

## **A Larger American Economy?**

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In late July the US Commerce Department released revised figures for Gross Domestic Product for 2012 which raised this measure of the American economy by \$560 billion – the size of Belgium – or by 3.5 percent. Figures for the US government's budget deficit and outstanding debt were not changed, so the ratios of these entities to GDP declined, for example the budget deficit declined from 7.0 percent previously to 6.8 percent.

Is this a trick by American statisticians to make the budget outlook look better? No. Figures for GDP are frequently revised, for three quite different reasons. First, some components of GDP initially represent rough guesses, since the informed public wants estimates of GDP as soon as possible, before hard numbers are available. GDP estimates for the second quarter of 2013 were released in late July, before many numbers for June were available, for instance. As these numbers become available, GDP will be revised to take them into account. Second, coverage of GDP may be incomplete, particularly if the economy is changing rapidly, and GDP is revised to take the more complete coverage into account. For instance, a few years ago China revised its estimate of GDP upward by 17 percent, mainly to reflect better coverage of the rapidly growing service sectors of the economy, which had been under-emphasized in earlier collection of data.

Third, from time to time the conceptual basis for GDP is altered, reflecting long-run changes in the economy and/or a re-conceptualization of the notion of GDP itself. The July upward revision of US GDP involved a small component of the first reason, but reflected mainly a re-conceptualization. The most significant change (\$397 billion for 2012) was to add expenditures on research and development to final demand, thus recognizing its role as investment for the future. Original works of entertainment (e.g. cinema), literary output, and artistic output (together \$74 billion in 2012) were also added, on similar grounds.

In making these changes, the GDP accounts are belatedly recognizing a shift from the industrial age – when investment was seen to be tangible things like buildings and equipment – to a knowledge-based economy, where many investments, in the proper sense of expenditures now for the sake of higher income in the future, are now intangibles, such as research. (Software production was added to GDP a few years ago.) The firm Walt Disney is still enjoying income on its early animations of nearly 80 years ago, and we still enjoy classical music written over 300 years ago.

Of course, these conceptual changes apply to other countries as well, so if the US revisions are emulated elsewhere, GDP will rise there also. And they apply to the US past; indeed, revisions reflecting the new concepts were made back to 1929, the first year of the official US GDP accounts. But the new items have been growing more rapidly than the traditional components of GDP, so growth rates have

also been revised upward, by 0.1 percent a year over the entire period 1929-2012, by 0.2 percent annually for the more recent 2002-2012.

Why were these changes not made earlier? In fact they were agreed to be desirable in a technical committee of the OECD nearly a decade ago; but it takes time to find the best measures for such a conceptual change, running back in the case of the United States to 1929. This was not the only anomaly in the GDP. Expenditures on education, surely an investment in the future of one's children, and one that empirically is known to increase their incomes, continues to be counted as "consumption" in GDP rather than investment. Also (like R&D), it is measured by inputs – salaries of teachers, purchases of equipment, etc. – rather than by outputs such as value of automobiles or aircraft produced. While most people correctly believe that education is highly important and beneficial, it is difficult to measure accurately and persuasively the output of educational expenditures.

The United States is noted among countries for its low level of recorded investment relative to GDP. The recent changes will raise that ratio, as would the re-labeling of education as investment rather than consumption.

GDP per capita has also risen by 3.5 percent, since the estimates of US population have not changed. Are Americans that much better off? No. Reality has not changed, only our measurement of reality. GDP is not in fact a measure of physical well-being for the population, but rather a measure of how a country's resources – its labor, capital stock, and land – are used for productive purposes. Perhaps not surprisingly, GDP per capita is highly correlated, both across countries and over time within countries, with indicators of well-being in which people are directly interested, such as longevity, good health, literacy, infant mortality (where the correlation is negative). So GDP per capita (corrected for differences in local purchasing power) is often used as a rough proxy for material well-being. But the correlations are not perfect. And GDP is a measure of how a country's resources are used, not whether they are used well or whether they enhance human well-being. Military expenditures (including those in war) are included. And GDP does not allow directly for depletion of mineral resources or for damage to the environment. Increased air pollution from higher GDP reduces well-being rather than enhancing it.

Perhaps the next conceptual changes to GDP – or, preferably, a new measure of aggregate economic activity – will offer a more accurate measure of material well-being, to include environmental factors. Even that will not be a measure of happiness, which while often (weakly) correlated with material well-being is an altogether different, and largely psychological, concept.