Inflation is volatile. To hedge it, investors need to keep up.

Unstructured price data from online retailers can anticipate inflation shifts and improve hedging strategies

Inflation has surged as the world emerges from the Covid-19 pandemic, leading many investors to refocus on a critical problem that experts have been debating for decades: how to hedge portfolios—and the future purchasing power of investors—against inflation. It's a difficult problem to solve. Countless academic papers have studied inflation and how it affects asset prices, looking at everything from stocks and bonds to real estate and gold. Their findings are discouraging: there just aren't many assets that offer a reliable hedge.

Exhibit 1: Online Prices Can Move Ahead of U.S. CPI

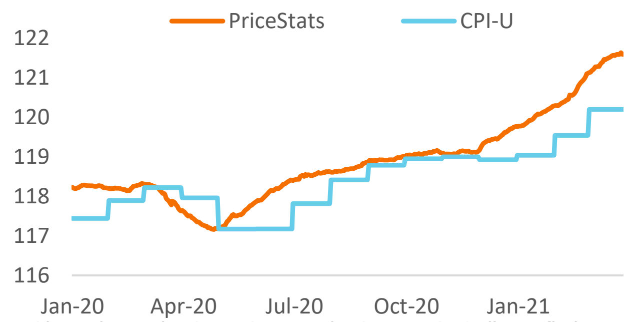

Chart shows the State Street PriceStats U.S. Online Inflation Series (orange) and the U.S. Consumer Price Index for Urban Consumers, Not Seasonally Adjusted (blue) from January 2020 through March 2021.Source: State Street Global Markets, PriceStats.

Treasury Inflation Protected Securities (TIPS), introduced in 1997, represent the only U.S. asset class whose returns are linked explicitly to inflation, but they have drawbacks. For one, their yields are lower than normal treasury bonds during most periods, when inflation is stable. This is because, all else equal, treasury bond investors demand a higher yield (lower price) relative to TIPS because they are bearing the uncertainty of future inflation risk. In an ideal world, investors would capture the higher yield of treasuries when inflation is benign and shift into TIPS to capture their price appreciation as inflation expectations rise. To do this, however, they need a good leading indicator of the market's collective inflation expectations.

Enter PriceStats. Founded by two MIT academics in the late 2000s, PriceStats uses web scraping technology to capture daily prices for millions of consumer products sold by hundreds of online retailers around the world. It turns out that online prices can provide an effective leading indicator not only of official CPI, but also of the market's expectations for inflation. There are a number of reasons for this. For one, they can capture online prices each day and produce an inflation index with a three-day lag. Compare that to most government CPI releases, which are monthly with a two-week lag. Even more importantly, retailers tend to adjust online prices first, before in-store prices. It's cheaper to do so, and moreover, online consumers are less price sensitive than in-store shoppers who tend to have longer memories. All of this means that online prices tend to lead offline prices.

In this paper, we put online inflation data to the test by constructing a simple hedging strategy. When online prices are rising rapidly, we shift into TIPS. When they're falling or stable, we hold treasury bonds. Our results—derived from both back tests as well as more complex statistical analysis—provide compelling evidence that online prices are a useful input to a dynamic inflation hedging strategy.

For more on this topic, see our 2022 working paper on SSRN: **"Inflation Hedging: A Dynamic Approach Using Online Prices"** by Alberto Cavallo, Megan Czasonis, Will Kinlaw, and David Turkington.

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