019 data for Florida (IMPLAN Group LLC).

INTRODUCTION

The Florida citrus industry encompasses a wide range of economic activities. Citrus fruits, including oranges, grapefruit, and specialty fruits such as tangerines and tangelos are produced in 27 counties across five commercial citrus production areas of central and south Florida, on approximately 369,300 acres of bearing grove lands (Figure 1, Table 1). Citrus grove management is a year-round activity; however, fruit harvesting is a seasonal activity, with the largest number of workers employed during the September through June harvesting season. Fresh Florida citrus fruit is graded and packed by 15 packinghouses in the state for shipment to both domestic and international markets.



Figure 1. Map of Florida commercial citrus production areas. Note: Data reported by county were assigned to citrus production areas. In some cases, counties that cross commercial citrus production area boundaries were assigned to the area that encompassed a majority of the county. Source: Florida Citrus Statistics 2020-21, USDA-NASS, Florida Field Office; Available at: <u>https://www.nass.usda.gov/Statistics_</u> *by_State/Florida/Publications/Citrus/ Citrus_Statistics/2020-21/fcs2021b.pdf*. Most of Florida citrus, however, is processed into fruit juices and other byproducts by 5 of 18 licensed processing plants in the state and packaged for retail sale to consumers through grocery stores and institutional food service establishments. Citrus juice is marketed in frozen concentrate and chilled or shelf-stable single-strength forms, or blended with other fruit juices as mixed juice products. Citrus juice is also shipped by Florida processors in bulk form to other firms for retail packaging and sale throughout the world. Citrus processors and packagers in Florida also purchase bulk citrus juice from other countries on the world market.

Florida is the largest citrus producing state in the United States, which is one of the largest citrus producing countries in the world. Trends in Florida citrus-bearing acreage, yields, production volume for utilization, and grower value over the 2001-21 period are summarized in Figures 2-5. Note that these data are for calendar years rather than citrus marketing years. Bearing acreage declined by 51 percent, from 749,100 acres in 2001 to 369,300 acres in 2021 (Figure 2). Note that bearing acreage is less than total acreage (shown in Table 1), which includes young and old non-productive groves. Orange and grapefruit yields per acre have generally declined in recent years, presumably reflecting the effect of citrus greening disease (HLB), as well as citrus canker (USDA-NASS, 2011). Orange yields peaked at 428 boxes per acre in 2004, then declined to just over 155 boxes per acre in 2021, while grapefruit yields declined from a peak of nearly 500 boxes per acre to 218 boxes per acre over the same period (Figure 3). Florida citrus fruit production for fresh and processed use decreased by 79 percent, from 277 million boxes in 2001 to 57.9 million boxes in 2021 (Figure 4). Value of production at the citrus grower level, however, has varied widely due to fluctuations in prices as well as yields (Figure 5).

The citrus industry produces a natural product that is transformed into a consumer good through value added processing and generates employment and income that contribute to the economic activity of Florida and the United States. Citrus fruit production, packing/shipping, and juice manufacturing activities are linked to an array of allied suppliers that provide production inputs and supporting services. Economic contribution analysis assesses the level of existing activities or industries in the overall economy of a region such as a state or county (Watson et al, 2007). Any activity that generates direct expenditures, income, or jobs has an effect on other parts of the economy in which it operates; an expenditure by one entity becomes income to another entity. As an analogy, consider the waves generated from a stone thrown in a lake that spread out in all directions. In economic contribution analysis, these waves are called secondary effects and are measured through economic multipliers that are unique to each type of activity or industry sector analyzed. Economic contributions can be expressed in terms of industry output (revenues), employment (fulltime and part-time jobs), labor income (wages, salaries, and employee benefits), value added (Gross State Product), and personal and business tax payments to local, state, and federal governments. Value added is a broad measure of income to the economy, including labor income, property

income (e.g., rents, interest, dividends), and personal and business taxes; it is comparable to Gross Domestic Product (GDP) for the United States or Gross State Product (GSP) for the state of Florida.

The purpose of this study is to estimate the economic contributions of the Florida citrus industry to the state of Florida, based on industry statistics for the 2020-21 marketing season (September 2020 to June 2021). Estimates are presented for citrus fruit production, marketing of fresh citrus fruit by packinghouses, and citrus juice processing/ manufacturing. Economic contribution estimates are provided for five commercial citrus production areas in Florida. Wholesale and retail distribution of citrus juice products were not considered in this analysis. This study updates previous studies of the Florida citrus industry for 1999-2000, 2003-04, 2007-08, 2012-13, 2014-15, 2015-2016, 2016-2017, 2018-2019, and 2019-2020 (Hodges et al., 2001, 2006; Rahmani and Hodges, 2012; Hodges et al., 2014; Hodges and Spreen, 2015; Court et al., 2016; Court et al., 2018; Court et al., 2020; Court et al., 2021). This report presents results for the 2020-21 season as well as updated results for the 2018-19 and 2019-20 seasons, with results expressed in 2021 dollars, enabling an investigation of trends in economic contributions over time.



Figure 2. Trend in Florida citrus bearing acreage, 2001-21. Source: USDA-NASS, Quick Stats, online data retrieval tool.



Figure 3. Trend in Florida orange and grapefruit yields, 2001-21. Note: Yields for 2005 to 2007 and 2017-2018 were affected by hurricanes in Florida. Source: USDA-NASS, Quick Stats, online data retrieval tool.



Figure 4. Trend in Florida citrus production for utilization, 2001-21. Source: USDA-NASS, Quick Stats, online data retrieval tool.



Figure 5. Trend in Florida citrus grower production value, 2001-21. Source: USDA-NASS, Quick Stats, online data retrieval tool.





METHODS AND DATA ANALYSIS

The economic contributions of the Florida citrus industry in 2020-21 were evaluated using published data on volumes and prices for citrus fruit production, packed fresh fruit shipments, and processed citrus juices and byproducts, together with a regional input-output model for the state of Florida. Data for citrus fruit were taken from reports by the United States Department of Agriculture's National Agricultural Statistics Service (USDA-NASS), the Florida Agricultural Statistics Service (FASS), and the Florida Department of Citrus (FDOC) Economic and Market Research Department. Data on the value and volume of processed citrus juices and byproducts were provided by FDOC.

This economic contribution analysis was conducted using IMPLAN and 2019 data for the state of Florida (IMPLAN Group LLC) to estimate the economic multiplier effects that capture the additional economic activity generated by industry supply chain activity and income re-spending by households in the local economy arising from the sale of Florida citrus products and byproducts. The extent of the total economic contributions of the citrus industry in Florida is measured by several metrics, including employment, labor income, value added, industry output, and taxes paid. A glossary of economic terms, located in Appendix A, provides basic definitions of the technical terms used in this report.

Economic multipliers measure the broader changes resulting from a given change in direct output or employment in an economy. There are three components of multipliers: direct, indirect, and induced. Direct effects represent the initial change in the industry of interest, indirect effects represent changes in inter-industry transactions as supplying industries respond to changes in demands from the directly affected industries, and induced effects reflect changes in local spending that result from income changes in employee and proprietor households. Social Accounting Matrix (SAM) multipliers in IMPLAN account for capital investment, taxes, and transfer payments such as social security, welfare, retirement pensions, and savings by households.

Regional models can be constructed for a single county, groups of contiguous counties, or for an entire state or region. In this case, the study region was defined as the state of Florida. Regional data from IMPLAN used to model economic contributions for all marketing years in this report represent the Florida economy in 2019. This was the most recent pre-COVID-19 data year available in IMPLAN as 2021 data were not yet available at the time. The model was constructed with specifications for the commodity trade flows gravity model representing the share of commodities purchased from local sources, and social-institutional accounts for households treated as endogenous. The model was modified within IMPLAN for industry economic contribution analysis. According to IMPLAN Group LLC (Lucas, 2019) this method is similar to Cheney (2016). This approach differs from all previous reports where the

IMPLAN Pro software was used and multiplier adjustments for economic contribution analysis were made manually by the user.

Four industry sectors in IMPLAN were used to analyze the Florida citrus industry: fruit farming (sector #4), frozen fruits, juices, and vegetables manufacturing (#77), canned fruits and vegetables manufacturing (#79), and wholesale - grocery and related products (#398). These industry sectors are defined under the North American Industry Classification System (NAICS) based on the primary product or service produced or technology used. The output value of each product of interest was specified and assigned to the appropriate industry sector for multi-industry contribution analysis: citrus fruit in the fruit farming sector, packed fresh citrus fruit in the wholesale - grocery and related products sector, frozen citrus juices (FCOJ) in the frozen fruits, juices, and vegetables manufacturing sector, and chilled or shelfstable single strength citrus juices in the canned (bottled) fruits and vegetables manufacturing sector. Values of processed byproducts were entered as contributions to the two processing sectors in proportion to their primary product volumes.

Total acreage and volume of citrus fruit produced in Florida counties and citrus production areas for the 2020-21 season are shown in Table 1. In 2020-21, the total citrus area (bearing and non-bearing) in the state was 407,348 acres, including 126,273 acres in the Central area, 124,061 acres in the Western area, 115,267 acres in the Southern area, 33,553 acres in the Indian River District area, and 8,194 acres in the Northern area.

Total volumes and values of citrus fruit production for the fresh market and processing are summarized by citrus variety in Table 2. For the 2020-21 season, the total volume of citrus fruit production in Florida was 57.9 million boxes, including 53.0 million boxes of oranges, 4.1 million boxes of grapefruit (red and white), and 0.9 million boxes of specialty citrus (tangelos and tangerines). Of the total citrus crop, 5.9 million boxes (10.1 percent) were utilized for the fresh market and 52.1 million boxes (89.9 percent) were utilized for processing. Free on board (F.O.B.) prices per box of fresh market fruit sold from packinghouses averaged \$15.51 for early, midseason, and Navel oranges, \$15.44 for Valencia oranges, \$22.37 for all grapefruits, \$28.70 for tangelos and tangerines. The total grower value of citrus fruit for fresh consumption was \$112 million and the total grower value of citrus fruit for processing was \$673 million, summing to a total grower value of \$785 million, based on delivered prices. The value of all grapefruit sold to the fresh market was \$44 million or 40 percent of the total value of fresh market citrus. Sales of Valencia oranges for juice represented \$400 million, or 59 percent of the total value of processed citrus in Florida in the 2020-21 season. Early, midseason, and Navel oranges accounted for \$249 million, or 37 percent of processed citrus, and \$24 million, or 21 percent of the fresh fruit market value.

Table 1. Florida citrus acreage and	production volume by county and citrus	production area, 2020-21
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					Production Volume
-	Oranges	Grapefruit	Specialty Fruit ¹	All Citrus	(1,000 Boxes)
Region/County		A	cres		
Central	120,858	1,463	3,952	126,273	20,001
Highlands	55,766	363	721	56,850	9,076
Osceola	5,656	396	43	6,095	979
Polk	59,436	704	3,188	63,328	9,946
Western	121,395	888	1,778	124,061	18,134
DeSoto	65,531	535	572	66,638	9,704
Hardee	42,229	163	845	43,237	6,371
Hillsborough	1,429	0	32	1,461	221
Manatee	11,358	18	238	11,614	1,702
Sarasota	848	172	91	1,111	136
Southern	109,541	3,527	2,199	115,267	12,339
Charlotte	12,222	803	364	13,389	1,392
Collier	27,673	899	398	28,970	3,016
Glades	4,973	0	550	5,523	557
Hendry	56,453	975	472	57,900	6,407
Lee	6,084	418	77	6,579	699
Okeechobee	2,136	432	338	2,906	268
Indian River District	13,552	13,699	6,302	33,553	6,059
Brevard	295	31	21	347	52
Indian River	5,628	5,367	2,314	13,309	2,485
Martin	512	0	0	512	69
St. Lucie	7,117	8,301	3,967	19,385	3,453
Northern	6,815	314	1,065	8,194	1,243
Citrus	0	0	0	0	0
Hernando	111	0	0	111	11
Lake	4,419	284	519	5,222	838
Marion	512	20	256	788	110
Orange	633	0	69	702	122
Pasco	587	0	143	730	86
Putnam	55	0	20	75	0
Seminole	158	10	48	216	25
Volusia	340	0	10	350	51
Total (All Areas)	372,161	19,891	15,296	407,348	57,776 ²

¹Tangelos and tangerines

²Difference between this number and production volume in the rest of the report results from small discrepancies between March 2022 report (the only one with disaggregation by county) and the more updated version of September 2022.

Source: Florida Citrus Statistics 2020-21, USDA-NASS, Florida Field Office; Available at: <u>https://www.nass.usda.gov/Statistics_by_State/Florida/Publications/</u> <u>Citrus/Citrus_Statistics/2020-21/fcs2021b.pdf</u>.



Table 2. Florida citrus production volumes, prices, and values for fresh or processed utilization, 2020-21.

							Grower	
	Total Production	Fresh Utilization	Processed Utilization	Price of Fresh Fruit	Price of Processed Fruit	Grower Value Fresh Fruit	Value Processed Fruit	Total Grower Value
Citrus Type		1000 boxes -		\$/k	юх		M\$	
Non- Valencia oranges (Early, Midseason, Navel)	22,700	1,538	21,162	\$15.51	\$11.77	\$23.85	\$249.08	\$272.93
Valencia orange	30,250	1,732	28,518	\$15.44	\$14.03	\$26.74	\$400.11	\$426.85
All grapefruits	4,100	1,987	2,113	\$22.37	\$10.12	\$44.45	\$21.38	\$65.83
Tange- los and tangerines	890	599	291	\$28.70	\$6.85	\$17.19	\$1.99	\$19.18
Total	57,940	5,856	52,084			\$112.24	\$672.56	\$784.80

Note: Prices are equivalent packinghouse door (PHD) return basis.

Source: Florida Citrus Statistics 2020-21, USDA-NASS, Florida Field Office; Available at: https://www.nass.usda.gov/Statistics_by_State/Florida/Publications/ Citrus/Citrus_Statistics/2020-21/fcs2021b.pdf. Total volumes, values, and margins for packed fresh fruit sold from packinghouses are shown in Table 3. In 2020-21, the total volume of certified fresh shipments was nearly 11 million 4/5 bushel cartons, including 6.1 million cartons of oranges, 3.8 million cartons of grapefruit, and 1.1 million cartons of specialty citrus (tangelos and tangerines). Average packinghouse door (P.H.D.) prices per box received by producers for fresh fruit were \$17.83 for early, midseason, and Navel oranges, \$15.92 for Valencia oranges, \$18.91 for all grapefruit (white and red), and \$24.51 for tangelos and tangerines, resulting in certified fresh shipments valued at more than \$193 million. The wholesale margin on fresh packed fruit is the difference between what was paid to packinghouses (delivered prices) and the value of shipped fruit (F.O.B. prices). The wholesale margin on total certified fresh shipments for 2020-21 was valued at \$81 million.

	Total Certified Shipments	Packed Fresh Fruit Price	Value of Packed Fresh Fruit	Packinghouse Margin
Citrus Type	(4/5 bushel cartons)	(\$/carton)		M\$
Non-Valencia oranges (Early, Midseason, Navel)	2,830,475	\$17.83	\$47.27	\$23.42
Valencia orange	3,263,242	\$15.92	\$51.96	\$25.22
All grapefruit	3,777,058	\$18.91	\$71.23	\$26.78
Tangelos and tangerines	1,095,713	\$24.51	\$22.78	\$5.59
Total	10,966,488		\$193.25	\$81.01

 Table 3. Florida citrus packinghouse volumes, prices, values, and margins, 2020-21.

Note: Prices are season average estimates for 2020-21 based on packinghouse door (PHD) prices.

Sources: Florida Department of Citrus, Florida Citrus Processors Annual Statistical Report, 2020-21 and FDOC estimates.

Florida citrus juice processors produced 666 million gallons of citrus juice in 2020-21, based on Florida citrus processor statistics. The total producer value of citrus juice was \$2.983 billion (Table 4). Production of packaged canned orange juice was 354 million gallons (single-strength equivalent basis), generating a total value of \$2.182 billion. Bulk frozen orange juice production totaled 228 million gallons, with a total producer value of nearly \$479 million in 2020-21. The producer values were estimated using an average wholesale price for bulk juice sales, and average retail values for packaged products, less an assumed 30 percent retail markup, based on information from Florida citrus processor statistics (FDOC).

Table 4. Volume and producer value of Florida citrus juice, 2020-21.

Product	Shipped Volume (Million gallons)	Producer Value (M\$)
Bulk frozen concentrated orange juice	228.00	\$478.81
Bulk frozen concentrated grapefruit juice	3.73	\$13.46
Packaged frozen concentrated orange juice	56.25	\$191.37
Packaged frozen concentrated grapefruit juice	0.11	\$0.74
Bulk single strength orange juice	13.67	\$45.80
Bulk single strength grapefruit juice	-0.33	-\$1.11
Packaged single strength orange juice	353.87	\$2,182.29
Packaged single strength grapefruit juice	10.76	\$71.45
Total (All citrus juice)	666.06	\$2,982.81

Note: Producer values are based on freight on board (FOB) prices.

Source: Florida Department of Citrus, Economic and Market Research Department, Citrus processor database, Mar. 2022.



Table 5 shows the shares of in-state sales and out-of-state sales of Florida citrus juices in 2020-21. In-state sales of packaged frozen and canned citrus juices represented 2 percent and 7 percent of total citrus juice produced in Florida, respectively, based on Nielson retail scanner data for major metro areas of the United States (FDOC). All bulk juice was assumed to be shipped out-of-state to packaging firms. The total value of all citrus juice shipped from Florida to other states and foreign countries was estimated at \$2.721 billion, or 91 percent of total Florida citrus juice sales in 2020-21.

Table 5. Producer value of Florida citrus juice sales in-state

 and out-of-state, 2020-21.

Citrus Juice	In-State Sales	Out-of-State Sales	Total Sales
Product		M\$	
Frozen concentrated juice	\$59.88	\$624.50	\$684.38
Single strength juice	\$201.85	\$2,096.58	\$2,298.43
Total all citrus juice	\$261.73	\$2,721.08	\$2,982.81

Source: Florida Department of Citrus, Economic and Market Research Department, Citrus processor database, Mar. 2022, estimated from Nielson retail sales, annual topline report 2020-21 season, and sales in major United States metro areas.

In addition to orange and grapefruit juices, the Florida citrus processing industry produces several other important

byproducts, including citrus pulp, meal, molasses, and d-Limonene. The essential oil d-Limonene, recovered from the distilled extracts of fruit peel and seeds is used for a variety of chemical products such as cleaners, disinfectants, flavors, and fragrances. Citrus pulp, meal, and molasses are sold as livestock feeds or feed ingredients. During the 2020-21 season, Florida citrus processors produced 205,256 tons of citrus pulp and meal, 5,011 tons of molasses, and 4.6 million pounds of d-Limonene. The total value of these byproducts in 2020-21 was nearly \$63 million, with citrus pulp and meal representing about 82 percent of the total value (Table 6). Note that there were no industry data available on volumes or prices of orange or grapefruit oil and other high-valued food grade, cold pressed citrus oils and essences, so these byproducts were not considered in the analysis; however, their economic contribution is believed to be relatively small.

Table 6. Volume and value of Florida citrus byproducts,2020-21.

Byproduct	Volume	Unit	Price (\$/unit)	Value (M\$)
Citrus pulp & meal	205,256	U.S. Tons	\$250.00	\$51.31
Molasses	5,011	U.S. Tons	\$170.00	\$0.85
d-Limonene	4,603,139	Pounds	\$2.30	\$10.59
Total				\$62.75

Note: There are no official data for volume or price of orange oil or other cold-pressed essential oils.

Sources: Florida Department of Citrus, Florida Citrus Processors Annual Statistical Report, 2020-21 and survey of industry sources.



ECONOMIC CONTRIBUTION RESULTS

Total economic contributions estimated for the Florida citrus industry in 2020-21 are summarized in Table 7. Direct industry output contributions (or sales revenues) for all citrus industry activities were \$3.911 billion, and the total industry output contributions (with regional multiplier effects) of the industry were \$6.935 billion, including \$1.425 billion supported by citrus fruit production, \$5.334 billion supported by citrus juice manufacturing and byproducts, and about \$177 million supported by fresh citrus packinghouse margins. Indirect output contributions arising from purchases of inputs from other industry sectors, were \$1.806 billion, while induced output contributions resulting from consumer spending by employee households were nearly \$1.218 billion. The ratio between total output contributions and direct output contributions implies an imputed overall imputed multiplier of 1.77. This means that for every \$1 of sales revenue within the citrus industry, an additional \$0.77 of sales revenues are supported throughout the rest of Florida's economy.

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	Direct Effect	1,363	\$92	\$174	\$684
Frozen Juice	Indirect Effect	1,865	\$114	\$173	\$333
Processors Sales	Induced Effect	1,286	\$61	\$115	\$203
	Total Effect	4,515	\$268	\$462	\$1,220
	Direct Effect	66	\$4	\$8	\$36
Byproducts (Canned	Indirect Effect	85	\$5	\$8	\$17
Processors) Sales	Induced Effect	59	\$3	\$5	\$9
	Total Effect	210	\$12	\$21	\$62
	Direct Effect	54	\$4	\$7	\$27
Byproducts (Frozen	Indirect Effect	74	\$5	\$7	\$13
Processors) Sales	Induced Effect	51	\$2	\$5	\$8
	Total Effect	179	\$11	\$18	\$48
	Direct Effect	401	\$31	\$42	\$81
Fresh Fruit	Indirect Effect	307	\$17	\$26	\$48
Packinghouse Sales	Induced Effect	301	\$14	\$27	\$48
	Total Effect	1,009	\$62	\$95	\$177
	Direct Effect	13,844	\$628	\$1,231	\$3,911
	Indirect Effect	10,976	\$609	\$919	\$1,806
iolai (Ali Activities)	Induced Effect	7,722	\$369	\$691	\$1,218
	Total Effect	32,542	\$1,606	\$2,841	\$6,935

Table 7. Summary of economic contributions of Florida citrus industry activities, 2020-21.

Note: Values in 2021 dollars. Employment includes fulltime and part-time jobs. Numbers might not sum due to rounding. Source: IMPLAN model and 2019 data for Florida (IMPLAN Group LLC).

The Florida citrus industry supported a total of 32,542 jobs in the state during the 2020-21 season, including 13,065 jobs supported by citrus fruit production, 18,468 jobs supported by citrus juice and byproducts manufacturing, and 1,009 jobs supported by citrus fruit packinghouses. These employment contributions represent both fulltime and part-time jobs (not adjusted to a fulltime equivalent basis) and include multiplier effects (i.e., employment supported throughout Florida's economy as a result of citrus industry activity).

Total value added contributions of the Florida citrus industry in 2020-21 were estimated at \$2.841 billion. Citrus juice and byproduct manufacturing supported the highest total value added contributions of \$1.874 billion, followed by citrus fruit production with \$872 million, and fresh fruit packinghouse operations with \$95 million.

Total labor income contributions amounted to \$1.606 billion, representing wages, salaries, and benefits to industry employees and business proprietor (owner) income. Note that output, value added, and labor income are independent measures of economic contributions and should not be added together.

Economic Contributions by Industry Group

Total economic contributions of the Florida citrus industry by major industry group are shown in Table 8. The largest contributions occurred in the agriculture and manufacturing industry groups where citrus fruit production and juice processing/packaging activities occur, with industry output contributions of \$970 million and \$3.314 billion, respectively. Large output contributions also occurred via indirect/ induced multiplier effects in the sectors for real estate and rentals (\$363 million), finance and insurance (\$255 million), transportation and warehousing (\$244 million), health and social services (\$174 million), and professional, scientific, and technical services (\$167 million). Employment contributions in the agriculture sector (10,860 jobs) were much greater than for manufacturing (6,295 jobs) due to the labor-intensive nature of agriculture, particularly for fruit harvesting. Significant employment contributions also occurred via indirect and induced multiplier effects in transportation and warehouse activities (1,906), health and social services (1,457 jobs), retail trade (1,318 jobs), and professional, scientific, and technical services (1,040 jobs). The contributions in other industries indicate the extensive linkages of the citrus industry throughout the Florida economy.

Industry Group (NAICS)	Employment (Jobs)	Labor Income (M\$)	Value Added (M\$)	Industry Output (M\$)
11. Agriculture, forestry, fishing & hunting	10,860	\$341	\$630	\$970
21. Mining	11	\$1	\$1	\$5
22. Utilities	71	\$30	\$47	\$89
23. Construction	128	\$8	\$13	\$29
31-33. Manufacturing	6,295	\$395	\$757	\$3,314
42. Wholesale trade	2,594	\$214	\$340	\$606
44-45. Retail trade	1,318	\$42	\$77	\$127
48-49. Transportation & warehousing	1,906	\$74	\$116	\$244
51. Information	218	\$30	\$51	\$112
52. Finance & insurance	979	\$58	\$99	\$255
53. Real estate & rental	1,026	\$126	\$223	\$363
54. Professional, scientific & technical services	1,040	\$64	\$104	\$167
55. Management of companies	595	\$49	\$76	\$131
56. Administrative & waste services	1,361	\$40	\$65	\$118
61. Educational services	184	\$5	\$9	\$13
62. Health & social services	1,457	\$56	\$104	\$174
71. Arts, entertainment & recreation	303	\$8	\$14	\$24
72. Accommodation & food services	1,176	\$27	\$49	\$88
81. Other services	942	\$29	\$50	\$78
92. Government & non-NAICs	78	\$9	\$15	\$28
Total all industry groups	32,542	\$1,606	\$2,841	\$6,935

Table 8. Economic contributions of the Florida citrus industry by industry group, 2020-21.

Note: Industries are classified by the North American Industry Classification System (NAICS). Values in 2021 dollars. Employment includes fulltime and part-time jobs. Numbers might not sum due to rounding. Source: IMPLAN model and 2019 data for Florida (IMPLAN Group LLC).

Tax Contributions

Local, state, and federal tax contributions supported by the Florida citrus industry in 2020-21 are presented in Table 9. Total state and local tax contributions were more than \$151 million. This includes state and local tax contributions in categories such as property taxes, sales taxes, water management district taxes, intangible taxes, motor fuel and vehicle taxes, excise taxes, etc. The largest state and local tax contributions were sales taxes (\$74 million), and property taxes (business and personal - \$52 million).

Total federal tax contributions supported by the Florida citrus industry in 2020-21 were estimated at \$395 million, including personal income taxes of nearly \$177 million, and employer and employee contributions to social insurance taxes (Social Security) of \$83 million and \$98 million, respectively.

Economic Contributions in Florida Commercial Citrus Production Areas

Citrus fruit production occurs in 27 counties in Florida across five commercial citrus production areas of the state (Figure 1) with fresh fruit packinghouses and juice manufacturing plants heavily concentrated in these areas as well. However, the statewide economic contribution of the citrus industry also positively affects counties outside of the commercial citrus production areas through other sectors that provide inputs to the citrus industry. The estimated total economic contributions (combination of direct, indirect, and induced effects) were allocated to counties based on the proportional share of each economic activity and were then aggregated to commercial citrus production areas. For citrus growing, we based our information on USDA-NASS (2022) and for processing and wholesale activities we used IMPLAN 2019 Data for Florida. Note that separate regional economic models were not used for this analysis, which would have given different results, because of considerations for regional trade balances and generally smaller economic multipliers.

Results by Florida commercial citrus production area for 2020-21 are summarized in Table 10. The Southern Florida area had the highest share of citrus industry economic contributions, with total employment contributions of 9,637 jobs, total output contributions of \$1.7 billion, and total value added contributions of \$860 million. The Western Florida area supported 6,732 jobs, \$1.5 billion in output, and \$621 million in value added. The Central Florida area supported 5,254 jobs, \$1.3 billion in output, and \$433 million value added. The Northern Florida area supported 5,158 jobs, \$1.3 billion in output and \$428 million in value added. The Indian River District area supported 2,591 jobs, \$695 million in output, and \$228 million in output, and \$271 million in value added.

Table 9. State/local and federal tax contributions of theFlorida citrus industry, 2020-21.

Tax Item Description	Amount (\$1,000)
Dividends	\$0
Social ins. tax - Employee contribution	\$149
Social ins. tax - Employer contribution	\$227
Tax on production and imports: Sales tax	\$74,009
Tax on production, imports and personal: Property tax	\$51,175
Tax on production and imports: Motor vehicle license	\$1,030
Tax on production and imports: Severance tax	\$66
Tax on production and imports: Other taxes	\$9,786
Tax on production and imports: S/L non-taxes	\$5,474
Corporate profits tax	\$7,906
Personal tax: Income tax	\$0
Personal tax: Non-taxes (fines- fees)	\$0
Personal tax: Motor vehicle license	\$1,194
Personal tax: Property taxes	\$330
Personal tax: Other tax (fish/hunt)	\$86
Total state and local tax contribution	\$151,433
Social ins. tax - employee contribution	\$97,628
Social ins. tax - employer contribution	\$82,609
Tax on production and imports: Excise taxes	\$5,899
Tax on production and imports: Custom duty	\$4,781
Tax on production and imports: Fed non-taxes	\$0
Corporate profits tax	\$27,029
Personal tax: Income tax	\$177,251
Total federal tax contribution	\$395.197

Note: Values in 2021 dollars. Numbers might not sum due to rounding. Source: IMPLAN model and 2019 data for Florida (IMPLAN Group LLC). Table 10. Total economic contributions of the Florida citrus industry by commercial citrus production area, 2020-21.

Florida Production Area	Employment (Jobs)	Labor Income (M\$)	Value Added (M\$)	Industry Output (M\$)
Southern	9,637	\$503	\$860	\$1,702
Western	6,732	\$344	\$621	\$1,455
Central	5,254	\$227	\$433	\$1,299
Northern	5,158	\$246	\$428	\$1,274
Indian River District	2,591	\$123	\$228	\$695
Rest of Florida	3,169	\$164	\$271	\$511
Total all areas	32,542	\$1,606	\$2,841	\$6,935

Note: Values in 2021 dollars. Employment includes fulltime and part-time jobs. Numbers might not sum due to rounding. Source: IMPLAN model and 2019 data for Florida (IMPLAN Group LLC).

Measures of economic contributions in relative terms can be quite different from those in absolute value terms reported above. Employment and value added contributions from the citrus industry as a share of the overall 2021 economy were highest in the Central Florida area (1.04 percent and 1.13 percent, respectively), followed by the Indian River District area (0.42 percent and 0.45 percent), the Western area (0.33 percent and 0.32 percent), the Northern area (0.22 percent and 0.22 percent), the Southern area (0.20 percent and 0.20 percent), and the rest of Florida area (0.15 percent and 0.15 percent). Indeed, although the economic contributions of the citrus industry are smaller in absolute terms in many of the rural counties, their contributions might be more important in relative terms because these industries represent a higher share of total economic activity. Total employment and value added contributions for each county and commercial citrus production area as well as total employment and value added contributions as a share of total employment and value added for the county or production area in 2020 are shown in Table 11, Figure 6, and Figure 7. The relative shares of total county-level employment supported by the citrus industry range from 9.57 percent in DeSoto to 0.14 percent in Citrus, Putnam, Seminole, and Sumter Counties.

Table 11. Citrus industry employment and value added contributions by Florida county and commercial citrus production area, 2020-21.

Production	Total Employment Contributions	Citrus Total Employment Contributions as a	Total Value Added Contributions	Citrus Total Value Added Contributions as
Area/County	(Jobs)	Share of Employment ¹	(M\$)	a Share of Value Added ¹
Central	5,254	1.04%	432.81	1.13%
Highlands	1,279	3.36%	75.46	2.98%
Osceola	392	0.25%	26.14	0.26%
Polk	3,582	1.14%	331.21	1.29%
Western	6,732	0.33%	620.71	0.32%
Pinellas	910	0.15%	79.04	0.15%
DeSoto	1,367	9.57%	86.77	9.15%
Hardee	993	9.33%	61.95	7.94%
Hillsborough	1,563	0.16%	158.00	0.15%
Manatee	1,491	0.76%	202.03	1.34%
Sarasota	408	0.16%	32.92	0.16%
Southern	9,637	0.20%	860.21	0.20%
Okeechobee	58	0.36%	4.57	0.40%
Charlotte	288	0.39%	22.50	0.44%
Glades	79	2.07%	6.49	2.10%
Lee	674	0.17%	55.13	0.17%

¹Due to the potential for COVID-19 to have significantly impacted data for 2020, we use IMPLAN 2019 Data for Florida.

(Continued on next page)

Table 11 (Continued). Citrus industry employment and value added contributions by Florida county and commercial citrus production area, 2020-21.

	Total Fundation	Citrus Total	Tatal Value Added	
Production	Contributions	Contributions as a	Contributions	Added Contributions as
Area/County	(Jobs)	Share of Employment ¹	(M\$)	a Share of Value Added ¹
Hendry	962	4.72%	77.56	6.46%
Collier	738	0.32%	62.30	0.31%
Broward	2,052	0.16%	192.55	0.17%
Monroe	93	0.15%	7.23	0.14%
Miami-Dade	3,162	0.17%	291.76	0.17%
Palm Beach	1,532	0.16%	140.13	0.16%
Indian River District	2,591	0.42%	228.36	0.45%
Brevard	447	0.15%	38.49	0.14%
Indian River	506	0.62%	38.76	0.61%
Martin	153	0.15%	12.64	0.17%
St. Lucie	1,484	1.14%	138.47	1.51%
Northern	5,158	0.22%	428.21	0.22%
Citrus	68	0.14%	5.27	0.14%
Hernando	102	0.15%	6.15	0.14%
Lake	1,165	0.79%	89.65	0.90%
Marion	455	0.30%	37.00	0.35%
Orange	2,000	0.17%	178.27	0.17%
Pasco	275	0.15%	19.34	0.14%
Putnam	34	0.14%	2.86	0.14%
Sumter	62	0.14%	5.09	0.13%
Seminole	410	0.14%	35.61	0.14%
Volusia	587	0.23%	48.97	0.27%
Rest of Florida	3,169	0.15%	270.96	0.15%
Total all areas	32,542		2,841.26	

Note: Values in 2021 dollars. Employment includes fulltime and part-time jobs. Numbers might not sum due to rounding. Source: IMPLAN model and 2019 data for Florida (IMPLAN Group LLC).





Figure 6. Employment contributions of the citrus industry as a share of total employment in Florida counties in 2020.

Source: IMPLAN model and 2019 data for Florida and ArcGIS software.

Note: County-level values for employment contributions within the Rest of Florida region are not displayed.



Figure 7. Value added contributions of the citrus industry as a share of total value added in Florida counties in 2020. Source: IMPLAN model and 2019 data for Florida and ArcGIS software. Note: County-level values for value added contributions within the Rest of Florida region are not displayed.

Comparison of Economic Contributions in 2018-19, 2019-20, and 2020-21

Results for the present study of the Florida citrus industry in the 2020-21 marketing year were compared to previous studies for 2018-19 (Court et al., 2020) and for 2019-20 (Court et al., 2021) to analyze trends within the industry. It is important to highlight that those results from 2018-19 were produced using a former version of IMPLAN with a different sectoral disaggregation, which partially explains the change in the economic contributions associated with citrus packinghouse activity. In addition, results for monetary measures from the previous studies were adjusted to be comparable with the present study by expressing all results in 2021 dollars. Note that IMPLAN Group LLC uses industryspecific deflators to adjust dollar values rather than a broad index such as the Producer Price Index.

Comparing the overall economic contributions for all citrus industry activities in 2018-19 to those of 2020-21, employment decreased by 13.1 percent, labor income decreased by 2.5 percent, value added increased by 1.2 percent, and industry output increased by 3.1 percent, in constant dollar terms. Overall economic contributions for all citrus industry activities in 2019-20 compared to those of 2020-21 suggest that employment increased by 0.2 percent, labor income increased by 5.8 percent, value added decreased by 3.4 percent, and industry output increased by 2.8 percent, in constant dollar terms (Table 12).

Figures 8 and 9 present a comparison of the total employment and total output contributions of the Florida citrus industry for the three most recent marketing seasons for growers, processors, and packinghouses. Between 2019-20 and 2020-21, employment contributions for growers and packinghouses decreased by 18.5 and 14.3 percent respectively, while processor employment contributions increased by 21.0 percent. On the other hand, total output contributions decreased by 18.1 percent for growers, increased by 11.2 percent for processors, and decreased by 14.6 for packinghouses.



Figure 8. Comparison of total employment contributions of the Florida citrus industry in marketing years 2018-19, 2019-20, and 2020-21 for growers, processors, and packinghouses.

Source: IMPLAN model and 2019 data for Florida (IMPLAN Group LLC).



marketing years 2018-19, 2019-20, and 2020-21 for growers, processors, and packinghouses.

Source: IMPLAN model and 2019 data for Florida (IMPLAN Group LLC).

Table 12. Comparison of economic contributions of the Florida citrus industry in marketing years 2020-21, 2019-20, and 2018-19.

Citrus Marketing Year	Employment (Jobs)	Labor Income (M\$)	Value Added (M\$)	Industry Output (M\$)
2020-21	32,542	\$1,605	\$2,841	\$6,935
2019-20	32,481	\$1,518	\$2,748	\$6,745
2018-19	37,431	\$1,647	\$2,808	\$6,727
Percent change 2018-19 to 2020-21	-13.1%	-2.5%	1.2%	3.1%
Percent change 2019-20 to 2020-21	0.2%	5.8%	3.4%	2.8%

Note: Values in 2021 dollars. Results for 2018-19 and 2019-20 were updated from the original studies by Court et al., (2020) and Court et al., (2021). Source: IMPLAN model and 2019 data for Florida (IMPLAN Group LLC).



CONCLUSIONS

Production acreage, yields, and volumes in the Florida citrus industry have generally declined over the past 19 years, due to land conversion and the deleterious effects of citrus canker and citrus greening disease; however, the Florida citrus industry remains a significant contributor to Florida's economy. This economic contribution analysis estimated total industry output contributions of \$6.935 billion in 2020-21, including \$1.425 billion from citrus fruit production, \$5.334 billion from citrus juice manufacturing, and \$177 million for fresh citrus marketing. The citrus industry supported a total of 32,542 fulltime and part-time jobs in the state. Total value added contributions, estimated at \$2.841 billion, represent the industry's contribution to Gross State Product. Labor income contributions amounted to \$1.606 billion, representing earnings by employees and business owners. Total state and local tax contributions of the Florida citrus industry were \$151 million.

The Southern commercial citrus production area had the highest share of citrus industry employment contributions (9,637 jobs), followed by Western (6,732 jobs), Central (5,254), Northern (5,158 jobs), Indian River District (2,591 jobs), and the rest of Florida (3,169 jobs). Comparing the overall economic contributions of the Florida citrus industry in 2019-20 with the 2020-21 period using updated data and methods, employment increased by 0.2 percent, labor income increased by 5.8 percent, value added increased by

3.4 percent, and industry output increased by 2.8 percent in constant dollar terms.

Although the economic contributions were largest in the agriculture (fruit production) and manufacturing (juice processing) sectors, the overall citrus industry also has significant contributions in many other sectors due to supply chain linkages and household spending of income that are captured by the indirect and induced multiplier effects in the regional economic model.

The economic contribution estimates reported here were based on published values and official industry statistics; however, there are certain limitations of the analysis that should be borne in mind when interpreting the results. First, there was a lack of detailed information available on production input purchases for citrus groves, citrus juice manufacturing plants, and packinghouse operations, therefore aggregated industry representations are used to approximate input purchasing patterns. The existence of such information would enable a more precise analysis of the contributions of these activities. Finally, industry statistics on citrus nurseries, which are also an integral component of the broader citrus industry, were not available and as such are only included within the estimates of indirect purchases, to the extent that the aggregated representation of the fruit production industry captures these purchases.

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2020/21 ECONOMIC CONTRIBUTIONS OF

<u>Contributing \$6.94 billion in industry output to Florida's economy</u>



CITRUS INDUSTRY DIRECT CONTRIBUTIONS

INDUSTRY OUTPUT

citrus growers, processors, and packinghouses \$3.91 billion

(full time and part-time) EMPLOYMENT .3,844 jobs

LABOR INCOME \$628 million

in income for Florida families



Citrus industry activities support additional economic activity throughout Florida's economy.



CITRUS INDUSTRY TOTAL CONTRIBUTIONS

Industry Output

56%









Value Added

43%









43%

Employment

ect+ ind

billion

57%

61%

billion \$2.84

Florida State & Local Tax Contributions

in state and local taxes that fund public services **\$151 MILLION DOLLARS**

Citrus

the Florida Citrus Industry in 2020-21 Infographic". Economic Impact Analysis Cruz, Julio; Ferreira, João-Pedro; Court, Christa. "Economic Contributions of Program, Food and Resource Economics Department, Institute of Food and CITATION



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APPENDIX A: GLOSSARY OF ECONOMIC TERMS

Contribution (economic) represents the gross value of economic activity associated with an industry, event, or policy in an existing regional economy.

Employee compensation is comprised of wages, salaries, commissions, and benefits such as health and life insurance, retirement, and other forms of cash or non-cash compensation.

Employment is a measure of the number of jobs involved, including fulltime, part-time, and seasonal positions. It is not a measure of fulltime equivalents (FTEs).

Exports are sales of goods to customers outside the region in which they are produced, which represents a net inflow of money to the region. This also applies to sales of services to customers visiting from other regions.

Final Demand represents sales to final consumers, including households, governments, and exports from the region.

Gross Regional Product (GRP) is a measure of total economic activity in a region, or total income generated by all goods and services. It represents the sum of total value added by all industries in that region and is equivalent to Gross Domestic Product (GDP) for the nation.

IMPLAN is a computer-based input-output modeling system that enables users to create regional economic models and multipliers for any region consisting of one or more counties or states in the United States. The current version of the IMPLAN software, IMPLAN Cloud, accounts for commodity production and consumption for 536 industry sectors, 10 household income levels, taxes to local/state. and federal governments, capital investment, imports and exports, transfer payments, and business inventories. Regional datasets for individual counties or states are purchased separately.

Imports are purchases of goods and services originating outside of the region of analysis.

Income is the money earned within the region from production and sales. Total income includes labor income such as wages, salaries, employee benefits, and business proprietor income, plus other property income.

Tax on Production and Imports are taxes paid to governments by individuals or businesses for property, excise and sales taxes, but do not include income taxes.

Input-Output (I-O) model and Social Accounting Matrix (SAM) is a representation of the transactions between industry sectors within a regional economy that captures what each sector purchases from every other sector to produce its output of goods or services. Using such a model, flows of economic activity associated with any change in spending might be traced backwards through the supply chain.

Local refers to goods and services that are sourced from within the region, which might be defined as a county, multi-county cluster, or state. Non-local refers to economic activity originating outside the region.

Margins represent the portion of the purchaser price accruing to the retailer, wholesaler, and producer/ manufacturer, in the supply chain. Typically, only the retail margins of many goods purchased by consumers accrue to the local region, as the wholesaler, shipper, and manufacturer often lie outside the local area.

Multipliers capture the total effects, both direct and secondary, in a given region, generally as a ratio of the total economic contributions in the region relative to the direct economic contributions. Multipliers are derived from an input-output model of the regional economy. Multipliers might be expressed as ratios of sales, income, or employment, or as ratios of total income or employment changes relative to direct sales. Multipliers express the degree of interdependency between sectors in a region's economy and therefore vary considerably across regions and sectors.

Other property income represents income received from investments, such as corporate dividends, royalties, property rentals, or interest on loans.

Output is the dollar value of a good or service produced or sold and is equivalent to sales revenues plus changes in business inventories.

Producer prices are the prices paid for goods at the factory or point of production. For manufactured goods the purchaser price equals the producer price plus a retail margin, a wholesale margin, and a transportation margin. For services, the producer and purchaser prices are equivalent.

Proprietor income is income received by non-incorporated private business owners or self-employed individuals.

Purchaser prices are the prices paid by the final consumer of a good or service.

Region or **Regional Economy** is the geographic area and the economic activity it contains for which contributions are estimated. It might consist of an individual county, an aggregation of several counties, a state, or an aggregation of states. These aggregations are sometimes defined on the basis of worker commuting patterns.

Sector is an individual industry or group of industries that produce similar products or services or have similar production processes. Sectors are classified according to the North American Industrial Classification System (NAICS).

Value Added is a broad measure of income, representing the sum of employee compensation, proprietor income, other property income, indirect business taxes and capital consumption (depreciation), that is comparable to Gross Domestic Product. Value added is a commonly used measure of the contribution an industry makes to a regional economy because it avoids double counting of intermediate sales.





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On the cover:Oranges on a citrus tree.

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