

# Anatomy of the State Competitiveness Index

The Beacon Hill Institute (BHI) has published the *State Competitiveness Report* annually since 2001. The analysis below is based on the 2014 edition released in June 2015.

BHI's Competitiveness Index is built from 45 variables organized into eight sub-indexes. The sub-indexes and their respective variables are listed below.

## Government and Fiscal Policies

- State and local taxes as a percent of personal income (lower is better)
- State workers' compensation premium rates (lower is better)
- State bond rating: composite of S&P's and Moody's (higher is better)
- Budget surplus as a percent of gross state product (higher is better)
- Average weekly unemployment benefit (lower is better)
- Full-time-equivalent state and local government employees per 100 residents (fewer is better)

## Security

- Crime index per 100,000 inhabitants (lower is better)
- Percent change in crime index, 2013-14 (lower is better)
- Murders per 100,000 inhabitants (fewer is better)
- Score on the Better Government Association's "Integrity Index"<sup>1</sup> (higher is better)

## Infrastructure

- Cell phones per 1,000 residents (more is better)
- High-speed broadband lines per 1,000 residents (more is better)
- Air passengers per capita (more is better)
- Average travel time to work (lower is better)
- Electricity prices per kilowatt hour (lower is better)
- Average rent of two-bedroom apartment (lower is better)

## Human Resources

- Percent of population without health insurance (lower is better)
- Percent of population aged 25 and over that graduated from high school (higher is better)

better)

- Unemployment rate, not seasonally adjusted (lower is better)
- Students enrolled in degree-granting institutions per 1,000 residents (more is better)
- Percent of adults in the labor force (higher is better)
- Infant mortality rate in deaths per 1,000 live births (lower is better)
- Total active physicians per 100,000 inhabitants (more is better)
- Percent of 4th grade public school students at or above “proficient” in mathematics (higher is better)

## Technology

- Academic science and engineering R&D per \$1,000 of Gross State Product (higher is better)
- National Institute of Health support to institutions, per capita (more is better)
- Patents per 100,000 inhabitants (more is better)
- Science and engineering graduate students per 100,000 residents (more is better)
- Science and engineering degrees awarded per 100,000 residents (more is better)
- Scientists and engineers as percent of the labor force (more is better)
- Employment in high technology industries as a percent of total employment (higher is better)

## Business Incubation

- Deposits in commercial banks and savings institutions per capita (more is better)
- Venture capital investment per worker (more is better)
- Employer firm births per 100,000 inhabitants (more is better)
- Initial public stock offerings: dollars per capita (higher is better)
- Percent of labor force that is represented by unions (lower is better)
- Minimum wage (lower is better)
- Pacific Research Institute’s Tort Liability Index (lower is better)
- Cost of labor adjusted for educational attainment (lower is better)

## Openness

- Exports per capita (more is better)
- Employment in majority-owned U.S. affiliates in state as a percent of total employment.<sup>2</sup> (higher is better)
- Percent of population born abroad (higher is better)

## Environmental Policy

- Toxic release inventory, on-site and off-site, total (new and original industries), pounds per sq. mile (lower is better)
- Greenhouse gas emissions (million metric tons of carbon equivalent per 1,000 sq. miles) (lower is better)
- Air quality, measured by percent of days in a year rated good or average (lower is better)

## Scaling and Weighting

Every measure in the Beacon Hill Institute's (BHI) index carries an identical weight of one within its sub-index. In every case, a higher value for a variable indicates a better score, so that the higher the overall index value, the better, or the more "competitive." Each measure is also normalized; that is, it is re-scaled so that it has a mean value of 5.0 and a standard deviation of 1.0. The BHI sub-indexes are simple averages of the component normalized variables. Each sub-index is then normalized in the same fashion, so each sub-index score has a mean of 5.00, and each state's overall score is a simple average of the eight normalized sub-indexes.

This normalization creates the same degree of variability for each variable, and then for each sub-index. Combined with the equal weighting, this guarantees that each variable within a sub-index contributes in the same proportion to the overall sub-index, and then each sub-index contributes identically to the variation in the overall index.

This even-handedness is not a virtue. It does prevent a situation such as we found with the Small Business Policy Index, where certain measures had large variations while others varied little, so that the state rankings were driven almost entirely by a handful of tax measures. With BHI's index, at least we know that each variable indeed counts the same. But this is a virtue only if it is true that each variable *should* contribute equally. As with the choice of weights, the decision to normalize is entirely arbitrary unless there is a valid reason to do so. In reality, such decisions should be made based on the relative importance of the variables in producing growth or some other desired outcome.

In the case of the BHI index, the normalization and weighting produce some effects that are counterintuitive, to say the least. For example, **the percent of the population that is foreign born has a very dubious connection to economic growth, yet it has twice the weight in determining the overall state BHI score as the state's average price of electricity - a very real business cost - and almost three times the weight applied to the education level of the workforce.** This is because the foreign born measure is one-third of the "openness" sub-index, while electricity prices count for just one-sixth of the "infrastructure" sub-index, and the percent of the population who graduated from high school is just one-eighth of the "human resources" sub-index (All sub-indexes are weighted equally in the overall index).

1. □ The Better Government Association produces an index intended to “describe the extent to which each state has protected itself against possible corruption and made its processes open and accountable to its citizens.” It is based on a review of laws regarding freedom of information, whistleblower protection, campaign finance, gifts, and conflicts of interest. See [http://www.bettergov.org/pdfs/IntegrityIndex\\_10.22.02.pdf](http://www.bettergov.org/pdfs/IntegrityIndex_10.22.02.pdf).

2. A supposed proxy for foreign direct investment.