

How new online tool accurately measures inflation

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Inflation is a crucial economic indicator, since rising prices can hurt consumers and trigger political discontent. It is also hard to measure. In the United States, Bureau of Labor Statistics employees track over 20,000 prices in person or via phone, which are then aggregated into the Consumer Price Index, a monthly gauge of price levels. But what if the Internet could help measure inflation, and in real time? That is the aim of an ambitious new enterprise, the Billion Prices Project, launched by Roberto Rigobon and Alberto Cavallo, two professors at the MIT Sloan School of Management.

By refining a program that culls prices from the Web, the Billion Prices Project now tracks more than 5 million consumer items every day, sampled from more than 70 countries. The project began collecting price data in 2007 and became publicly available in November.

“We thought it would be great to capture price information on a daily basis and generate a real-time [inflation](#) statistic,” says Cavallo.

Rigobon and Cavallo began by collecting data from the price lists of supermarkets. “Food and goods sold at supermarkets are an essential element of people’s consumption, and prices are readily available online, even in developing countries,” explains Cavallo. The project’s focus then broadened to consumer electronics, clothing and furniture, and real estate. In each case, the project’s software scans the code of Web pages for prices and, to ensure consistency, collects detailed product descriptions, to account for factors that influence costs, like size and

brand.

The results have very closely matched the government statistics in the United States over the last three years, which gives the researchers confidence the project is working.

“The temptation is to say this is going to be a replacement for the Consumer Price Index,” says Cavallo. “But we like to think of it as a complementary approach.” The United States, he says, does an “excellent job” monitoring inflation, but the Billion Prices Project could reveal inflation trends more quickly, add detail to our knowledge of prices by expanding the sample of prices used, and make the results more readily available to economists.

Policing the numbers

Globally, the Billion Prices Project could even affect countries suspected, unlike the U.S., of releasing dubious inflation information. Part of the impetus for the project came from Cavallo’s concern, in 2007, that the government in his native Argentina was changing its statistical methods to make inflation seem less severe. “People went to the supermarket and would realize inflation was much higher than the government was saying,” says Cavallo. “I thought there had to be a better way to do this.”

Argentine officials have denied releasing inaccurate information. Still, if the Billion Prices Project becomes a widely accepted inflation indicator, the existence of real-time public numbers could pre-empt the ability of governments to fudge inflation data.

In any case, economists think the project’s approach will help their research. “One of the huge benefits a project like this offers is that you can capture a lot of higher-frequency dynamics that might be masked in

the monthly data,” says Brent Neiman, an assistant professor of economics at the University of Chicago Booth School of Business, adding that the initiative applies to the research on prices generally and not just inflation. The Billion Prices Project could let economists study how price changes at one firm influence competing firms. Daily price data could also help economists examine the relationship of exchange rates and prices: In a highly globalized economy, how much do the daily shifts in exchange rates affect the prices of imported goods?

Using only monthly data, notes Neiman, “You could be very far off in what the actual change in an exchange rate was that influenced prices.” In this way, he says, the project “is a really creative idea to try to get information.”

Work in progress

To be sure, the MIT researchers do not regard the Billion Prices Project as a finished product; they would like the project to involve as many economic sectors as possible. At present it is easier to find online price data for tangible goods rather than services, the sector of the economy that deals with the performance of work for others.

“Some services, like transportation, are easier for us to get,” says Cavallo. “But health care is quite complicated, because few countries post any health-care costs online. We are already collecting the costs of prescription drugs, but in health-care costs are very disaggregated. Getting a price for health-care services is going to be more difficult.”

Neiman suggests that the cost of labor, or wages, would also be a valuable addition, but a difficult one to make, since “payment to labor is a complicated amalgam of many things besides the actual salary, and this methodology has to confront more challenges before it can be used in that field.”

Still, Rigobon and Cavallo are confident that online inflation indices will gain widespread use among the government economists responsible for producing official numbers. “Right now we’re on the cutting edge,” says Cavallo. “But eventually the statistical offices of governments will incorporate it to complement the traditional methods.” The Billion Prices Project is a singular experiment at the moment, but the true sign of its success may come when it is no longer unique.

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