



COST OF LIVING INDEX OF MARYLAND AND LOCAL MARYLAND JURISDICTIONS

Research and Information Unit
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The Maryland Department of Commerce (Commerce), formerly the Department of Business and Economic Development, has conducted several cost of living index (COLI) studies for Maryland counties, most recently in 2019. The current analysis updates the previous studies with newer data, and in some cases different data which was not previously available. Due to a revised methodology, the current study is not directly comparable with the previous indexes. The primary objective of this analysis is to determine a cost of living for each of Maryland's 24 major jurisdictions (23 counties and the independent City of Baltimore) that can be compared to the state and national averages

Methodology

This study is loosely based on Moody's "U.S. Metro Area Cost of Living Index," which uses the Bureau of Labor Statistics' (BLS) Consumer Expenditure (CE) Survey to determine weights for various components of living costs for "consumer units." While not having the same definition as a household, a consumer unit can be generally compared to a household. The U.S. Census Bureau, for the BLS, "collects information from the Nation's households and families on their buying habits (expenditures), income, and household characteristics."¹ The BLS then compiles the data by region, metropolitan area, and various socio-economic characteristics, providing information on spending behavior for U.S. households.

According to the BLS, "[t]he CE program makes no attempt to measure the cost of a standard bundle of goods and services, but instead provides actual expenditure levels of consumer units."² This differs from C2ER's quarterly "Cost of Living Index" and similar studies which index the cost of a specific basket of goods in different geographic areas. Using the Consumer Expenditure survey and applying weights to various expenditure categories captures not only price variation but also quantities demanded of cost-of-living components.

Previous Commerce studies used the "South" region in the "Region of residence" CE table as a basis for determining expenditure weights. While Maryland is part of the South region, this may not be the most appropriate proxy because the average income of a consumer unit in the South region is the lowest of the four regions (Northeast, Midwest, South, West), whereas Maryland has among the highest median household incomes in the nation. Therefore, the current analysis uses the Baltimore metropolitan area in the "Selected southern metropolitan statistical areas" CE table as a basis. This is appropriate because 47 percent of Maryland's population (2020) reside in the Baltimore metropolitan area. Because the metro area CE data does not contain the same level of detail as the regional CE tables, subcomponent weights from the South region CE are used in several instances.

Table 1 presents 2019-2020 (latest available) Consumer Expenditure Survey data for the Baltimore metropolitan area, with some subcomponent weights from the South region CE survey. Some subcomponents are omitted for simplicity.

¹ <https://www.bls.gov/cex/csxfaq.htm>

² *ibid*

Table 1.
Baltimore Metropolitan Area Consumer Expenditure Survey, 2019-2020
Selected Items

Expenditure category	Average annual expenditure	Percent of total (weight)*
Food	\$7,772	10.6%
Food at home	4,993	6.8%
Cereals and bakery products	698	0.9%
Meats, poultry, fish, and eggs	1,003	1.4%
Dairy products	466	0.6%
Fruits and vegetables	1,112	1.5%
Other food at home	1,713	2.3%
Food away from home	2,780	3.8%
Alcoholic beverages	542	0.7%
Housing	24,972	34.0%
Shelter	15,806	21.5%
Owned dwellings	10,005	13.6%
Rented dwellings	4,203	5.7%
Other lodging	1,598	2.2%
Utilities, fuels, and public services	4,203	5.7%
Household operations	1,901	2.6%
Household supplies	769	1.0%
Household furnishings and equipment	2,294	3.1%
Apparel and services	1,707	2.3%
Transportation	11,946	16.2%
Vehicle purchases (net outlay	5,764	7.8%
Gasoline, other fuels, and public services	1,844	2.5%
Other vehicle expenses	3,681	5.0%
Public and other transportation	745	1.0%
Healthcare	5,610	7.6%
Health insurance*	N/A	6.3%
Medical services*	N/A	1.4%
Drugs*	N/A	0.8%
Medical supplies*	N/A	0.3%
Entertainment	2,747	3.7%
Personal care products and services	832	1.1%
Reading	101	0.1%
Education	2,682	3.6%
Tobacco products and smoking supplies	281	0.4%
Miscellaneous	900	1.2%
Cash Contributions	1,811	2.5%
Personal insurance and pensions	11,626	15.8%
Life and other personal insurance	643	0.9%
Pensions and Social Security	10,983	14.9%

* Where the expenditures for the Baltimore metro are not available (NA), South region weights are used. Note percentages of the components may not equal the total for a component category due to difference in geography.

Note: Numbers may not add due to rounding.

Source: U.S. Bureau of Labor Statistics Consumer Expenditure Survey Tables 3024 and 3124, and Maryland Department of Commerce.

Following is a summary table of the weights used in the current analysis. The second category (Food etc.) combines components from several categories due to the similarity in the data used to estimate these expenditure.

Table 2.
Expenditure Category Weights

Expenditure category	Components	Weight
Housing	Shelter Utilities, fuels and public services Household operations	30.8%
Food, apparel and other goods and services	Food Alcoholic beverages Housekeeping supplies Household furnishings and equipment Apparel and services Entertainment Personal care products and services Tobacco products and smoking supplies	22.0%
Transportation	Gasoline and motor oil Maintenance and repairs Vehicle insurance Public and other transportation	16.2%
Healthcare	Health insurance Medical services Drugs Medical supplies	7.6%
Other	Components not listed above	23.3%
Total		100.0%

Note: Numbers may not add due to rounding.

Source: U.S. Bureau of Labor Statistics Consumer Expenditure Survey Tables 3024 and 3124, and Maryland Department of Commerce.

In previous Commerce studies, utilities, fuel and public services comprised a separate expenditure category. Because utility costs are included in the data used in this analysis for the housing component, there is no separate utility component (see Housing component below for details). Further, in previous Commerce analyses included healthcare as a separate component of the COLI. Because this has become a significant portion of consumer expenditures (currently seven and six tenths' percent in the Baltimore metropolitan area) we have attempted to estimate the expenditure differences for this component with current publicly available data.

Once weights are determined for the various components of spending, the goal is to find reputable sources of county-level cost data for goods and services that can be used to differentiate the cost of living between Maryland counties. While housing expenditures are, by definition, per household, most other costs have been converted to a household basis using average household size or number of vehicles per household. Expenditures, therefore, are influenced by such factors as average persons per household, average number of vehicles per household, typical housing stock, average homeownership rates, disposable income, age of householders, and other factors that describe the character of a particular locality.

Data timeframe

The data used in this analysis is from various sources and time periods, in all cases being the latest data available at the time of publication. No attempt was made to inflate the data over time except in the case of vehicle insurance costs in which two different sources were used in the same index component, so data from one source was inflated to match the other.

Housing component

Housing costs in this analysis are comprised of the cost of shelter, both owned and rented, as well as utilities and household operations. While previous Commerce COLI studies used Maryland Association of Realtors median sale prices for homes by county combined with mortgage rates and down payment information, the current analysis uses Census American Community Survey (ACS) data for the 5-year period 2016-2020. One-year ACS data could not be used because Kent County is not included due to its population not meeting the survey minimum. ACS data includes “Selected Monthly Owner Costs” (SMOC) for owner occupied housing units, both with and without a mortgage. SMOC are comprised of the cost of mortgages and other property loans, insurance on the property, utilities and fuels, and other costs and fees. ACS data also provides gross rent for non-owners, which includes rent plus utilities and fuels.

To determine the housing component of the current analysis, the percentage of households in owner occupied units, with and without a mortgage, are multiplied by the median SMOC for the two different categories. This is added to the percentage of renter households multiplied by median gross rent. Totals for Maryland and its counties are then indexed to the same data for the U.S.

Food, apparel and other goods and services component

This component is comprised of food both at home and away from home, alcoholic beverages, housekeeping supplies, household furnishings and equipment, apparel, entertainment, and personal care products and services. As in previous analyses, this study assumes a consistent cost of finished goods across Maryland’s counties and therefore uses differences in labor costs between counties to derive the component index. According to BLS labor productivity and cost data, 62.9 percent is the “Labor Share” of economic output for the nonfarm business sector (2021 Q4). Therefore, this analysis assumes that wage differences can explain this percentage of cost variation between counties. Average annual wages are obtained from the BLS Quarterly Census of Employment and Wages for counties, the state and U.S., with 2020 being the latest annual data available.

Wages for NAICS 445 (Food and beverage stores) are used for food at home while NAICS 722 (Food service and drinking places) is used for food away from home. For purposes of the current analysis, alcoholic beverages are divided evenly between food at home and food away from home. Apparel is based on wages in NAICS 448 (Clothing and clothing accessories stores) and all other components are based on NAICS 44-45 (Total retail). The subcomponents are combined based on weights from the Baltimore metro CE, and then county and state data is indexed to the U.S. average.

Transportation component

Transportation costs in this analysis are comprised of the cost of gasoline, maintenance and repairs, vehicle insurance, and public and other transportation. The first three of the four subcomponents of the transportation index are converted to household expenditures based on average vehicles per household, which is derived from ACS aggregate number of vehicles used in commuting divided by number of households for each geographic area (county, state, U.S.).

To obtain an index of gasoline costs for the counties, with comparable data for the state and U.S., the current analysis uses AAA state and national average daily gas price tool. County, state and U.S. data were obtained for March 3, 2022 and then multiplied by average vehicles per household and indexed to the U.S. average. On February 24, 2022 Russia invaded Ukraine and shortly after the United States and the European Union announced sanctions on Russia, and the Russian oil industry. During the time of this report gas prices were and have remained highly volatile. Consequently, gasoline expenses as a portion of the transportation component may not be an accurate representation of transportation expenses.

The Maryland Insurance Administration (MIA) each year publishes “Auto Insurance: A Comparison Guide to Rates,” with the latest for February 2022. This document contains quotes for vehicle insurance premiums from 60 insurance companies based on several driver and vehicle scenarios. Quotes are for a single zip code within each Maryland county. For this study, two scenarios (men and women 40 years old) were selected and premium quotes averaged for all companies in each zip code. Maryland and U.S. average premiums are obtained from the National Association of Insurance Commissioners, with 2015-2019 average rates (latest available) inflated with the CPI to match the latest MIA data. Data are then multiplied by average vehicles per household and indexed to the U.S. average.

For repair and maintenance, this analysis uses the average state (Maryland) car repair cost multiplied by average vehicles per household (from the ACS) to obtain county-level comparative costs, which are then indexed to the U.S. average. The CarMD.com website provides state and U.S. average repair costs in an annual report it has produced since 1996. The report is built using CarMD’s database of “check engine light related problems and repairs”. The database is “procured from CarMD’s nationwide network of Automotive Service Excellence (ASE)-certified technicians, who recommend, validate and upload repairs and costs to the database on a daily basis”.³ Latest data from CarMD’s is from 2020, the COVID-19 pandemic and associated responses likely reduced overall repair expenditures for 2020 compared to previous years.

To estimate public transportation costs, the average expenditure from the 2019-2020 Baltimore metro Consumer Expenditure Survey for public and other transportation (per consumer unit) is used as the basis for Maryland and the counties, while the national CE table is used for the U.S. This expenditure is

³ <https://www.carmd.com/wp/vehicle-health-index-introduction/>

multiplied by the percentage of the county/state/U.S. labor force using public transit to commute to work, derived from the 2016-2020 ACS. County and state data are then indexed to the U.S.

The four transportation subcomponents are weighted and combined to form the Transportation portion of the COLI.

Healthcare component

Healthcare costs in this analysis include health insurance, medical services, drugs, and medical supplies. Once again, data from the ACS (2016-2020) is used to determine the type of healthcare coverage for residents of Maryland counties, the state and U.S. These percentages are combined into four categories and multiplied by an estimated cost for each type of coverage. The four categories are: 1) employer-based insurance only or in combination; 2) direct purchase insurance only; 3) no health insurance; and 4) the remainder, including Medicare only and other public insurance only and in combination. The percentage with employer-based insurance is multiplied by the Kaiser Family Foundation (KFF) “Average Annual Employee-Plus-One Premium per Enrolled Employee for Employer-Based Health Insurance,” with 2020 data as the latest available. Counties and Maryland are multiplied by the Maryland average premium, with the U.S. multiplied by the U.S. average premium. KFF “Average [Annual] Marketplace Premiums by Metal Tier” for 2022 are used in a similar way for the direct purchase average premium. For Medicare and other public plans, the base cost is the current annual standard premium for Medicare Part B. The cost of insurance for those without coverage is set to zero. The four subcomponents are then combined and multiplied by the average household size and indexed to the U.S. average.

To estimate the cost of medical services, drugs and medical supplies, the Bureau of Economic Analysis data on “Per capita personal consumption expenditures: Health care (Dollars)” for 2020 are used. The expenditure for Maryland is multiplied by average household size for Maryland and counties while the U.S. average expenditure is multiplied by the national average household size. Maryland and counties are then indexed to the U.S. This subcomponent is combined with health insurance to obtain the Healthcare portion of the COLI.

Other component

Costs in the “Other” category are assumed to approximate the national average, and are therefore fixed at 100 for all areas.

Cost of living index

The estimated cost of living index for Maryland counties, the state and the U.S. is presented in the following table. The index is comprised of the five component indexes combined based on the Baltimore metro weights identified in Table 2. All Maryland and county data is indexed to the U.S. average for the same data, so the U.S. average equals 100. Locations with an index above 100 have a cost of living above the national average, while those with an index below 100 have a below-average cost of living.

Table 3.
Maryland Cost of Living Index

	Housing	Food, Apparel and other	Transportation	Healthcare	Other (fixed)	Composite Index
Component weight	30.8%	22.0%	16.2%	7.6%	23.3%	100.0%
U.S.	100.0	100.0	100.0	100.0	100.0	100.0
Maryland	122.7	102.4	119.2	106.6	100.0	111.2
Allegany County	66.2	85.2	85.6	108.6	100.0	84.6
Anne Arundel County	151.8	102.4	132.3	104.0	100.0	122.1
Baltimore City	98.1	93.7	137.4	116.5	100.0	105.4
Baltimore County	119.4	91.8	142.6	102.0	100.0	111.3
Calvert County	150.3	106.8	137.5	115.7	100.0	124.3
Caroline County	98.9	91.7	113.4	109.0	100.0	100.7
Carroll County	133.8	90.6	129.4	113.7	100.0	114.2
Cecil County	114.4	90.1	126.6	94.3	100.0	106.2
Charles County	159.2	92.4	147.1	112.8	100.0	125.2
Dorchester County	84.8	89.0	92.0	97.8	100.0	91.4
Frederick County	143.2	97.9	118.7	111.4	100.0	116.8
Garrett County	77.1	84.5	90.0	114.6	100.0	89.0
Harford County	127.5	94.6	129.7	95.7	100.0	111.8
Howard County	177.1	104.3	136.6	110.8	100.0	131.5
Kent County	101.6	92.8	88.8	108.7	100.0	97.8
Montgomery County	171.4	111.0	136.1	108.3	100.0	130.9
Prince George's County	147.1	98.1	162.0	108.1	100.0	124.8
Queen Anne's County	150.3	101.5	114.0	94.1	100.0	117.7
Somerset County	76.5	82.3	87.5	102.2	100	87.0
St. Mary's County	132.0	94.9	126.5	96.5	100	112.8
Talbot County	113.1	96.7	85.1	99.0	100.0	100.8
Washington County	94.0	84.5	101.9	93.4	100.0	94.5
Wicomico County	92.8	90.2	112.0	94.5	100.0	97.2
Worcester County	98.5	94.9	92.7	97.9	100.0	97.1

Source: Maryland Department of Commerce.