

Consumer Metrics Institute News

February 25, 2011: Inside the BEA's New Lower Estimate of 4Q-2010 GDP Growth

The Bureau of Economic Analysis (BEA) has just lowered their estimate of the annualized growth rate for the U.S. Gross Domestic Product (GDP) during the fourth quarter of 2010 from 3.17% to 2.79%, a drop of about .4% and only a statistically insignificant 0.24% higher than their growth estimate for 3Q-2010 (2.55%). The changes reflected somewhat weaker consumer personal consumption expenditures, even more contracted governmental expenditures and slightly higher numbers for both exports and imports. The previously reported lull in net inventory activities remained essentially unchanged.

As a quick reminder, the classic definition of the GDP can be summarized with the following equation:

$$\text{GDP} = \text{private consumption} + \text{gross private investment} + \text{government spending} + (\text{exports} - \text{imports})$$

or, as it is commonly expressed in algebraic shorthand:

$$\text{GDP} = \text{C} + \text{I} + \text{G} + (\text{X}-\text{M})$$

For the fourth quarter of 2010 the values for that equation (total dollars, percentage of the total GDP, and contribution to the final percentage growth number) are now follows:

GDP Components Table

	Total GDP	=	C	+	I	+	G	+	(X-M)
Annual \$ (trillions)	\$14.9	=	\$10.5	+	\$1.8	+	\$3.0	+	-\$0.5
% of GDP	100.0%	=	70.8%	+	12.1%	+	20.4%	+	-3.3%
Contribution to GDP Growth %	2.79%	=	2.88%	+	-3.13%	+	-0.31%	+	3.35%

Component Contributions

The quarter-to-quarter changes in the growth contributions made by various segments of the economy are significant, and they can be better understood from the table below that breaks out the component contributions in more detail and over time. In the table we have further split the "C" component into goods and services, split the "I" component into fixed investment and inventories, separated exports from imports, and listed the quarters in columns with the most current to the left:

Quarterly Changes in % Contributions to GDP

	4Q-2010	3Q-2010	2Q-2010	1Q-2010	4Q-2009	3Q-2009	2Q-2009	1Q-2009
Total GDP Growth	2.79%	2.55%	1.72%	3.72%	5.02%	1.59%	-0.69%	-4.88%
Consumer Goods	2.20%	0.94%	0.79%	1.29%	0.42%	1.62%	-0.32%	0.41%
Consumer Services	0.68%	0.74%	0.75%	0.03%	0.27%	-0.21%	-0.79%	-0.75%
Fixed Investment	0.57%	0.18%	2.06%	0.39%	-0.12%	0.12%	-1.26%	-5.71%
Inventories	-3.70%	1.61%	0.82%	2.64%	2.83%	1.10%	-1.03%	-1.09%
Government	-0.31%	0.79%	0.80%	-0.32%	-0.28%	0.33%	1.24%	-0.61%
Exports	1.18%	0.82%	1.08%	1.30%	2.56%	1.30%	-0.08%	-3.61%
Imports	2.17%	-2.53%	-4.58%	-1.61%	-0.66%	-2.67%	1.55%	6.48%

Analysis

In summary this report is still showing modest GDP growth during 4Q-2010, although that growth is now not statistically indistinguishable from the BEA's last estimate for the third quarter of 2010. The estimate-to-estimate changes lowered the contributions of both consumers and governments to the growth rate, with the contraction of state and local governmental expenditures now removing 0.29% from the growth rate, nearly three times the impact estimated only 30 days ago. In general the revisions confirm the conservative nature of the guesses used by the BEA in constructing their "Advance Estimate" reports, causing them to initially underestimate dynamic shifts in the

economy.

It should be noted that the BEA still used "price deflators" that reflected an aggregate 0.4% national annualized inflation rate (up slightly from the 0.3% used in the "Advance Estimate"). At a number of levels this "deflater" is curious. Within [the BEA's release](#) they have an "Appendix Table A" that breaks out the "deflators" used for various parts of the GDP tables. The table raises several issues:

- The numbers are so volatile on a quarter-to-quarter basis that a rational observer might lack confidence in their values.
- In some cases the numbers defy common sense or real-world experiences (e.g., the last two quarters of computer prices inflating at annualized rates exceeding 60%).
- The aggregate inflation rate was shown to be 0.4% even though the "GDP Excluding Food and Energy" (i.e., excluding the two key items which have recently seen the most sharply rising prices) was inflating three times faster at a 1.2% rate and total "Gross Domestic Purchases" was showing a 2.1% inflation rate.
- None of these numbers translate in any obvious way into the official U.S. inflation rates published by the Bureau of Labor Statistics.

That same rational observer might conclude that the values in this table have been hijacked by volatile seasonal adjustment factors or a blind conformance to historical methodologies that have lost touch with reality. As a consequence it is possible that quirky "deflators" might have caused the published 2.79% growth rate to include between 1% and 2% of uncorrected inflation.

Real Final Sales

And lastly, we would be remiss in not mentioning that in the past we have often highlighted the BEA's "real final sales of domestic product" growth rate as the truest indication of the health of the economy. The "real final sales" figure is simply the headline growth rate less the impact on that rate of changes in private business inventories -- thus better reflecting the growth in the final domestic consumption of finished goods. For five consecutive quarters that number has indicated a much more anemic recovery than the headline growth rate, and a number of commentators (including ourselves) have cited it as an indication that the headline number was being artificially boosted by an unsustainable growth in business inventories.

At first glance that worm has turned with a vengeance. "Real final sales" are now reported to be growing at an astronomical 6.7% annualized rate, after averaging less than 1% annualized over the past 6 quarters of "recovery."

While a 6.7% annualized growth rate for final domestic consumption would certainly be welcome, there seems to be a major disconnect between the BEA's reported changes in inventories and other sources of industrial production data. One of the culprits in this report may be the price of imported goods (e.g., oil) and services, which the BEA now says was (plausibly) increasing at a 21.4% annualized rate during the fourth quarter of 2010 -- after reporting that it was decreasing at a 9.2% rate in the third quarter. This means that the quarter-to-quarter swing in this line-item "deflater" was 31%, enough to cause several spurious (and phantom) changes to the reported "real" economy as shown in the BEA's report.

While one might expect inventories to be valued exclusively using some variation of book-value FIFO accounting logic, they are in fact additionally impacted by an "inventory valuation adjustment" (or "IVA") that utilizes price changes from a "Fisher formula" (that according to the BEA's notes "incorporates weights from two adjacent quarters; quarterly indexes are adjusted for consistency to the annual indexes before percent changes are calculated") when converting inventory values from "nominal" to "real". For this reason a rapidly rising "deflater" will cause "real" inventories to deflate even as physical quantities remain relatively constant.

This is where a bizarre "deflater" can do its damage, because at the highest level the BEA's logic attributes any variations in the quarter-to-quarter rates of change in inventory valuations to changes in factory production levels. So, even though the BEA reported that "nominal" inventories still grew by a modest \$6.8 billion, the reported quarter-to-quarter rate of change for "real" inventory growth (seasonally adjusted, of course) dropped by \$114.3 billion -- implying a corresponding (phantom) drop in inventory production. That was enough to swing the contribution of inventories on overall GDP growth from the third quarter's positive 1.61% to the fourth quarter's negative 3.70%. When that 3.70% apparent drag is removed from the headline number we get the astounding "real final sales" growth rate well north of 6.5% -- a number most people on "Main Street" would view as sheer lunacy.

This whole process tends to highlight one of our major concerns: that the quality of traditional economic data drops sharply during times of dynamic or unprecedented changes in the economy. We would trust these reports more if the BEA had previously experienced periods of economic dislocations or governmental interventions on the same scale as those being seen today.