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On Economy, Raw Data Gets a Grain of Salt

By BINYAMIN APPELBAUM

WASHINGTON — When the government announced in April that the economy had grown at a moderate annual pace of 1.8 percent in the first quarter, politicians and investors saw evidence that the nation was continuing its recovery from the depths of the financial crisis. The White House called the news “encouraging” and the stock market extended its bull run.

Three months later, the government announced a small change. The economy, it said, actually had expanded at a pace of only 0.4 percent in the first quarter.

Instead of chugging along in reasonable health, the United States had been hovering on the brink of a double-dip recession.

How can such an important number change so drastically? The answer in this case is surprisingly simple: the Bureau of Economic Analysis, charged with crunching the numbers, concluded that it had underestimated the value of vehicles sitting at dealerships and the nation’s spending on imported oil.

More broadly, politicians and investors are placing a great deal of weight on a crude and rough estimate that has never been particularly reliable.

“People want the best information that we have right now. But people need to understand that the best information that we have right now isn’t necessarily very informative,” said Tara M. Sinclair, an assistant professor of economics and international affairs at George Washington University. “It’s just the best information that we have.”

The growth rate that the government announces roughly one month after the end of each quarter — news much anticipated in Washington and on Wall Street — has been off the mark over the period from 1983 to 2009 by an average of 1.3 percentage points, compared with more fully analyzed figures released years later, according to federal data.

The second and third estimates, announced at subsequent one-month intervals, are no more

reliable. The first quarter this year offers a typical example. The government estimated the annual growth rate at 1.8 percent in May and 1.9 percent in June before issuing its most recent estimate of 0.4 percent.

Perhaps more important, the government underestimated the depth of the recession by a wide margin, initially calculating that the economy contracted by an annual rate of 3.8 percent in the last quarter of 2008. It now estimates the contraction rate at 8.9 percent. Instead of an annual growth rate of 0.2 percent from the fourth quarter of 2007 through the first quarter of 2011, the government now estimates that the economy contracted at an annual rate of 0.2 percent during that period.

The basic problem is easy to understand: More than half of the ingredients in the first estimate are based in whole or in part on projections from past months. The government doesn't actually know how much people spend on their cellphone bills or how much companies spend on construction. It simply makes an educated guess based on past spending. Even in the third estimate, 22 percent of the data still comes from projections.

If basic assumptions start changing rapidly — business failures during a recession, start-ups during a recovery — the estimates can quickly lose touch with economic reality.

"When we most want timely information is when they're least able to give it to us," said Professor Sinclair. "That's exactly when those historical patterns are breaking down."

The Bureau of Economic Analysis, an arm of the Commerce Department, makes some efforts to warn users about these problems. It emphasizes transparency and is uncommonly open to public questions. It says it provides a valuable public service, but that the data reflects only the best available information. But policy makers, investors and the public continue to treat the data as highly significant.

"These are really not much more than educated guesses and yet the marketplace puts enormous weight on them because financial markets are high-frequency trading places based on immediate data," said Madeline Schnapp, director of macroeconomic research at TrimTabs Investment Research.

A growing number of economists say that the government should shift its approach to measuring growth. The current system emphasizes data on spending, but the bureau also collects data

on income. In theory the two should match perfectly — a penny spent is a penny earned by someone else. But estimates of the two measures can diverge widely, particularly in the short term, and a body of recent research suggests that the income estimates are more accurate.

Justin Wolfers, a professor of business and public policy at the Wharton School of the University of Pennsylvania, publicly predicted earlier this summer that the government would sharply reduce its estimate of first-quarter growth, simply by looking at the income estimate buried inside the bureau's initial release.

The income data also captured the depth of the recession much sooner.

"It is appalling how little attention we economists pay to measurement issues," Professor Wolfers said. "The expenditure data looked bad but not dreadful. The income data was dreadful. And it subsequently turned out the absence of urgency among policy makers was largely a result of looking at faulty data."

Professor Wolfers said that in his native Australia, the government estimates growth by averaging the two techniques with a third, related approach. Private firms use similar methods.

Officials at the bureau have said that measuring expenditures has proved to be a more reliable methodology. The estimates are very accurate in one important respect: it is exceedingly rare for the bureau to estimate that the economy is shrinking when it is actually growing, or that it is growing when it is actually shrinking. The bureau meets that standard 98 percent of the time.

What went wrong in the first quarter?

The largest change was because of an annual event. The Census Bureau completed an estimate of the value of vehicles awaiting sale in 2010, based on data collected directly from dealers.

Until July, the bureau had relied on an estimate from a private company, Ward's, which counts vehicles but estimates their values. Based on that data, the bureau estimated that inventories had declined by $30.3 billion in the fourth quarter as sales outpaced the arrival of new cars.

Last month, based on new data, it concluded that inventories fell by only $17.9 billion.

The bureau estimates that inventories shrank by an even smaller amount in the first quarter —

although it won’t get equally accurate data until next July — but the effect of the revision was to reduce the difference between the two quarters, and thus to reduce the rate of growth.

The bureau estimates that this change alone is responsible for nearly half the difference between its initial estimate of 1.8 percent first-quarter growth and its current 0.4 percent estimate.

A second major change involves the value of imported oil. The bureau announced a permanent change to its methodology last month to improve the way that it calculates the value of oil, and it concluded that spending on imported oil was higher than it had originally estimated. The details are byzantine but the result is clear enough: roughly 0.5 percentage points of growth vanished.