TAX FOUNDATION

It Matters How Tax Brackets are Adjusted

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Kyle Pomerleau

Every year, the IRS adjusts more than 40 tax provisions for inflation. This is done to prevent what is called "bracket creep." This is the phenomenon by which people are pushed into higher income tax brackets or have reduced value from credits or deductions due to inflation instead of an actual increase in real income.

The IRS uses the Consumer Price Index (CPI) to adjust the value of the parameters. It does this by taking the tax parameter's base value and multiplying it by the current year's CPI and dividing it by the base year's CPI. For example, the base value for the top of the 10 percent income tax bracket is $7,000 with a base year of 2002. This is multiplied by 2014's CPI-U of 235.69 and divided by 2002's value of 178.68. The result is $9,225 (after rounding).

The CPI-U is not the only way to adjust tax parameters. Tax brackets could be adjusted in a number of ways including average wage growth (as Social Security brackets are currently adjusted) or the Chained CPI-U, which is another measure of inflation.

The choice of adjustment, although an obscure public policy, is meaningful for taxpayers. It could mean higher or lower tax burdens over a long period of time.

The difference can be demonstrated comparing how the income tax brackets are calculated under the CPI-U versus how they would be under the Chained CPI-U.

The Difference Between the CPI-U and the Chained CPI-U

The difference between the CPI-U and Chained CPI-U is in how each accounts for immediate changes in the behavior of consumers when they face higher prices. The CPI-U assumes that increases in price do not lead to substantial substitution effects. In other words, an increase in the price of chicken would not lead many people switching to another product—consumers would just face the high price level. It is calculated by taking a set of consumer goods in a base year and tracking their price changes year-to-year.

The Chained CPI-U on the other hand better accounts for substitution effects. As a result, a price increase in chicken may not lead to an overall large increase in price levels because consumers may switch to lower-priced pork. Technically, this is done by varying the weights on specific goods each month to reflect shifts in consumer behavior.

Looking at the index numbers show how the Chained-CPI grows at a slower rate compared to the CPI-U. In FY2001 they are both set to 100. As time goes on and prices increase, both measures grow. However, the CPI-U grows faster. In 2007, CPI-U has grown by 16.5 percent while the Chained CPI-U has grown by 14.4 percent. By August 2014, the CPI-U is 34 percent higher than it was in 2001 and the Chained CPI-U is only 30 percent higher. The difference has grown from 2 percent in 2007 to about 4 percent in 2014. As time goes on, the gap between the two measures would widen even further.

CPI vs. Chained CPI, 2001 - 2014
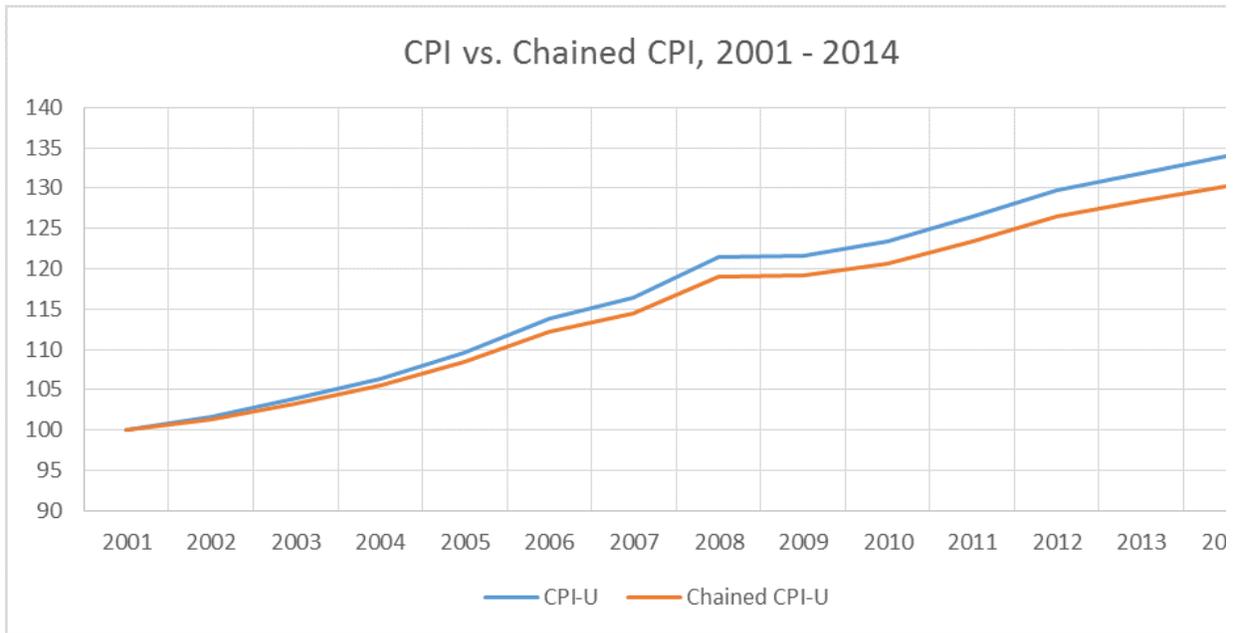
How the Difference Affects Tax Bills

Using the Chained CPI-U vs. the CPI-U has a significant effect on the amount an individual pays in taxes over time.

Suppose an individual earns about $30,000 in 2003 and receives pay increases of $1,500 each year until 2015. At this point he earns $48,000. Also, each year the government adjusts the income tax parameters by the CPI-U (as it currently does).

As expected, his tax bill increases as his income increases. In 2003, his tax bill would be $2,980 and grow to $5,231 by 2015 (Table 1, column 3).

Table 1. Tax Bill under CPI-U and Chained CPI-U Adjustment				
Year	Income	CPI-U Tax Bill	Chained CPI-U Tax Bill	Difference
2003	$ 30,000.00	$ 2,980.00	$ 2,980.00	$ –
2004	$ 31,500.00	$ 3,175.00	$ 3,183.75	$ 8.75
2005	$ 33,000.00	$ 3,370.00	$ 3,378.75	$ 8.75
2006	$ 34,500.00	$ 3,545.00	$ 3,556.25	$ 11.25
2007	$ 36,000.00	$ 3,703.75	$ 3,722.50	$ 18.75
2008	$ 37,500.00	$ 3,896.25	$ 3,917.50	$ 21.25
2009	$ 39,000.00	$ 4,045.00	$ 4,073.75	$ 28.75
2010	$ 40,500.00	$ 4,261.25	$ 4,298.75	$ 37.50
2011	$ 42,000.00	$ 4,457.50	$ 4,496.25	$ 38.75
2012	$ 43,500.00	$ 4,642.50	$ 4,681.25	$ 38.75
2013	$ 45,000.00	$ 4,818.75	$ 4,858.75	$ 40.00
2014	$ 46,500.00	$ 5,006.25	$ 5,118.75	$ 112.50
2015	$ 48,000.00	$ 5,231.25	$ 5,400.00	$ 168.75

Now suppose in an alternate universe, the government decided to adjust the tax brackets each year with the Chained CPI-U rather than the CPI-U. The taxpayer still earns the same amount of money each year. However, because the bracket adjustments are slightly smaller under the chained CPI-U, the taxpayer's bill each year (after 2003) is slightly higher (Table 1, column 4).

In 2004 (in this alternate universe), the taxpayer ends up paying $8.75 more. This does not seem like too much, but as time goes on, the difference in the tax bills increase. By 2015, the taxpayer ends up paying $168.75 more under tax brackets adjusted for the Chained CPI-U than under the CPI-U.

Over the entire period, he pays an additional $533.75 over what he would have paid under CPI-U adjustments.

(Data tables below show each year's tax parameters)

This Obscure Policy Matters

Over a long period of time, different methods of adjustment can mean higher or lower tax bills without having to adjust tax rates at all. Using the Chained CPI-U, specifically, allows taxpayers' income to move into higher brackets faster, leading to higher income tax bills over long periods of time.

It isn't rare that policymakers look to change how brackets are adjusted. Last year, Maine proposed using the Chained CPI-U rather than the typical CPI. This would have caused no immediate tax increase in Maine, but it would have meant higher income taxes in the long term.

This also affects spending policies as well. Many benefits are adjusted each year for inflation to make sure they don't lose their purchasing power. The choice between either CPI-U or Chained CPI-U (or other methods of adjustment) can affect how fast these spending policies grow. The President recently proposed moving to the Chained CPI-U for adjusting Social Security benefits.

While the choice of bracket adjustment is a somewhat obscure policy, it does have a real effect on most taxpayers.

Data Tables:

Tax Parameter and Tax Bill (CPI-U Adjustment)							
Year	Income	Tax Parameters	Tax Bill				
		Standard Deduction	Personal Exemption	10% Bracket	15% Bracket	25% Bracket	
2003	$ 30,000.00	$ 4,750.00	$ 3,050.00	$ 7,000.00	$ 28,400.00	$ 68,800.00	$ 2,980.00
2004	$ 31,500.00	$ 4,850.00	$ 3,100.00	$ 7,150.00	$ 29,000.00	$ 70,350.00	$ 3,175.00
2005	$ 33,000.00	$ 4,950.00	$ 3,150.00	$ 7,300.00	$ 29,700.00	$ 71,950.00	$ 3,370.00
2006	$ 34,500.00	$ 5,100.00	$ 3,250.00	$ 7,550.00	$ 30,600.00	$ 74,200.00	$ 3,545.00
2007	$ 36,000.00	$ 5,300.00	$ 3,400.00	$ 7,825.00	$ 31,800.00	$ 77,100.00	$ 3,703.75
2008	$ 37,500.00	$ 5,400.00	$ 3,450.00	$ 8,025.00	$ 32,550.00	$ 78,850.00	$ 3,896.25
2009	$ 39,000.00	$ 5,650.00	$ 3,600.00	$ 8,350.00	$ 33,950.00	$ 82,250.00	$ 4,045.00
2010	$ 40,500.00	$ 5,650.00	$ 3,650.00	$ 8,375.00	$ 34,000.00	$ 82,400.00	$ 4,261.25
2011	$ 42,000.00	$ 5,750.00	$ 3,700.00	$ 8,500.00	$ 34,500.00	$ 83,600.00	$ 4,457.50
2012	$ 43,500.00	$ 5,900.00	$ 3,750.00	$ 8,700.00	$ 35,350.00	$ 85,600.00	$ 4,642.50
2013	$ 45,000.00	$ 6,050.00	$ 3,850.00	$ 8,925.00	$ 36,250.00	$ 87,850.00	$ 4,818.75
2014	$ 46,500.00	$ 6,150.00	$ 3,950.00	$ 9,075.00	$ 36,850.00	$ 89,300.00	$ 5,006.25
2015	$ 48,000.00	$ 6,250.00	$ 4,000.00	$ 9,225.00	$ 37,450.00	$ 90,750.00	$ 5,231.25

Tax Parameter and Tax Bill (Chained CPI-U Adjustment)							
Year	**Income**	**Tax Parameters**	**Tax Bill**				
		Standard Deduction	Personal Exemption	10% Bracket	15% Bracket	25% Bracket	
2003	$ 30,000.00	$ 4,750.00	$ 3,050.00	$ 7,000.00	$ 28,400.00	$ 68,800.00	$ 2,980.00
2004	$ 31,500.00	$ 4,800.00	$ 3,100.00	$ 7,125.00	$ 28,950.00	$ 70,150.00	$ 3,183.75
2005	$ 33,000.00	$ 4,900.00	$ 3,150.00	$ 7,275.00	$ 29,550.00	$ 71,650.00	$ 3,378.75
2006	$ 34,500.00	$ 5,050.00	$ 3,250.00	$ 7,475.00	$ 30,400.00	$ 73,650.00	$ 3,556.25
2007	$ 36,000.00	$ 5,250.00	$ 3,350.00	$ 7,750.00	$ 31,450.00	$ 76,150.00	$ 3,722.50
2008	$ 37,500.00	$ 5,350.00	$ 3,400.00	$ 7,900.00	$ 32,050.00	$ 77,700.00	$ 3,917.50
2009	$ 39,000.00	$ 5,550.00	$ 3,550.00	$ 8,225.00	$ 33,350.00	$ 80,800.00	$ 4,073.75
2010	$ 40,500.00	$ 5,550.00	$ 3,550.00	$ 8,225.00	$ 33,400.00	$ 81,000.00	$ 4,298.75
2011	$ 42,000.00	$ 5,650.00	$ 3,600.00	$ 8,325.00	$ 33,850.00	$ 82,000.00	$ 4,496.25
2012	$ 43,500.00	$ 5,750.00	$ 3,700.00	$ 8,525.00	$ 34,600.00	$ 83,850.00	$ 4,681.25
2013	$ 45,000.00	$ 5,900.00	$ 3,800.00	$ 8,725.00	$ 35,450.00	$ 85,950.00	$ 4,858.75
2014	$ 46,500.00	$ 6,000.00	$ 3,850.00	$ 8,875.00	$ 36,000.00	$ 87,200.00	$ 5,118.75
2015	$ 48,000.00	$ 6,100.00	$ 3,900.00	$ 9,000.00	$ 36,500.00	$ 88,450.00	$ 5,400.00

Note: These parameters are only representative. In reality, base years for these parameters vary. For more information see: https://taxfoundation.org/article/2015-tax-brackets