

Economic Impact from Child Care Gap

Introduction:

As an extension to the child care gap analysis, an economic impact analysis was undertaken in an attempt to monetize the impact on families, businesses, and the broader economy. The methodology to calculate the economic impact of child care gaps focuses on losses attributed to households, businesses, and general tax losses. All calculations are based on the underlying gap(s) for child care identified in the 2020 gap analysis.

Household Component:

The economic burden to households attempts to capture economic losses from current lost earnings from reduced hours and lower productivity, as well as future lost earnings from lower productivity, less work experience, and losing out on the potential for skills upgrading. The annual earnings burden to households is based on the following assumptions at the state level:

- Statewide child care gap calculated from 2020 BPC study
- Average state hourly wage from BLS
- Average state annual number of hours worked from the BLS
- Statewide working parent to child ratio derived from the ACS PUMS

The annual earnings burden is calculated as follows:

*Calculated Gap * Working Parent/Child Ratio * Average hours worked * Average annual wages*

This is multiplied by an overall loss factor of 7% or 9% which was an assumption derived from the existing child care economic impact literature¹. The range provides a “low” and “high” scenario for lost annual wages.

An attempt was made to also model households where parents had to stop working entirely. Scenarios were calculated with both a 30% and 50% rate of stopping work by multiplying the statewide gap by these two percentages. Results of surveys conducted by BPC were utilized in deriving the percent of parents who stopped work.

The total calculation is as follows:

*(Calculated gap * 30% or 50%) * Average hours worked * Average annual wages*

The annual earnings loss plus the loss from the percentage of households with parents who stop working altogether was added resulting in total annual losses to households with a “low” and “high” scenario.

¹ Clive Belfield “*The Economic Impact of Insufficient Childcare on Working Families*” September 2018.

Long-term burdens were estimated by taking the annual losses calculated above and discounting ten years into the future at a 10% discount rate. This was an attempt to capture the long-term losses that are associated with becoming less competitive in the labor force due to an initial reduction in hours or stoppage of work. This also accounts for the child care gap existing into the future (possibly to a lesser extent, but still present). The discount rate was taken from existing literature on long-term economic impacts of reduced child care.

Business Component:

Business losses are modeled as a function of current and future productivity losses as well as turnover costs. Output losses are assumed to be a combination of a proportion of lost hours and earnings as well as direct costs such as supplemental pay and healthcare. Assumptions used in this calculation include:

- Proportion of lost hours/earnings/turnover cost set at 10% of earnings
- Paid leave as 7.1% earnings
- 3.3% of earnings as supplement pay
- 8.8% of earnings as direct benefits
- Total cost to businesses of 29.2% of earnings/wages

Annual business losses were calculated using the “low” and “high” scenarios for households derived in the initial household calculation as:

*Total household loss (low and high) * 29.2%*

Long term business losses were calculated in a similar way to households discounting ten years into the future with an assumed discount rate of 2.5%

Tax Component:

Tax losses are assumed as a constant percentage that is modeled as an average national tax. These assumptions are not trying to specify individual state losses across various tax bases. Total tax losses are assumed to include both household and businesses. The tax assumptions are:

20% “average” rate applied to total household and business earnings loss

Total household business loss (low and high) + Total business loss (low and high) * 20%

Long-term tax losses were calculated by discounting annual losses ten years at a rate of 13%.

Notes: This exercise was modeled off existing child care economic impact literature. The calculations are assumption driven which offers flexibility for testing various scenarios.

Additional Information on Data Sources:

1. Annual Hours Worked

Average number of hours worked annually per worker is available from the BLS, reported by state, for each year 2007 through 2019 in the most recent report. 2019 data were used. See <https://www.bls.gov/lpc/state-productivity.htm>.

2. Average Hourly Wages

A source for Average hourly wages for workers is also available from the BLS in the form of two tables – one for metropolitan statistical areas (MSAs) and another for non-metro regions in each state. See *MSA_M2019_dl.xlsx* downloaded from the BLS website for MSAs and *BOS_M2019_dl.xlsx* for non-metropolitan areas.

BLS data for MSA's is referenced by census MSA identifiers and therefore is easily applied to census block groups through conventional spatial joins. BLS data for non-metro areas is more problematical – BLS references geographic areas by identifiers of their own invention that do not correspond to any geographic identifier available for the census.

A table of BLS identifiers was available https://www.bls.gov/oes/current/msa_def.htm#0100001 translates BLS identifiers used for wage data above into comparable census FIPS codes for states and counties for states outside of New England, and these identifiers could be migrated to census block group geography through a series of table joins. For the 6 states comprising New England (CT, RI, MA, VT, NH, ME), however, BLS data references “county subdivisions” – but only references county subdivision names, and not actual census identifiers. Geographic data layers (i.e., maps) for county subdivisions in New England were assembled for individual states from census TIGER files, for example downloaded from: <https://catalog.data.gov/dataset/tiger-line-shapefile-2019-state-maine-current-county-subdivision-state-based>. A point-in-polygon operation successfully migrated the census names for “county subdivisions” to census block groups after which a series of joins allowed BLS average wage data for New England states to be applied by matching “county subdivision names”. This last operation was somewhat imperfect since BLS place names frequently do not match census place names exactly, and so manual editing was required.

3. Parental Population

The population of children (under age 6) affected by childcare service deficiencies is available directly from our analysis (i.e., “childcare gaps”). From this the number of parents were estimated. Since standard tables from the census’ American Community Survey (ACS) are ambiguous with respect to the number of working parents associated with each child, we needed to resort to tabulations generated from the census Public Use Microsample (PUMS) to produce the necessary result. A ratio of the number of working parents associated with each child was produced from the PUMS for each state and these were applied to each census block group in the state. (PUMS data does not specifically locate households to block group geographies).