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The Upshot
STATISTICAL PUZZLE

Why You Can't Put Faith in Reports of First-Quarter Economic Slumps

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We have heard this story before: The recovery gathers momentum, but then as the new year gets underway, the reported pace of growth in gross domestic product stalls.

It's happening now. It happened in the first quarter of last year. And it happened in 2010, 2011 and 2012. Indeed, the pattern of weak first-quarter growth has occurred so often that it has led some economists to ask whether there's a problem in how the government calculates its G.D.P. numbers.

The "first-quarter effect" is rather large. In a recent research note to clients, Alec Phillips of Goldman Sachs highlighted the differential, noting that since 2010, "growth in Q1 has averaged 0.6%, while growth in the rest of the year has averaged 2.9%." CNBC's Steve Liesman has analyzed the data, finding that since 1985 "first-quarter growth has been by far the weakest of the four, averaging just 1.87 percent while the economy has grown 2.7 percent."

I have checked the math, and they've each gotten their sums right. Moreover, these differences are large enough that they are unlikely to simply reflect the effects of chance. And while Mr. Liesman is right that the

phenomenon is apparent over the past few decades, there's no evidence of it in the 1970s and 1980s.

It isn't a surprise that the economy has seasonal ups and downs. After all, summer vacations slow some industries, while others are chilled by winter snow, and the annual parade of holidays shifts spending throughout the year. But the government's economic statistics are meant to adjust for these predictable seasonal swings, through a process known as seasonal adjustment. But it appears that these adjustments have failed to do the job.

The exact way the seasonal adjustment algorithm works is complicated, but in essence, it finds how strong or weak the economy usually is in each quarter, then adjusts the numbers to account for those typical seasonal swings. If it's done right, there should be no systematic difference between economic numbers for the first quarter and any other quarter. The problem here is that the seasonally adjusted G.D.P. growth numbers still show a seasonal pattern, in which the first quarter has been weaker than other quarters. Statisticians call this "residual seasonality."

I reached out to the government statisticians at the Bureau of Economic Analysis to try to understand what lies behind the recurrent first-quarter slump. Their reaction seemed to suggest that they too were surprised by these findings, and they are digging into them. In a statement, Brent Moulton, the associate director for national economic accounts, said they were "currently examining residual seasonality in several series, which may lead to improvements in seasonal adjustments during the regular annual revision to G.D.P. scheduled for July."

I could find no indication of similar problems affecting the seasonal patterns of other economic indicators. For instance, an alternative (seasonally adjusted) measure of economic growth called gross domestic income has not recorded an unusual number of first-quarter slumps. Likewise, there is no systematic difference in the quarterly pattern of seasonally adjusted growth in nonfarm payrolls.

Thus, the puzzle of the first-quarter slump seems to be confined only to G.D.P. The recurring first-quarter slumps in this measure have also puzzled

Wall Street economists. Mr. Liesman reports that since 1985 they have underestimated first-quarter growth 80 percent of the time, which his analysis suggests is “the most for any quarter.”

Part of the problem may be that data for the first quarter are typically more variable than other quarters, and it is harder to accurately adjust highly variable numbers. Moreover, estimates of the economic growth rate in the first quarter have generally been revised downward over recent years.

The government is scheduled to release its estimates of the rate of first-quarter economic growth next Wednesday, and economists are expecting the numbers to show yet another economic first-quarter slump. But don't panic. My advice is to emphasize other economic indicators instead — at least until the government boffins can figure out whether the first-quarter slump is real or a statistical artifact.

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