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The Upshot

Derivatives Market Shows a Rising Fear of Deflation

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Economic View

By JUSTIN WOLFERS

Something unusual is happening to prices right now: They are falling.

The recent sharp decline in gas prices is part of the story, but there is now growing fear that the Federal Reserve will undershoot its own 2 percent inflation target, hindering the economic recovery. There's also a small but worrying risk that the economy could enter a deflationary rut.

At issue are inflation expectations. Economists believe expectations are critical because they shape the decisions individual shopkeepers make when deciding whether and by how much to raise their prices. Beliefs about inflation create a self-fulfilling prophecy in which today's expected inflation becomes tomorrow's actual inflation. The trick to managing inflation then, is to manage inflation expectations. In practice, though, it is very hard to observe what people expect inflation to be.

That's why it's worth paying close attention to the disturbing portents from a relatively young and obscure derivatives market that provides new perspectives on inflation expectations — tracking not only the likely level of inflation, but also the risks that inflation might be too high, too low or just right. In this market, derivatives called inflation caps and inflation floors are, effectively, bets on the trajectory of prices over the next few years.

Think of it as a prediction market for inflation. Just as prediction markets are better than experts, computer models or surveys at forecasting elections, sporting events and the weather, it seems likely that these markets are better at capturing inflation expectations.

The math involved is tricky, but recent research by Yuriy Kitsul, a Fed economist, and Jonathan Wright, a professor of economics at Johns Hopkins University, provides a useful guide.

For example, the two economists show that by buying and selling various derivatives you can form a portfolio expected to pay $100 if the average rate of inflation over the next five years is between 1.5 and 2.5 percent. At the moment, this bet sells for $49. If traders are betting to maximize their expected profits (more on this in a moment), then this price will rise or fall until it reflects the probability of that level of inflation. The $49 price suggests the market believes there's slightly less than a 50-50 chance that the Fed will deliver an outcome that is roughly consistent with its stated inflation target of 2 percent.

While traders view inflation of roughly 2 percent as the most likely outcome, the market is also telling us the probability of other levels of inflation — or deflation. And it is saying that the risks of missing the 2 percent target are extremely unbalanced: It is twice as likely that inflation will come in below the Fed's target as above it.

Moreover, for a technical reason, these odds most likely understate the probability that the Fed will undershoot its inflation target. (That's because the derivatives are bets on the future of the Consumer Price Index, while the Fed's goal is tied to a different index, for personal consumption expenditures, and it tends to grow a few tenths of a percentage point slower.)

The implication is that the market perceives the Fed as likely to be too hawkish over coming years, perhaps because the central bank will raise interest rates earlier or higher than is necessary to hit its 2 percent inflation target.

The prediction market also highlights the risks of the type of really awful outcomes that keep economists up at night.

Consider the threat of deflation, in which prices fall over an extended period, often hand in hand with economic stagnation. The market currently gives a 6 to 7 percent chance that prices will either be flat or will fall over the next five years. This sort of prolonged deflationary slump — similar to one Japan has experienced — would probably spell bad news for the United States. While the market is not saying this outcome is likely — indeed, it has revised down the odds a bit in recent weeks — it does suggest it is worth worrying about.

Of course, the specific probabilities inferred from market prices should be taken with many grains of salt. In particular, traders may not be betting that prolonged deflation is probable, but rather be buying insurance against such a grim occurrence. Thus, prediction market prices might overstate the probability of bad outcomes. Nonetheless, these prices embed a powerful message for policy makers: Just as people buy flood insurance when they're concerned that a storm might do terrible damage, traders might be buying deflation insurance because they fear the risk of vast economic damage if the economy were to enter a deflationary rut.

A common concern voiced by the Fed's hard-money critics is that the central bank has already increased the money supply so much that it will lose control of inflation as the economy recovers. The market does not give much stock to these concerns, however, suggesting that there's only a 1 percent chance that inflation will average 5 percent or more over the next five years. Next time people tell you that higher inflation is coming, remind them that they can get rich in the derivatives markets if they're willing to put their money where their mouth is.

For several years now, these markets — as well as related inflation-indexed bonds and inflation swaps — have been a source of comfort for policy makers, as they reported that inflation expectations were roughly consistent with the Fed's inflation target. But over the last half-year, the markets have sounded a largely unheralded alert siren, reporting that expected inflation has fallen sharply. Inflation is now expected to run half a point or more below target for many years.

To some extent, this decline in inflation expectations reflects a vote of confidence in the Fed, as earlier fears of high inflation have come to be seen as an increasingly distant possibility. But it also reflects fears of Fed timidity, as the risk of prolonged deflation remains high.

By this measure, the Fed has been halfway successful at establishing its credibility, successfully bolstering its inflation-fighting bona fides, but failing to instill sufficient confidence that it stands ready to fight the drag of very low inflation or outright deflation.

Justin Wolfers is a senior fellow at the Peterson Institute for International Economics and professor of economics and public policy at the University of Michigan. Follow him on Twitter at @justinwolfers