

# Living Wage Calculator for Illinois Counties

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## Abstract

The living wage calculator is calibrated on consumer expenditure data sourced from both public and private agencies. Major sources of data are BLS, HUD, and USDA. The calculator models living wages for households with members of varying ages. As far as we are aware, this is the first, publicly available living wage calculator that uses information from the Tax Cuts and Jobs Act of 2017 to deduce income tax implications for wage earners.

*Keywords:* Illinois, Interactive calculator, Living wage, and MS Windows.

## Introduction

Living wage is a societal norm for the level at which people can or should live (De Neufville, 1975). Glickman (1997) posits that living wage offers workers the ability to support families and to have the means to participate in the civic life of the nation. The concept is based on the notion that failure to pay a living wage threatens the sustainability of the workforce, workers who need to work long hours to earn a living wage will become ill and exit the workforce (Stabile, 2008).

Living wage is often operationalized using data from BLS' Consumer Expenditure Survey and is used in industries, for example, to price health services in Federally Qualified Health Centers and to calculate financial assistance for college education. In the following pages we present an interactive calculator that computes living wages for Illinois counties.

The calculator is an update to the existing living wage calculators (for example, Nadeau, 2017), it takes into account changes to income tax rates provided by the Tax Cuts and Jobs Act of 2017 (<https://www.congress.gov/bill/115th-congress/house-bill/1/text>) to compute hourly living wages for Illinois counties. In addition, unlike other living wage calculator in the marketplace which models the total number of members in a household, our interactive calculator models living wages for specific age groups of family members. We believe that this improves the precision of the living wage estimates.

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## Methodology

The living wage is a basic needs budget for a person or a family and is a composite of eight expenditure elements:

Living wage =  $\Sigma$  [Food, Housing, Transportation, Health, Childcare, Other essentials, Federal income tax, and State income tax].

Each of these elements has one or more components which combine (mostly in an additive manner) to form the measure<sup>2</sup>.

### Food

The USDA's low-cost food plan averages were used. The plan assumes that families select low cost food items and that all meals are prepared in the home. The measure varies by family size and the ages of individual family members. See:

[www.cnpp.usda.gov/sites/default/files/CostofFoodJun2016.pdf](http://www.cnpp.usda.gov/sites/default/files/CostofFoodJun2016.pdf)

### Housing

The likely cost of housing in each of the 102 Illinois counties was obtained from HUD's fair-market-rents estimates (FMR). The estimates vary according to the size of the households and are categorized as follows: single occupancy room for one adult without children; one bedroom apartment for two adult without children, two bedroom apartment for any adult combination with one or two children, and three bedroom apartment for any adult combination with three or more children. Appendix 1 contains the recent FMR data, 2018 numbers, for the Illinois counties.

### Transportation

Consumption expenditure data from the BLS were used to estimate transportation costs (Appendix 2). In all, seven variables were assessed to form the measure: cars or trucks used, gasoline or other fuel costs, vehicle finance charges, maintenance and repairs, insurance, vehicle licenses and other charges, and public transportation costs.

### Health

The BLS' 2017 consumption expenditure survey enables one to access cross-classification data on healthcare expenditures and family size (see Appendix 3). Healthcare expenditure items used in living wage computation include: health insurance, medical services and supplies, and drugs.

### Childcare

The state of Illinois provides estimates of childcare costs for at least three levels of analysis: childcare for infants, toddlers, and for children less than 5 years of age. The lowest cost option is used. The interactive calculator assigns a null or zero value to childcare for households with one or more nonworking adults. Data for 2017 are available at: [www.usa.childcareaware.org/advocacy-public-policy/resources/research/statefactsheets2017/](http://www.usa.childcareaware.org/advocacy-public-policy/resources/research/statefactsheets2017/).

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<sup>2</sup> In measurement terminology these are called formative indicators.

## Other Expenditures

This category comprises of housekeeping supplies, apparel, personal care products and services, and miscellaneous expenditures (Appendix 4). These expenditure items are commonly used by other budget researchers (for example, Nadeau, 2017).

## Federal Income Tax and State Income Tax

The Tax Cuts and Jobs Act of 2017, which the IRS implemented in the financial year 2018, provides personal exemptions of \$12,000 to individuals and \$24,000 to couples. Our calculator uses these federal income tax exemptions to compute living wages. In addition, the calculator also factors in the federal progressive tax rates for individuals and couples<sup>3</sup>. For Illinois income tax a flat rate of 4.95% is applied (Ward, 2017).

## **The Software**

The software is compiled to run on MS Windows operating system. On clicking on the LW.Exe button, the interactive screen is displayed:

**Interactive Living-Wage Calculator for Illinois Counties; Units = \$**  
Version 1.2019 Developed by Adeel Athiyaman

Select County (eg. "Adams County") for Analysis:   
Specify the State (eg. "IL"):

Indicate number of adults in the household, age-wise:

Adult 19 to 50 years	<input type="text" value="0"/>
Adult 51 to 70 years	<input type="text" value="0"/>
Adult 71+ years	<input type="text" value="0"/>
No. of working adults	<input type="text" value="0"/>

Indicate number of children in the household, age-wise:

Children, 1 Year of Age	<input type="text" value="0"/>
Children, 2 to 3 Years	<input type="text" value="0"/>
Children, 4 to 5 Years	<input type="text" value="0"/>
Children, 6 to 8 Years	<input type="text" value="0"/>
Children, 9 to 11 Years	<input type="text" value="0"/>
Children, 12 to 13 Years	<input type="text" value="0"/>
Children, 14 to 18 Years	<input type="text" value="0"/>

Buttons for cost estimation:  
Estimate Food Expenses  
Estimate Housing Costs  
Transportation Costs  
Healthcare Costs  
Estimate Childcare Costs  
Other Costs

Needed Income after Taxes  
Federal Income Tax  
State Income Tax  
Required Income before Taxes

The required inputs are county name and household composition. For example, if our interest is on estimating the living wage for a working individual, 19-50 years of age, residing in Cook County, the inputs will be:

<sup>3</sup> These are the single individual tax brackets: \$9,526-\$38,700 (12%); \$38,701-\$82,500 (22%); \$82,501-\$157,500 (24%), and >\$157,500 (32%). For couples, the tax rates are: 12% for \$19,051-\$77,400; 22% for \$77,401-\$165,000; 24% for \$165,001-\$315,000, and 32% for earnings above \$315,000.

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Select County (eg. "Adams County") for Analysis:

Specify the State (eg. "IL"):

Indicate number of adults in the household, age-wise:

Adult 19 to 50 years	<input type="text" value="1"/>
Adult 51 to 70 years	<input type="text" value="0"/>
Adult 71+ years	<input type="text" value="0"/>
No. of adults working	<input type="text" value="1"/>

To obtain the hourly living wage, we click on each of the expenditure category buttons and then click on the "Required Income before Taxes" button (positioned on the lower right corner of the screen) to obtain a living wage of \$14 an hour.

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Specify the State (eg. "IL"):

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Adult 19 to 50 years	<input type="text" value="1"/>
Adult 51 to 70 years	<input type="text" value="0"/>
Adult 71+ years	<input type="text" value="0"/>
No. of working adults	<input type="text" value="1"/>

Indicate number of children in the household, age-wise:

Children, 1 Year of Age	<input type="text" value="0"/>
Children, 2 to 3 Years	<input type="text" value="0"/>
Children, 4 to 5 Years	<input type="text" value="0"/>
Children, 6 to 8 Years	<input type="text" value="0"/>
Children, 9 to 11 Years	<input type="text" value="0"/>
Children, 12 to 13 Years	<input type="text" value="0"/>
Children, 14 to 18 Years	<input type="text" value="0"/>

Estimate Food Expenses	2682
Estimate Housing Costs	10548
Transportation Costs	7502
Healthcare Costs	2967
Estimate Childcare Costs	0
Other Costs	5195
Needed Income after Taxes	28894
Federal Income Tax	884
State Income Tax	1320

Required Income before Taxes   
**Hourly Living Wage 14**

## Summary

The interactive living wage calculator presented in this paper has been operationalized using data mostly from the BLS' Consumer Expenditure Survey, USDA's cost of food data, and HUD's fair-market-rent estimates. The data used in the computations of living wage for the Illinois counties are given in appendices 1 to 4<sup>4</sup>. The calculator can be used by economic developers to gauge equity of pay at the county level and to analyze the adequacy of benefit levels in the counties.

<sup>4</sup> Please email the author for the data files.

## References

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