

Current Statutory Language (C.G.S 2-33a)

As used in this section, “increase in personal income” means the average of the annual increase in personal income in the state for each of the preceding five years, according to United States Bureau of Economic Analysis data;

Options for New Definition of “Increase in Personal Income”

Option 1:

As used in this section, “increase in personal income” means the compound annual growth rate of personal income in the state over the preceding five calendar years, according to United States Bureau of Economic Analysis data;

Option 2:

As used in this section, “increase in personal income” means the compound annual growth rate of personal income in the state over the preceding five state fiscal years ending twelve months and one day prior to the start of the fiscal year being calculated, according to United States Bureau of Economic Analysis data;

Option 3:

As used in this section, “increase in personal income” means the compound annual growth rate of personal income in the state over the preceding ten calendar years, according to United States Bureau of Economic Analysis data;

Option 4:

As used in this section, “increase in personal income” means the compound annual growth rate of personal income in the state over the preceding ten state fiscal years ending twelve months and one day prior to the start of the fiscal year being calculated, according to United States Bureau of Economic Analysis data;

Additional Possible Options, not detailed here:

Adjusted Personal Income

Adjusted Gross Income (AGI)

Commentary:

I.

The language regarding “increase in personal income” in the statutory spending cap adopted in 1991 is susceptible to misinterpretation. It may seem appropriate to some to calculate the average of the annual increases in personal income over a period of years by taking the sum of annual percentage point changes over that period, and dividing that sum by the number of years to determine an average percentage point change.

That method, however, is not used by economic and financial analysts. They divide the final amount resulting from changes over “x” period of years by the amount at the beginning of the period, and then take the “x”th root of the quotient. This calculation produces a growth rate [a *compound annual growth rate (CAGR)*] which, if compounded over time and applied to a starting figure will produce the ending figure. The process is analogous to the calculation of a compound interest rate.

The first calculation method produces a rate which is different from – albeit sometimes by a small amount – the rate produced by the correct (CAGR) calculation method.

To resolve any ambiguity concerning the statutory spending cap language, when the spending cap was first implemented the compound annual growth rate of personal income in the state over the preceding five years was used by OPM to operationalize “the average of the annual increase in personal income in the state for each of the preceding five years.” OFA used this same methodology for calculating growth when the first budget under the cap was adopted. The common practice has now been in place for twenty-five years.

Utilizing the compound annual growth rate is viewed as preferable in economic and financial analysis because averaging percentage changes in a time series may produce a result, at the end of a specific time period, which is different from the actual final number. Applying the CAGR over five years to the personal income figure in the base year five times will yield the personal income in the fifth year. Averaging the five annual percentage changes from one year to the next and applying that average five times will not yield the same result. It may be close, but it would not be exact.

Because of the accepted method of analysis, and the fact that using the CAGR has been embedded in past practice, the Commission recommends that the General Assembly take this opportunity to clarify the language in the spending cap statute to avoid any ambiguity, and state explicitly that the compound annual growth rate should be the measure of increase in personal income.

II.

Based on recommendations from several members, the Commission considered whether to adjust BEA personal income by adding realized capital gains. However, it

was pointed out¹ that, if such an adjustment were to be made, adjustments should also be made to more closely approximate the revenue base that could be taxed by

- A. Adjusting for place of residence – adding the income of non-residents who worked in Connecticut and whose wages would accordingly be subject to taxation here, but subtracting the income of residents who worked out-of-state and whose wages would accordingly be subject to taxation there.
- B. Subtracting from personal income the imputed rents of homeowners, which are not part of the revenue base subject to income taxation as it is a non-cash computation by the federal government.

The Commission requested staff at OPM to do back-testing of data pertaining to these various modifications since the inception of the cap. The information was presented to the Commission at its meeting on August 1st.²

For compound annual growth rates over periods of the previous ten years, the computations demonstrated that if BEA personal income were to be modified by including realized capital gains, modifying for residence and subtracting imputed rent, the compound annual growth rate of this adjusted personal income measure over ten year periods was almost exactly identical to the growth rate for BEA personal income, unadjusted, for those periods (5.18% per annum vs. 5.18% per annum since the inception of the cap).

For compound annual growth rates over periods of the previous five years, the computations demonstrated that if BEA personal income were to be modified by including realized capital gains, modifying for residence and subtracting imputed rent, the compound annual growth rate of this adjusted personal income measure over five year periods was about 20 basis points (0.2 percentage points) lower than the growth rate for BEA personal income, unadjusted, for those periods (4.56% per annum vs. 4.36% per annum since the inception of the cap).

The computations also show that the volatility of both measures is less when ten-year lookback periods are used, as opposed to five-year lookback periods.

However, for the immediate future, because past ten year periods will include the years of the Great Recession, it appears that using five-year periods will be more reflective of the current income base.

¹ The presentation by Professor Dan Kennedy on July 18th listed items which were included in BEA personal income, and AGI (see p. 36 of presentation). In addition, on July 7th, the Commission was presented copies of a letter from analysts at the New England Public Policy Center at the Federal Reserve Bank of Boston to staff at the Massachusetts Budget and Policy Center, July 30, 2008, a letter which canvassed potential modifications to BEA personal income, modifications which could be used to better define personal income as a benchmark for purposes of assessing the growth in costs of Massachusetts' Medicaid program. (Copies of this letter were made available to members of the Commission, but it is no longer accessible on the NEPPC website.)

² See spreadsheet from OPM, presented to the Commission August 1, 2016.

Other considerations:

Availability and timeliness: BEA personal income data for the state is available quarter by quarter, with about a quarter's lag so the data is nearly contemporaneous. (By January, BEA personal income is available through the end of September of the previous year.) Data about realized capital gains, however, is available only after a two-year lag. The Commission concluded that a measure which included realized capital gains data would accordingly be reflective, not of the current economic situation, but of the economic situation two years earlier.

Transparency:

Because of the number of adjustments that would be made to personal income to arrive at the adjusted measure of personal income, the latter measure would be less simple for replication by the ordinary citizen, and thus less transparent than using the unadjusted personal income measure.

Volatility:

For both five year and ten year lookback periods, the inclusion of realized capital gains made the adjusted measure of personal income more volatile than the unadjusted measure.

The unadjusted measure of personal income for ten year lookback periods is less volatile than the same measure for five year periods.

III.

Another option that was considered as a measure of personal income was to use Adjusted Gross Income (AGI) of Connecticut taxpayers, as reported by the United States Internal Revenue Service, because AGI includes realized capital gains.

However, AGI does not adjust for place of residence. (The place of residence for in-state taxpayers who work out-of-state is Connecticut, so their total income would be counted under Connecticut's totals.) Also, IRS reports of Connecticut AGI on its website often differed from information transmitted by IRS to Connecticut's Department of Revenue Services. Moreover, AGI does not include the income of non-filers. In addition, there is a delay of two years in reporting AGI.

Finally, volatility of AGI over both 5 and 10 year lookback periods is substantially greater than the volatility of both the adjusted and unadjusted personal income measures.

For these reasons, the Commission decided not to use AGI as a replacement for the definition of personal income.

IV.

The Commission also considered whether the reference “years” should be calendar years or fiscal years.

The existing statutory spending cap does not specify whether the reference year should be the preceding calendar year or the preceding fiscal year. In the first fiscal year under the cap, OPM used fiscal years and OFA used calendar years. In the year since, until the legislature specified otherwise, both OPM and OFA used fiscal years as the reference. Per legislative directive, calendar years are now used. Calendar years were used as the basis for data on personal income provided to the Commission.

Data about personal income is available each quarter, after a lag time of about a quarter. (Data for the quarter April through June is available by the first of October.) Accordingly, as the Governor’s budget is being prepared during December of each year, personal income data for the previous fiscal year ending June 30 is available, but the most recent data available is for the third quarter of the calendar year. However, by the time that the General Assembly adopts a budget for the fiscal year beginning July 1, data for the previous complete calendar year is available.

Using calendar years as the reference years would require OPM to use a projection for the final quarter of a calendar year, but this reference would provide the most recent data at the time of the adoption of the budget.

Using fiscal years as the reference years would enable both OPM and OFA to use the same data, but the data would be almost a year old when the budget is adopted.

The Commission, having weighed both options, determined that _____ years should be the reference years – and the definition should explicitly state that.