Executive Summary

Analysis of Cost-of-Living Data for Pennsylvania Counties

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May 2018

In 1992, the Center for Rural Pennsylvania funded a study (Kurre, 1992)[1] to estimate the cost of living in all Pennsylvania counties, and to explore urban-rural cost differentials in the state. The Center subsequently funded an update of the original study (Kurre, 2000)[2], but there have been no updates since.

This study, conducted in 2017, provides new and current data on the cost of living (COL) in Pennsylvania's rural and urban areas, and explores several important issues, including whether the rural COL advantage still exists, if it has increased or dwindled, why it exists, and how Pennsylvania compares on the urban-rural cost differential with two other peer states.

Understanding the Cost of Living Index

The Council for Community and Economic Research (C2ER) is the most widely used source of spatial (place-to-place) cost-of-living data in the country, which are published in its quarterly *Cost of Living Index* (COLI).[3] C2ER uses raw price data collected from approximately 300 urban communities each quarter to compute an index with the base of 100 equaling the average for the communities nationwide. Data are available for the Composite, or overall, cost of living in an urban area, and for six subindexes: groceries, housing, utilities, transportation, health care, and miscellaneous goods and services.

One drawback of the traditional Cost of Living Index, however, was that it provided data for urban areas and larger communities, but not for rural areas. This shortfall of the database is what led the Center for Rural Pennsylvania to fund the earlier studies (Kurre, 1992 and 2000) to estimate COL data for the state's rural (and urban) counties. In those studies, a statistical approach was developed to estimate the cost of living, which eliminated the necessity of actually pricing a broad range of goods and services at outlets in every county of the state. The statistical approach to estimating COL identifies a set of underlying variables that tend to cause the cost of living to be high or low in a place, or at least be associated with high or low COL if not actually causing them. The estimation approach uses basic economic theory to identify a number of variables that might logically lead to higher COLs and results in an equation that allows calculation of an estimated COL level for a county based on readily available data, such as the place's population, average income, etc. The estimating equations can then be used to generate estimates of the COLI indexes for all counties.[4]

This study uses the methodology described to determine if the urban-rural COL differential still exists, and if so, whether it has increased or decreased since the last study.[5]

This methodology is also used to address the question of why the cost of living varies from place to place (e.g., why rural costs are typically lower than urban costs) by examining which variables in the estimating equations are statistically significant for each COL subindex.

In addition, this study compares the urban-rural COL patterns in Pennsylvania to those in two other peer states. The selection of peer states is based on an analysis of

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A Legislative Agency of the Pennsylvania General Assembly

This project was sponsored by a grant from the Center for Rural Pennsylvania, a legislative agency of the Pennsylvania General Assembly.

The Center for Rural Pennsylvania is a bipartisan, bicameral legislative agency that serves as a resource for rural policy within the Pennsylvania General Assembly. It was created in 1987 under Act 16, the Rural Revitalization Act, to promote and sustain the vitality of Pennsylvania's rural and small communities.

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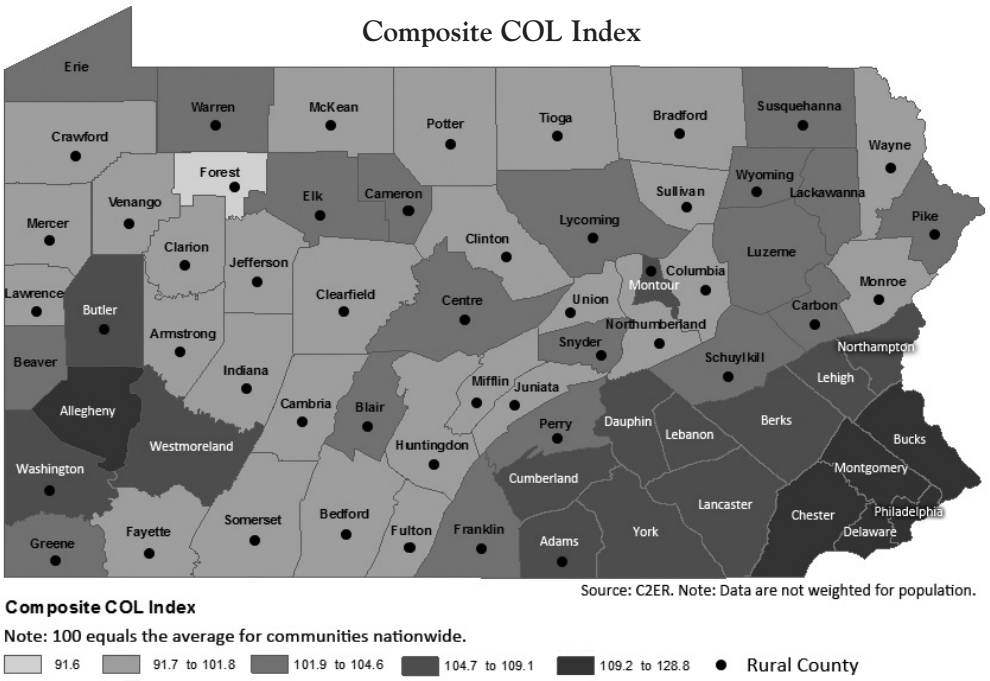
each of the other 50 states (including the District of Columbia) in terms of their comparability to Pennsylvania along four dimensions: population, mean income, number of counties, and percent of counties that are rural. Based on these four criteria, the two peer states chosen for comparison with Pennsylvania were Florida and Ohio.



Study Results

Overall Cost of Living

On a population-weighted basis (to account for the larger number of people living in higher-cost urban areas), Pennsylvanians, on average, pay about 10.7 percent more overall than other Americans.

Housing is the key category driving the higher overall COL in the state, since Pennsylvanians pay 26.8 percent more on average for housing than Americans elsewhere. Transportation runs 12.3 percent above average, utilities 11.8 percent above average, miscellaneous goods and services 7.6 percent above average, and groceries 6.5 percent above average. Health care was 6.2 percent lower than the U.S. average cost.

The overall cost of living tended to be highest among Pennsylvania counties in the southeastern and southwestern parts of the state. For example, Philadelphia's Composite COL Index of 128.8 was the highest in the state, indicating that it costs about 29 percent more to live in Philadelphia than the nation as a whole. Allegheny's Composite COL Index was 113.0.

Rural vs. Urban Cost of Living

Pennsylvania's rural counties have a lower cost of living than its urban counties, with a 7.9 percent differential in favor of rural counties.

The urban-rural differential (in favor of rural counties) was typically 2 or 3 percent for the groceries, transportation, health care, and miscellaneous goods and services categories. For the housing category, the rural advantage was 23.4 percent. The cost of housing is significantly less in rural areas. This is especially important since housing typically makes up about one quarter to one third of a family's budget.

For the utilities category, urban counties had an advantage of about 1.5 percent.

When population is taken into account, the research indicates that urban residents pay 10.9 percent more, on average, than rural residents for their cost of living. In the housing category, urban residents pay about 32.7 percent more, on average, than rural residents.

Key Causes

The key factor that causes the cost of living to be higher in some areas than others is income. Higher income in an area tends to result in higher prices in that area.

Population density also has an impact on the cost of living. Typically, higher density means higher costs. However, this effect only plays a noticeable role when density is very high, such as in Philadelphia and some of its surrounding counties.

The size of an area, in terms of population, also plays a role in the cost of living. A larger place tends to have a higher cost of living. But, as with density, this effect really only comes into play when population numbers get very large.

The unemployment rate also tends to affect the cost of living, with a higher unemployment rate tending to cause a lower cost of living.

While income is a crucial determinant of the cost of living, a change in that income from the previous year does not have a significant effect, except in the housing sector. In that case, it made about a 5 percent difference in housing costs, on average.

Cost of Living Patterns Over Time

While caution should be used when comparing cost of living pat-

terns over time, broad comparisons may still yield some useful results.

Overall, the cost of living in Pennsylvania relative to other parts of the country has not changed much over the 20-year period of 1997 to 2017. The cost of utilities in Pennsylvania may have fallen (or risen more slowly) compared to the rest of the nation during this period, although it is still above the national average. The biggest change is in the health care category, which saw a drop of about 10 percent over the period, relative to costs elsewhere.[6]

A key finding is that the cost of living continues to be lower in the state's rural areas than in its urban areas. The rural-urban differential appears to have increased a bit overall, and especially in the housing sector where it has risen by approximately 20 percentage points to nearly a 33 percent differential.

Income, population, and density continue to be important determinants of the cost of living.

Comparison with Peer States

Both Ohio and Florida are like Pennsylvania in important ways, and were chosen as peer states for comparison. Of the three, Pennsylvania is the highest cost state and Ohio is the lowest.

A key finding is that rural costs are lower than urban costs in all three of these states.

In all three states, the housing category is the sector driving the overall cost of living and the urban-rural differential. The urban-rural housing differential ranged from 16 percent in Florida to 29 percent in Ohio to 33 percent in Pennsylvania, after adjusting for population differences across counties.

In all three states, the utilities index does not follow the general pattern of the other cost of living categories, with urban costs typically being a few tenths of a percent below rural costs.

Both Florida and Ohio exhibited patterns similar to Pennsylvania's in terms of the causes of cost of living. Income levels played the key role in all three states for the Composite Index and for five of the six subindexes, with utilities being the exception in all three states.

Growth in income from the previous year consistently added about 5 percent to the housing category across all three states.

Population and density played similar roles in Florida and Ohio as in Pennsylvania, with relatively small average contributions to the Composite COL Index, but having an important role in places with high population and density levels.

The unemployment rate consistently reduced the overall cost of living by about 5 percent in all three states.

Report Available

A copy of the report, *Analysis of Cost-of-Living Data for Pennsylvania Counties*, is online at www.rural.palegislature.us.

1. Kurre, James A. *The Cost of Living in Rural Pennsylvania.* Harrisburg PA: Center for Rural Pennsylvania. June 1992. 81 pages.
2. Kurre, James A. *Differences in the Cost of Living Across Pennsylvania's 67 Counties.* Harrisburg PA: Center for Rural Pennsylvania. July 2000. 87 pages.
3. C2ER was originally named the Association for Chamber of Commerce Researchers, and the publication was the *ACCRA Cost of Living Index.* More information and access to the data are available at http://coli.org/.
4. For a more detailed explanation of this methodology, see Kurre, James A. "Is The Cost Of Living Less In Rural Areas?" *International Regional Science Review*, v. 26, #1 (2003), pp. 86-116.
5. Caution must be exercised when making temporal COL comparisons, because the market basket used by C2ER to price goods as well as the cities that participate in the data collection may change over time.
6. This does not mean that health care costs in Pennsylvania have fallen. It is more likely that they have risen less here than elsewhere.

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2017 Cost of Living Indexes for All Pennsylvania Counties

County	Rural?	COMPOSITE	GROCERIES	HOUSING	UTILITIES	TRANSPORTATION	HEALTH CARE	MISCELLANEOUS
PA average		**104.1**	**104.6**	**106.4**	**111.7**	**110.0**	**92.1**	**104.9**
Adams	R	106.4	105.1	108.6	107.2	112.1	92.6	101.1
Allegheny		113.0	107.1	134.3	111.0	113.0	94.6	104.2
Armstrong	R	101.6	104.4	102.7	115.0	108.5	91.9	100.1
Beaver		104.1	104.8	108.8	112.4	110.2	92.4	100.8
Bedford	R	100.8	103.5	96.9	111.3	108.7	90.9	98.7
Berks		106.4	105.1	111.6	109.6	111.8	92.7	101.2
Blair	R	103.6	104.3	104.2	110.1	108.4	91.8	100.0
Bradford	R	101.5	103.9	97.0	112.4	109.5	91.4	99.4
Bucks		114.6	108.3	137.6	109.2	116.2	96.0	105.9
Butler	R	108.1	106.2	118.4	109.8	112.3	93.9	102.8
Cambria	R	101.1	103.8	99.2	113.6	107.9	91.2	99.2
Cameron	R	102.8	105.0	107.2	114.8	107.0	92.6	101.0
Carbon	R	104.0	104.8	107.5	111.7	109.8	92.4	100.8
Centre	R	104.6	104.4	101.2	107.6	110.4	91.9	100.1
Chester		117.0	109.2	141.8	107.3	117.1	97.2	107.4
Clarion	R	100.2	103.3	93.0	112.2	107.8	90.7	98.5
Clearfield	R	100.8	104.0	100.4	114.7	107.8	91.5	99.5
Clinton	R	99.6	103.4	93.1	113.8	108.5	90.8	98.5
Columbia	R	101.4	103.6	97.1	110.7	108.6	91.0	98.8
Crawford	R	100.9	103.5	95.2	111.4	108.4	90.9	98.7
Cumberland		109.1	106.1	117.5	107.6	112.7	93.8	102.7
Dauphin		107.2	105.5	114.1	109.2	111.1	93.1	101.8
Delaware		116.0	108.2	142.4	111.1	114.9	95.6	105.7
Elk	R	103.9	104.8	103.3	110.8	108.9	92.3	100.7
Erie		102.7	104.3	104.3	113.0	109.2	91.7	99.9
Fayette	R	99.9	103.8	100.8	116.6	107.2	91.3	99.3
Forest	R	91.6	100.3	71.7	116.3	105.6	87.4	93.9
Franklin	R	104.2	104.5	102.9	109.6	110.8	92.0	100.2
Fulton	R	100.3	103.4	93.8	112.0	109.2	90.8	98.6
Greene	R	103.3	105.2	106.4	114.8	108.9	92.8	101.2
Huntingdon	R	99.3	103.3	94.8	114.0	108.3	90.7	98.4
Indiana	R	99.3	103.3	95.3	114.3	108.6	90.6	98.4
Jefferson	R	100.6	103.7	96.3	113.5	107.9	91.2	99.1
Juniata	R	101.7	103.7	99.5	110.4	109.1	91.1	99.1
Lackawanna		104.5	104.7	107.8	111.3	109.2	92.2	100.6
Lancaster		107.5	105.2	114.0	107.9	112.4	92.7	101.3
Lawrence	R	101.8	104.1	102.2	113.4	108.5	91.6	99.7
Lebanon		105.5	104.8	106.8	108.4	111.2	92.3	100.7
Lehigh		108.0	105.8	117.2	111.1	112.0	93.3	102.2
Luzerne		103.0	104.3	105.1	112.7	109.3	91.8	100.0
Lycoming	R	102.3	104.3	101.7	113.0	109.2	91.8	100.0
McKean	R	101.7	104.1	98.6	113.0	108.2	91.6	99.7
Mercer	R	101.4	103.7	98.2	111.7	108.4	91.1	99.0
Mifflin	R	100.1	103.1	93.2	111.0	107.5	90.4	98.1
Monroe	R	101.5	103.8	100.2	112.5	111.6	91.2	99.1
Montgomery		118.4	109.3	147.2	108.5	117.2	97.1	107.5
Montour	R	108.1	106.0	115.5	107.9	110.7	93.7	102.6
Northampton		107.7	105.8	117.0	110.5	112.8	93.3	102.2
Northumberland	R	101.0	103.7	97.9	112.6	107.9	91.1	99.0
Perry	R	103.3	104.1	99.5	108.6	111.3	91.5	99.6
Philadelphia		128.8	110.3	187.3	120.8	113.8	96.3	108.6
Pike	R	102.2	104.2	103.4	112.5	111.9	91.7	99.9
Potter	R	98.1	103.0	91.0	115.7	107.2	90.4	98.1
Schuylkill	R	102.1	104.0	101.8	112.2	108.8	91.5	99.5
Snyder	R	102.6	103.8	99.5	109.0	109.7	91.2	99.2
Somerset	R	99.4	103.4	94.3	114.6	108.4	90.8	98.6
Sullivan	R	101.3	104.1	100.0	113.2	108.2	91.5	99.6
Susquehanna	R	102.6	104.1	100.6	110.6	109.8	91.6	99.7
Tioga	R	99.2	103.2	91.8	113.9	108.8	90.6	98.3
Union	R	101.6	103.4	94.8	109.0	109.7	90.7	98.5
Venango	R	100.2	103.7	96.6	114.4	108.1	91.1	99.1
Warren	R	103.3	104.4	96.6	110.4	108.2	91.9	100.1
Washington	R	107.9	106.5	125.3	112.2	111.5	94.2	103.3
Wayne	R	101.1	103.6	96.9	111.3	109.7	91.0	98.8
Westmoreland		106.1	105.4	113.4	111.6	110.8	93.0	101.7
Wyoming	R	102.5	104.4	103.0	112.1	109.9	91.9	100.0
York		106.7	105.1	111.2	108.8	112.3	92.6	101.2

(Rebased: All U.S. Counties = 100.0). Note: Data are not weighted for population. Source: Composite Index from C2ER. Subindexes are estimates calculated by the authors from C2ER estimating equations.