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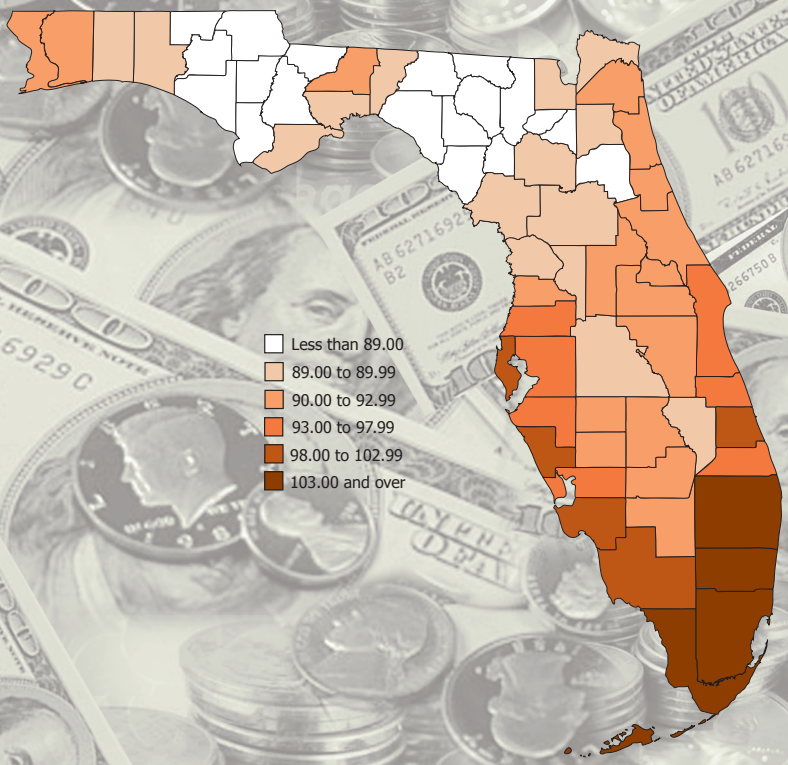
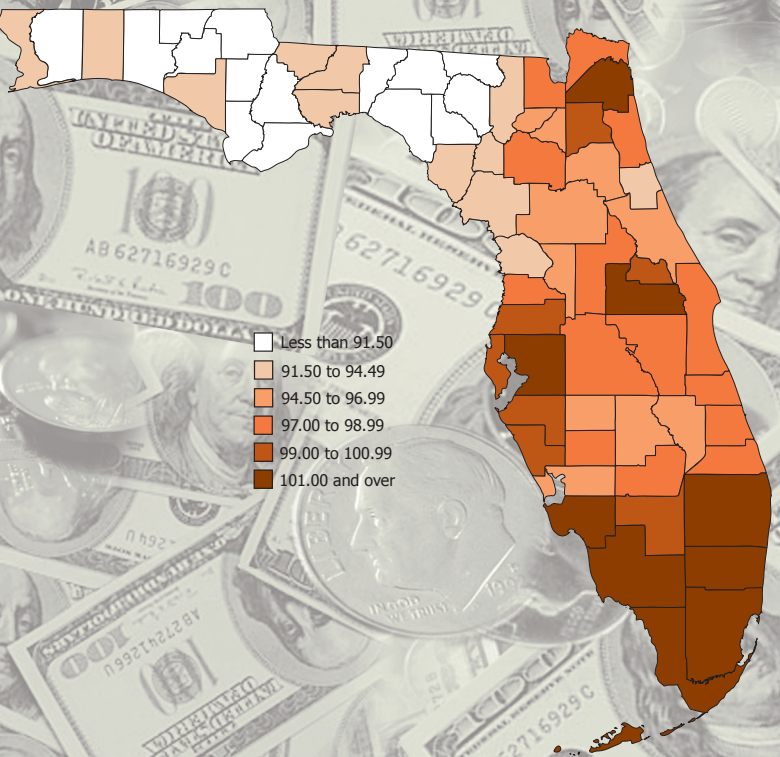
2006 Florida County Retail Price and Wage Indices



2006 Florida County Retail Price Index



2006 Florida County Wage Index

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2006 Florida County Retail Price and Wage Indices

This report presents and discusses the 2006 editions of the Florida County Retail Price Index (FCRPI) and the Florida County Wage Index (FCWI), produced by the Bureau of Economic and Business Research (BEBR) at the University of Florida. In the narrowest sense, the FCRPI measures the relative expenditure required to purchase the same basket of goods and services purchased by the average Floridian in each of Florida's counties at a particular point in time, in this case August 2006. For example, from Table I on page 2, in Miami-Dade the basket of goods and services purchased by the average Floridian would cost 16.53 percent more than the state average, and 21.96 percent more than in Hillsborough (obtained by subtracting Hillsborough's FCRPI of 95.55 from Miami-Dade's 116.53 and dividing by 95.55). In a similarly narrow sense, the FCWI measures the relative wages paid to the typical worker performing an identical job across Florida's counties at a particular point in time. That is, the FCWI is an input price index for labor. For example, from Table II on page 3, a worker in Hillsborough County would earn on average 2.03 percent more than the state average for performing the same job, and 0.11 percent more than in Miami-Dade County.

Each item priced for the FCRPI is placed in one of five major categories: food and beverages, medical care, housing, other goods and services, and transportation. Figure I, on page 3, shows that approximately 16 cents of the typical consumer's dollar was spent on food and beverages, 47 cents on housing and related items, 17 cents on transportation, 5 cents on medical care, and 15 cents on other goods and services. Table III on page 4 gives more detail on the categories and their items, and Table IV (pages 5 and 6) presents the sub-indices for the major categories, each relative to a population-weighted state average of 100, illustrating how the broad categories of expenditure in a county differ from the state average. For example, the cost of food and beverages in Alachua County is estimated to be less than one percent higher than the statewide average, but housing is estimated to cost about 20 percent less. Comparisons across counties are also possible within each category. For example, Alachua's medical care index is 87.23, while Broward's is 106.94, which means that items in the medical care category are on average 18.43 more expensive in Broward County than in Alachua County.

The following sections elaborate on the points discussed above. The first discusses the 2006 results, and the second presents, in non-technical terms, the theory of spatial cost-of-living indices and demonstrates their uses in general and in the specific context of Florida. Last are methodological details about the construction and computation of the FCRPI and FCWI.

The 2006 Results

Tables I and II respectively present the retail price and wage indices for 2006, and each is constructed so that the population-weighted average is 100. Hillsborough County, which closely resembles the state in most demographic characteristics, is very near the state average for both the FCWI the FCRPI, having values of 102.30 and 95.55 respectively. The FCRPI map on the upper-left of the cover shows that the highest values of the FCRPI are in the southern, more populous part of the state. This is to be expected, since land that is within easy reach of employment and shopping centers becomes very scarce, and thus very expensive, when population pressures reach the high levels seen in south Florida. While the decade-long housing market boom put upward pressure on housing prices throughout the state, undeveloped accessible land has provided relief from this pressure in most counties. Areas where this relief valve is blocked, by high population or more direct restrictions on the uses of otherwise developable land, have experienced faster increases in the cost of living than the rest of the state.

This may be seen in the four counties having an FCRPI above 106.00, Broward, Miami-Dade, Monroe, and Palm Beach. These counties represent 30.3 percent of the state's population but only 11.4 percent of its total land mass. Furthermore, over 2.4 million acres of the land in these counties are national park land, and therefore not available for development. Compare this to the northern portion of the state, which had the lowest FCRPI values. Of the 46 counties with FCRPI values below 92.00, 39 are north of Tampa; together they comprise only 18.88 percent of the state's population but nearly half its landmass. As a direct result of the way the retail price index is constructed, the "average" Floridian by definition experiences a retail price level of 100. The median Floridian, however, resides in Hillsborough County, which has a retail price index of 95.55 and is ranked 13. That is to say that slightly less than half of all Floridians live in counties with retail prices higher than those in Hillsborough, slightly less than half live in less expensive counties, and the rest live in Hillsborough. The distribution of the FCRPI is thus quite asymmetric. The median county, in contrast, is Okeechobee, with an FCRPI of 89.99 and a rank of 34.

The FCWI map on the cover (lower-right) shows that the highest values of the FCWI also tend to occur in the southern portion of the state, although the pattern is much less pronounced than in the case of the FCRPI. Again, it is to be expected that the southern part of the state would have relatively high values of the FCWI, since workers must be compensated for the much higher costs of housing and other goods and services in that portion of the state. It is also to be expected that this pattern would be less pronounced, since factors other than the costs of housing and other goods and services affect the FCWI. The distribution of the FCWI is much more symmetric: thirteen counties, containing 61 percent of the state's population, have an FCWI above 100. The median Floridian lives in Orange County, at 100.91, and Hardee is the median county, at 95.96.

Spatial Cost of Living Indices

While the FCRPI is a retail price index and the FCWI is an input price index (for labor inputs), in a broader sense each index is a

TABLE I: FCRPI		
County	Index	Rank
Alachua	89.59	39
Baker	89.47	41
Bay	88.05	52
Bradford	87.88	55
Brevard	93.48	15
Broward	114.79	03
Calhoun	86.24	65
Charlotte	94.83	14
Citrus	89.86	36
Clay	89.35	43
Collier	99.47	06
Columbia	87.63	58
DeSoto	90.91	25
Dixie	87.42	61
Duval	92.06	21
Escambia	90.57	27
Flagler	90.35	31
Franklin	89.67	38
Gadsden	88.93	49
Gilchrist	88.02	53
Glades	91.98	22
Gulf	87.47	60
Hamilton	87.72	57
Hardee	90.25	32
Hendry	92.92	17
Hernando	91.20	24
Highlands	90.47	28
Hillsborough	95.55	13
Holmes	86.51	64
Indian River	95.73	12
Jackson	86.20	66
Jefferson	89.17	44
Lafayette	87.74	56
Lake	91.43	23
Lee	99.42	07
Leon	90.46	29
Levy	89.13	48
Liberty	86.93	62
Madison	88.15	51
Manatee	96.60	11
Marion	89.15	45
Martin	97.81	10
Miami-Dade	116.53	02
Monroe	139.92	01
Nassau	89.37	42
Okaloosa	89.68	37
Okeechobee	89.99	34
Orange	92.38	19
Osceola	90.01	33
Palm Beach	110.62	04
Pasco	93.28	16
Pinellas	101.24	05
Polk	89.90	35
Putnam	87.60	59
St. Johns	90.69	26
St. Lucie	98.97	08
Santa Rosa	90.39	30
Sarasota	98.29	09
Seminole	92.35	20
Sumter	89.14	46
Suwannee	88.48	50
Taylor	88.02	53
Union	86.80	63
Volusia	92.70	18
Wakulla	89.14	46
Walton	89.55	40
Washington	85.76	67

spatial cost-of-living index (COLI). Spatial COLIs measure the relative income needed to maintain a given standard of living across geographic locations, or, the relative income needed to make a worker indifferent between living and working in alternative geographic labor markets. The FCRPI is a conditional spatial COLI—it gives the relative income needed to maintain a given standard of living on the condition that all non-market factors affecting the standard of living remain the same from location to location. The FCRPI uses basically the same methodology used by the U.S. Bureau of Labor Statistics (BLS) to construct the Consumer Price Index (CPI).

It may be reasonable to assume non-market factors that affect the standard of living are roughly constant from one year to the next at a given location, at least compared to changes in the prices of goods and services. This assumption underlies the use of the CPI as a temporal COLI to index Social Security payments for inflation. However, it is not reasonable to assume that those factors are constant from one location to the next at a particular time.[1] For example, the climate, the range of available cultural and recreational opportunities, and the mix of taxes and public services are all factors that affect living standards but are not reflected in a price index of pecuniary consumption alone. However, in competitive labor markets, workers will relocate until the wages offered in one labor market are just sufficient to compensate for differences in both market prices and non-market factors that affect standards of living. Therefore, the FCWI is an estimate of an unconditional spatial COLI.

The two indices are thus suited to different uses. If one wants to know the relative cost of purchasing a given market basket of goods and services across the counties of Florida, the FCRPI should be used. If one wants to know how much it will cost on average to hire equally qualified personnel across counties, the FCWI should be used. For example, suppose an accountant is considering relocating from Tampa to Pensacola in response to a job offer. If she were fully familiar with the amenities offered by both areas but wanted to compare the purchasing power of the salary she had been offered in Pensacola to her current salary in Tampa, she would want the FCRPI, indicating a given salary would go 5.2 percent further in Pensacola. If, however, the managers of an accounting firm were considering relocating their operation to Pensacola from Tampa and wanted to know the average relative cost of hiring personnel, they would want the FCWI, indicating it would take approximately 9.76 percent lower wages to attract equivalent personnel.[2]

About the FCRPI

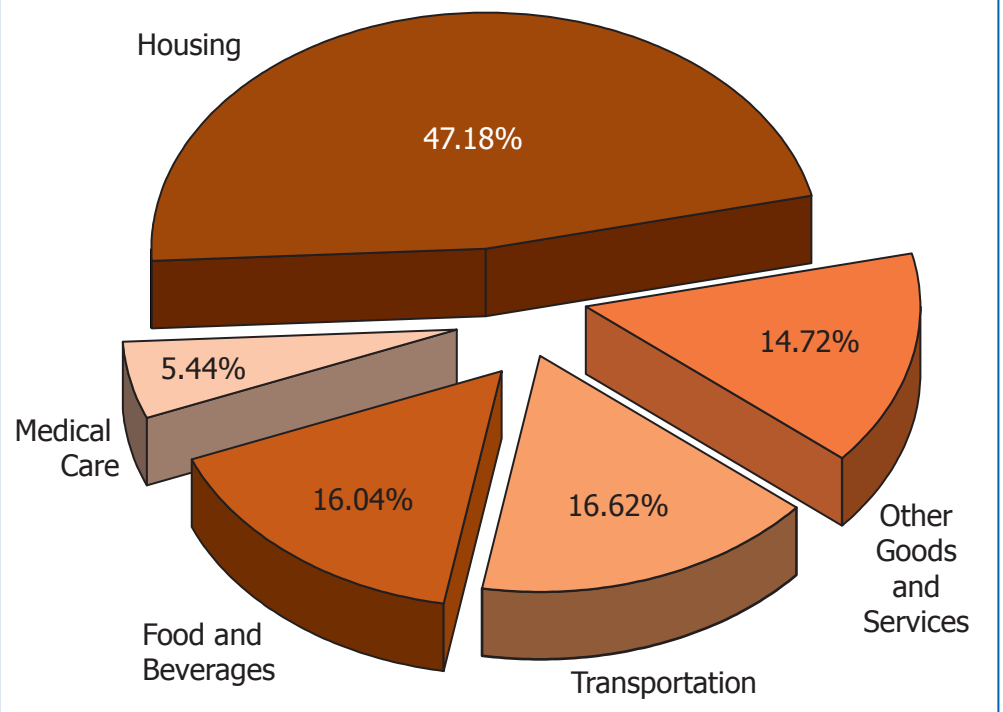
The items in the market basket of goods and services upon which the FCRPI is based are chosen to represent the expenditure categories used by the U.S. Bureau of Labor Statistics (BLS) to weight an item's relative importance in the Consumer Price Index (CPI). The selected items are used by most households, are widely available for purchase, and vary little in quality from county to county. To increase the accuracy of the index, items are more likely to be selected if their prices vary strongly from county to county, but that does not imply that such items are weighted more heavily.

Some of the prices in the five major FCRPI categories are obtained through data available from state agencies. Other prices are gathered from a telephone survey of retail outlets and service providers covering all 67 counties. The survey requires the cooperation of the merchants, who are told its purpose. Each year a very

[1]Neither the FCRPI nor the FCWI, as purely spatial indices, measures inflation from year to year. We therefore caution that they should not be used for temporal comparison.

[2]The FCRPI and much of the FCWI are computed in BEBR's annual calculation of the Florida Price Level Index (FPLI), done for the Florida Department of Education. Through 2002, the FPLI was based on essentially the same methodology as the FCRPI, but it was changed in 2003 to one nearly identical to that of the FCWI. This was done to bring the FPLI's methodology closer to its intended use by the state as a labor-input price index for teachers. For more detail about the relationship between and histories of these indices, see the 2005 edition of this report or BEBR's March 2004 report to the Florida Legislature, "Research on the Florida Education Finance Program."

FIGURE I: Composition of Consumer Expenditures in the FCRPI



high proportion of the sampled merchants are gracious enough to participate. The information collected is held in strict confidence.

For most items priced in retail outlets, prices are obtained at a minimum of three outlets per county. For many items accounting for a certain percentage of the "typical" consumer's spending according to the BLS, no prices are gathered. Some of these (postage, for example) do not vary from county to county. For others, prices may vary slightly across counties, but statistical analysis has determined that the process of survey-sampling would serve more to introduce measurement noise across counties than to reveal genuine differences in the overall price level. Such items are treated as constants throughout the state, which at once reduces the cost of the index and improves its accuracy.

The collected prices are averaged by county, and these averages are divided by the state population-weighted average prices to produce relative prices. The relative price for each item is then weighted by its appropriate weight.[3] The weighted relative prices are added together for each county and the resulting totals are then multiplied by 100, producing an index value for each county such that the population-weighted statewide average of the county indices is 100.00.

About the FCWI

The calculation of the FCWI is based on both the results of the FCRPI and labor market data, consisting of average wages for over 700 occupations across Florida's 67 counties. While data for each occupation are not available for all 67 counties, many observations are available in even the smallest county, whose sample consisted

[3]These weights, detailed by item and category in Table III on page 4, represent the fraction of the "typical" consumer's budget spent on each item. We take the CPI weights for Miami, provided by the BLS, and modify them slightly to be more appropriate for a conditional spatial COLI.

TABLE II: FCWI

County	Index	Rank
Alachua	97.57	26
Baker	97.23	29
Bay	92.74	48
Bradford	96.66	31
Brevard	98.11	23
Broward	103.62	03
Calhoun	88.66	63
Charlotte	96.35	32
Citrus	94.27	43
Clay	99.28	16
Collier	106.50	01
Columbia	93.63	47
DeSoto	97.12	30
Dixie	92.21	49
Duval	101.63	08
Escambia	92.07	50
Flagler	94.19	44
Franklin	87.65	67
Gadsden	91.71	52
Gilchrist	94.34	42
Glades	98.31	21
Gulf	89.34	59
Hamilton	91.30	56
Hardee	95.96	34
Hendry	100.04	13
Hernando	97.35	28
Highlands	94.61	39
Hillsborough	102.03	04
Holmes	88.11	66
Indian River	98.04	24
Jackson	88.65	64
Jefferson	91.46	53
Lafayette	90.79	58
Lake	97.61	25
Lee	101.76	06
Leon	94.19	44
Levy	94.19	44
Liberty	89.27	60
Madison	88.35	65
Manatee	100.22	12
Marion	94.59	40
Martin	98.99	17
Miami-Dade	101.92	05
Monroe	101.70	07
Nassau	98.87	18
Okaloosa	94.35	41
Okeechobee	96.31	33
Orange	101.10	09
Osceola	98.76	20
Palm Beach	104.61	02
Pasco	99.30	15
Pinellas	100.67	10
Polk	97.38	27
Putnam	95.49	36
St. Johns	98.22	22
St. Lucie	98.82	19
Santa Rosa	91.45	54
Sarasota	100.45	11
Seminole	99.86	14
Sumter	95.43	37
Suwannee	91.23	57
Taylor	88.94	62
Union	95.58	35
Volusia	94.64	38
Wakulla	91.77	51
Walton	91.42	55
Washington	89.11	61

of 111 observations. The Labor Market for Information division of Florida's Agency Workforce Innovation collects these data as part of the BLS Occupational Employment Statistics (OES) survey.

In calculating the FCWI, BEBR first uses statistical techniques to estimate a raw index of wages for comparable labor across counties directly from the wage data. Some types of jobs are centralized within urban areas, some are decentralized, and some fall in between. Since land, and thus housing, is more expensive in more central locations, workers in occupations that are concentrated in central locations must either pay a high price for housing or undertake a long commute. Workers in occupations that are less concentrated in central areas have the option of living where housing is cheaper without having a long commute. Therefore, variation in the pecuniary price level is likely to have larger effects on the wages of workers in high-centrality occupations (more concentrated in central locations), but smaller effects on the wages of workers in low-centrality occupations (less concentrated in central locations). Accordingly, estimation of the raw index values controls for interactions between the average centrality of each occupation and the FCRPI in each county.

Second, since the quality of the occupational wage data may vary with the size of the labor market in a county, the raw index is statistically and geographically smoothed. For the statistical smoothing, we construct a model relating the raw index to the FCRPI and other county-level data. This model is used to generate a "predicted" value for the raw index. A weighted average of the raw and predicted values is then calculated, where the weights in each county are chosen to maximize the accuracy of the index, given the reliability of each county's raw and predicted indices. The second type of smoothing is geographic in nature. Workers who live in suburban or rural counties surrounding larger, urban counties will commute to the larger county for work if wages in the larger area are sufficiently higher to more than compensate for any extra commute time. Further, given the design of the OES survey, we expect the index to be most accurate in metropolitan counties (counties with cities that lend their names to one of Florida's metropolitan statistical areas; e.g., Leon County, which is in the Tallahassee MSA). Therefore, we constrain the index in non-metropolitan counties to be no less than the commute-time-adjusted wage index of nearby metropolitan counties.

TABLE III
FCRPI Item and Category Weights

Item by Category	Weight
Food and Beverages	16.040
French Fries	1.114
Hamburger	1.223
Served Coffee	1.132
Served Soft Drink	0.979
Items assumed not to vary in price	11.592
Medical Care	5.442
Extraction	0.341
Eye Examination	0.122
Filling	0.341
Health Insurance	0.327
Healthcare Cost Index	3.868
Items assumed not to vary in price	0.442
Housing	47.182
Air Cond. Seasonal Inspection	0.732
Apartment Rent Index	7.219
Electricity, 1000 KWh	4.917
Homeowner Cost Index	24.940
Renter's Insurance	0.554
Items assumed not to vary in price	8.819
Other Goods and Services	14.721
Bowling	0.822
Day Care Service	2.616
Dry Cleaning (Man's Suit)	0.268
Dry Cleaning (Woman's Dress)	0.268
Man's Haircut	0.437
Movie Rental	0.822
Safety Deposit Box Fee	0.186
Woman's Haircut	0.437
Items assumed not to vary in price	8.863
Transportation	16.616
Auto Insurance	2.937
Gasoline, Unleaded, Self	4.513
Lube-Oil-Filter	1.092
Items assumed not to vary in price	8.074

TABLE IV
FCRPI Category Indices

County	FCRPI	Food & Beverages	Medical Care	Housing	Other Goods & Services	Transpor-tation
Alachua	89.59	100.42	87.23	80.02	99.19	98.57
Baker	89.47	99.81	94.03	80.14	95.31	99.30
Bay	88.05	103.13	92.38	78.48	93.76	94.20
Bradford	87.88	100.13	88.59	78.14	95.46	96.75
Brevard	93.48	100.48	96.15	90.25	92.89	95.56
Broward	114.79	99.38	106.94	129.76	99.35	103.38
Calhoun	86.24	101.32	85.59	75.67	92.71	96.20
Charlotte	94.83	100.67	97.76	90.23	100.27	96.48
Citrus	89.86	101.47	90.44	82.57	93.37	96.03
Clay	89.35	101.13	95.01	79.20	99.72	95.79
Collier	99.47	99.32	97.24	97.76	104.11	101.11
Columbia	87.63	100.16	89.16	79.49	92.89	93.50
DeSoto	90.91	100.47	105.68	81.26	97.77	98.19
Dixie	87.42	98.04	91.81	79.83	90.61	94.46
Duval	92.06	100.77	95.50	84.74	99.49	96.71
Escambia	90.57	99.97	93.31	82.88	95.71	97.92
Flagler	90.35	102.36	94.75	81.98	96.95	95.22
Franklin	89.67	102.43	110.61	78.44	93.71	98.81
Gadsden	88.93	104.13	93.80	77.82	96.10	97.84
Gilchrist	88.02	100.63	94.92	78.79	92.67	95.69
Glades	91.98	102.62	94.32	84.38	95.10	99.76
Gulf	87.47	102.99	89.46	77.52	90.56	97.32
Hamilton	87.72	99.89	86.05	79.51	91.37	96.56
Hardee	90.25	100.41	95.40	82.22	93.48	98.71
Hendry	92.92	99.12	91.91	87.57	96.17	99.55
Hernando	91.20	101.74	92.86	84.13	94.65	97.50
Highlands	90.47	100.96	89.03	82.86	95.90	97.60
Hillsborough	95.55	100.56	96.59	89.07	101.01	103.94
Holmes	86.51	100.50	83.41	75.33	93.16	99.86
Indian River	95.73	100.55	94.82	92.03	100.00	98.09
Jackson	86.20	101.92	85.49	74.60	92.46	98.63
Jefferson	89.17	100.43	90.92	79.79	96.71	97.67
Lafayette	87.74	100.93	89.70	79.04	90.31	96.77
Lake	91.43	100.71	95.23	84.75	96.12	96.07

TABLE IV
FCRPI Category Indices (Continued)

County	FCRPI	Food & Beverages	Medical Care	Housing	Other Goods & Services	Transpor-tation
Lee	99.42	98.63	98.15	99.26	101.82	98.91
Leon	90.46	102.17	96.50	80.92	99.34	96.41
Levy	89.13	103.57	87.97	80.35	92.87	97.20
Liberty	86.93	102.20	85.45	76.74	92.05	97.07
Madison	88.15	103.84	85.65	77.01	93.50	100.72
Manatee	96.60	101.22	96.50	93.64	101.33	96.36
Marion	89.15	99.67	92.31	81.35	95.80	94.21
Martin	97.81	102.14	100.89	93.80	105.82	96.89
Miami-Dade	116.53	99.50	119.24	130.12	101.07	107.17
Monroe	139.92	102.70	101.24	182.14	102.90	101.45
Nassau	89.37	100.02	95.18	80.21	97.51	96.01
Okaloosa	89.68	101.85	86.54	80.74	97.36	97.56
Okeechobee	89.99	100.69	106.80	80.59	95.67	95.83
Orange	92.38	99.73	96.83	85.10	99.65	98.02
Osceola	90.01	99.47	95.55	81.29	98.58	96.24
Palm Beach	110.62	98.76	100.93	119.30	107.18	103.61
Pasco	93.28	99.27	95.80	88.77	97.95	95.32
Pinellas	101.24	99.25	94.50	102.43	105.29	98.43
Polk	89.90	100.80	92.99	80.70	97.48	97.75
Putnam	87.60	99.83	86.15	79.07	93.47	95.30
St. Johns	90.69	99.19	98.14	80.70	101.90	98.51
St. Lucie	98.97	100.17	103.14	98.88	97.91	97.63
Santa Rosa	90.39	99.52	91.74	82.89	96.62	96.90
Sarasota	98.29	100.90	97.82	95.94	102.53	98.83
Seminole	92.35	99.44	100.70	84.23	102.60	96.75
Sumter	89.14	98.95	89.20	81.09	95.92	96.53
Suwannee	88.48	100.72	90.95	79.46	91.90	98.45
Taylor	88.02	100.97	96.15	77.97	92.51	97.39
Union	86.80	100.78	82.88	78.19	91.32	95.07
Volusia	92.70	100.15	94.26	87.58	97.31	95.50
Wakulla	89.14	99.57	97.28	79.44	95.57	98.29
Walton	89.55	99.01	91.87	81.22	97.01	96.71
Washington	85.76	100.99	84.14	74.95	93.89	95.08