Effect of the ‘Polar Vortex’ on Economic Activity

By Lisa Kenney


The polar vortex that descended on parts of the United States in the winter of 2013-2014 brought cold temperatures, record snowfalls, and possibly an economic slowdown. Anecdotes about boats delivering iron ore being unable to traverse the frozen Great Lakes — thus causing a delay in steel production — seemed to draw a connection between the weather and economic activity. But how accurate is that assumption?

Economists at the Chicago Fed studied whether this unusual winter actually caused the decline of economic indicators such as industrial production, employment, and housing starts from December 2013 to March 2014. They found that while weather had a significant, but short-lived, impact on economic activity, the effect was not large enough to account fully for the weak economy during that period.

They looked at both national and regional data for the actual winter weather and economic indicators. They also use historical data to determine if the economy has become more or less sensitive to weather changes over time.

Both national and regional data lead to similar results, though the national data are less clear because they cannot take into account regional variations in the weather. Some patterns can be attributed in part to the weather, but they cannot explain the magnitude and timing of the slowdown. Indeed, the researchers find that “an important share of the slowdown in the first quarter was driven by an inventory correction and the effect of foreign trade.”

Also, the timing of the decline was uneven across indicators: Some declined in January, others did so in February, and still others declined in more than one month.


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Faberman and Justiniano use data from the Job Openings and Labor Turnover Survey (JOLTS) to estimate the aggregate quit rate — a proxy for the pace at which workers move to new jobs — in each month since 2000. They find that the quit rate, along with wage growth, is highly procyclical, meaning it rises during economic expansions and falls during recessions.

The authors find that fluctuations in the quit rate appear to lead changes in the wage growth, peaking two to four quarters ahead. They also find that changes in the quit rate appear to lead changes in the inflation gap (the difference between actual inflation and long-run expected inflation). This suggests the quit rate may be a useful predictor of both future inflation and future wage growth.


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