EconoFact Chats: Measuring and Understanding Inflation

Dan Sichel, Wellesley College

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Michael Klein:

I'm Michael Klein, Executive Editor of Econofact, a nonpartisan, web-based publication of the Fletcher School at Tufts University. At Econofact, we bring key facts and incisive analysis to the national debate on economic and social policies, publishing work from leading economists across the country. You can learn more about us and see our work at www.econofact.org.

Michael Klein:

People don't like it when inflation rises, and they really don't like it when inflation rises to its highest rate in decades. In June 2022, inflation reached 9.1%, the highest rate since 1981. In a recent Econofact Chats episode, I spoke with Karen Dynan, former chief economist at the US Treasury about the sources for the current high rates of inflation, the policies that are being put in place to bring it down, and the prospects for its decline. Today, I'm pleased to be speaking with Dan Sichel of Wellesley College about how to understand the effects of inflation, what it captures about the reduction in purchasing power, and what it misses. Before joining Wellesley in 2012, Dan worked for more than 20 years at the Federal Reserve Board. Even more relevant for today's discussion, Dan recently served as chair of a National Academy of Sciences panel that wrote a report on modernizing the Consumer Price Index. This is not Dan's first time as a guest on EconoFact Chats. In fact, he was our inaugural guest when we launched this podcast in the summer of 2020.

Michael Klein:

Dan, thanks for joining me once again on our podcast.

Dan Sichel:

It's nice to be back.

Michael Klein:

Dan, let's start out with some basics about the recent inflation numbers, using them to illustrate some other important points. First, what does that most recent statistic, 9.1% inflation, represent?

Dan Sichel:

So the CPI inflation number compares the price of a basket of goods purchased by an average or typical household today to the price of the same baskets of goods from a year ago, so trying to get broad measure of how much overall prices have changed.

Michael Klein:

Okay, so let's break that down a little bit. First, what does the acronym CPI mean, and what does it reflect?

Dan Sichel:

So the CPI stands for, is the acronym for Consumer Price Index. And as I mentioned, it's trying to capture changes in prices of a basket of goods that households buy, and that basket is chosen to represent what a typical household living in an urban area purchases and how much it costs to do that. And then again, tracking the changes over time.

Michael Klein:

One thing that I find myself explaining to people is a difference between high prices and high inflation.

Dan Sichel:

Yeah, that's a really important distinction and I also find myself explaining that often. So prices, of course, are the level of prices like a gallon of gasoline is $5 a gallon. Inflation is how much that price is changing over time. So we can have really high prices and low inflation, or we can have really low prices and high inflation, just depending on what's happening in the environment.

Michael Klein:

Dan, the CPI isn't the only price index. To use another acronym, there's something called the PCE. Can you explain what that is?

Dan Sichel:

Yeah, so the PCE price index, where PCE stands for Personal Consumption Expenditures, is... and actually, that's the price index that the Federal Reserve follows more closely. I think the CPI gets more attention in the national media, though the Fed actually looks at the other one. So without getting too much into the weeds, these measures use different formulas for combining prices of individual items and the PCE Index covers everything households consume, rather than just what they buy. So for example, health insurance provided by an employer is included in PCE because households are consuming that, but it's not in the CPI because households aren't directly paying for.

Michael Klein:

Another important distinction, Dan, is what's called headline inflation and core inflation. And these can be quite different from each other. In fact, that's what we're seeing now, right?

Dan Sichel:

Yeah. Headline, it is an important distinction. The headline inflation, as the term gets called, is the inflation rate for all goods and services or changes in the prices of all goods and services, and what gets called core inflation strips out prices of food and energy, and that's done because those prices tend to be quite volatile. That's especially true now, given what's happening in Ukraine and all of the supply chain disruptions that have led to some very big increases in prices of oil and certain foods.

Dan Sichel:

So for example, in the latest CPI report, headline inflation, as you mentioned, was 9.1%. Core inflation was 5.9% because, of course, there were very big increases in some of the food categories and also, in the energy categories. So given this difference in the volatility in food and energy prices, economists and policy makers often look at core inflation to get an idea of the underlying trend. But that said, that headline index is super important because people buy plenty of food and energy and they care a lot about the prices of those items.

Michael Klein:

Yeah, I was looking at the data when it came out. And as you mentioned, the CPI inflation was 9.1%, but part of the components were really striking. The Food at Home Index rose by more, 12.2%, and the

Energy Price Index rose by 41.6% over the last 12 months. So that's really dragging up the overall CPI, and it's having a big effect, but as you mentioned, the core inflation rate is a lot lower.

Michael Klein:

And when we think about policy efforts to fight inflation, is there more scope for bringing down core inflation rather than headline inflation?

Dan Sichel:

So in a way, yes, the main policy tool used for bringing down inflation is the Federal Reserve raising interest rates to cool demand in the economy. And that, of course, means that those higher interest rates will have a bigger bite on interest-sensitive spending, which tends to be for bigger items like houses, cars, and other big ticket item; as compared to higher interest rates having a big effect on food or energy prices, since, as we're seeing now, those prices can be heavily influenced by a host of other factors besides just overall level of demand in the economy. That said, of course, higher interest rates around the world tend to slow global demand. Slower global demand, all else equal, would be expected to lead to a decline in energy prices. So in the main, these tools for reducing inflation likely affect core inflation, first and foremost, but they will have effects on energy and some of the other items in headline inflation measures.

Michael Klein:

And I think it's worthwhile mentioning that inflation is not just a problem in the United States, but in many other countries as well. And those countries' central banks are also raising their interest rates, so we might see a slowdown in growth and perhaps this would feed through to energy and food prices as well.

Dan Sichel:

Yeah, I think that would be a good expectation because as you said, central banks all around the world are in a pattern of raising interest rates rather aggressively right now.

Michael Klein:

Dan, in the introduction, I mentioned that inflation is really unpopular, and in the conversation that I had with Karen Dynan about a month ago, she alluded to one reason for this, that people's wages and salaries typically don't keep up with inflation over a few months or even a year, but eventually, they do so over a longer horizon. But there are other issues as well, ones that arise when we think about how inflation affects different people.

Michael Klein:

So for example, I just don't drive that much. I live only three miles from my office, so the big jump in gas prices doesn't affect me as much as someone who, say, has to spend an hour driving to work each day.

Dan Sichel:

Yeah, so that's a really important point. The differences in what people buy can absolutely affect their inflation experience. As we were talking about before, the CPI is calculated to represent the average household, but really, most households are very different than average in terms of the mix of things that they buy, what's in their household budgets. So for the most part, that wasn't such a big deal in recent decades because prices of many items kind of rose and fell together.

Dan Sichel:

But more recently, with the surge that you mentioned in food and energy prices and also, rents increasing more rapidly, these differences in budget shares can make a really big difference in people's inflation experience, and I think it often leads people to think there's something wrong with the Consumer Price Index. Not the case that there's something wrong with the index, it's just the index is measuring the average experience, and most people's experience is different than the average.

Michael Klein:

Well, I like to think that I'm not average, and I guess that's right.

Dan Sichel:

Well, we're all above average, right?

Michael Klein:

If we lived in Lake Wobegon, but that's an allusion that some of our younger listeners might not get.

Dan Sichel:

Absolutely. Correct.

Michael Klein:

So Dan, more broadly, high food and fuel prices hit poorer families harder than those who are better off because poorer families spend a higher proportion of their income on groceries, heating, gas, and so on.

Dan Sichel:

Yeah. And that point is really missed by the overall aggregate CPI inflation numbers because, of course, again, it's capturing the average rather than the experience of these different groups. Turns out, that one of the recommendations to the Bureau of Labor Statistics in that National Academy's report that you mentioned at the top was for the Bureau of Labor Statistics to develop specific measures of inflation that reflect the actual inflation experience of people at different levels of income. So for example, just as you were suggesting, food and rents make up a bigger share of spending for lower income households than they do for higher income households, so one would want to take account of that in thinking about inflation experiences for people who are in different places in the income distribution.

Dan Sichel:

Another interesting point, in addition to differences in what people buy, so think of that as what people are putting in... if you're thinking of a grocery store, what are people putting into their grocery carts; people also shop at different stores, so think of that as Kroger versus Publix. And it turns out that there are differences, too, in how fast prices change for similar items at different stores. So a complete look at what is the inflation experience of lower income versus higher income households would have to capture both these differences in what people buy and these differences in where people buy the items that they're buying.

Michael Klein:

Dan, there already are statistics on incomes by different income levels, but I guess those are going to be deflated or adjusted for inflation right now with a common CPI. So in a way, those are not accurately measuring what economists call the real effect; that is, the inflation adjusted effect of changes in income are for these different groups. So I guess that recommendation would be very useful, not just for inflation, but understanding incomes across different groups as well. Is that correct?

Dan Sichel:

Yeah. So that's a key reason why these CPI numbers by income group would be so valuable. Bureau of Economic Analysis over in the Department of Commerce has developed measures of personal income by income decile. But again, if all they have is an aggregate price index to convert those nominal measures to reals, they can only use the common Price Index, but if price indexes became available, inflation measures became available by income group, they could get much more accurate measures of changes in real incomes and real incomes per person or per household for people situated in different places on the income distribution.

Michael Klein:

There's been a lot of talk recently of people calling what's happening "skimp-flation." That is, that maybe the price of something is the same, but for example, candy bars are getting smaller or fewer items are put into a package. Do price statistics account for this?

Dan Sichel:

Yeah, so the folks at the Bureau of Labor Statistics who put the CPI together do a good job of tracking changes like the shrinking size of candy bars. They'll price candy by the ounce, rather than by the bar, so that if a bar gets smaller, fewer ounces in a package, they're going to pick that up. I also noticed on a recent flight that the size of onboard snacks is shrinking with many, many fewer chips in a bag, in a bag of chips.

Dan Sichel:

Though, of course, getting away from food items, for more complicated products like, say, an iPhone where there also are changes over time, maybe not related to skimp-flation, but also changes in the actual product over time. That's a harder thing to track. Though the analysts at BLS work pretty hard to try to do that as best they can.

Michael Klein:

So given what people say about airplane food is not necessarily the case that you're worse off if there's less food on a flight, I suppose, or if proportions are smaller.

Dan Sichel:

Fair point. Fair point.

Michael Klein:

Dan, you're talking about the quality of goods, in a way, and inflation measures the erosion of purchasing ability, the rising costs of a basket of goods, but things in the basket change over time. For example, my current car has a heated seat, a backup camera, and a good stereo system and is a lot safer than a comparably priced car from 20 years ago. And it's easy to find other example of goods that are much better now or weren't even imagined 20 or 30 years ago. Cell phones, powerful laptops, better quality medicines come to mind, as well as a much bigger range of goods that were available before better shipping and globalization.

Michael Klein:

How does this affect our understanding of purchasing power and the effects of inflation on eroding purchasing power over longer periods of time?

Dan Sichel:

So that relates back to the comment I made a minute ago about iPhones and changes in iPhones or other complex products. So right, lots of products, not just iPhones, many, many products have undergone pretty dramatic changes over time. Economists would broadly refer to that either as quality change for existing items or the introduction of new goods, for completely new items. And when we measure inflation, what we want is a measure that provides apples to apples comparison, so we're comparing the same thing over time, which gets hard when the products themselves are changing. And as you said, it wouldn't really make sense to directly compare the price of your car today to the price of the car you were driving 20 years ago or, to be even more dramatic, to the price of Model T in the year they were introduced in 1908. So given these differences analysts at BLS, at the Bureau of Labor Statistics use a set of statistical techniques to try to value, to estimate the value of these improvements over time and to adjust prices of today's car so that they can get apples to apples comparison of price of today's car versus the price of a car a year ago. It's not perfect. It gets pretty complicated, gets pretty deep in the weeds, but in many cases, these adjustments are going to be first order correct.

Michael Klein:

And over shorter periods of time, I guess, is not as big an issue. For example, looking at the 9.1% inflation today, it's not like there's been this huge introduction of goods that we have to worry about quality changes or new goods just over the course of the last year. Correct?

Dan Sichel:

Yeah, that's right. If we were to think about the effects of introduction of new and improved products, when inflation rates were really low, around 1 or 2%, then these differences might be a bigger fraction of the overall, bigger share of the overall inflation rate. But with inflation at 9%, these kinds of things are going to be dwarfed by the overall inflation rate. And the bottom line message from the CPI report yesterday and recent inflation prints is inflation's really high and a lot higher than it had been.

Michael Klein:

What about the fact that especially during the pandemic, some goods just weren't available. There may have been a price label, but it was on an empty shelf, so you can think of that price as effectively, I guess, infinity. Inflation statistics would not capture this feature of a loss of purchasing ability, would it?

Dan Sichel:

No, they wouldn't. And that's in a time like the pandemic when there were so-called stockouts of a lot of items that certainly affected people's shopping experience, but the way the Consumer Price Index is set up, the way it's constructed, it's not going to capture those effects. Recently, some academics have looked at the issue to try to think through the effects of stockouts on kind of household wellbeing, but it is not something that's going to get captured in the official Consumer Price Index numbers.

Michael Klein:

So inflation today is risen to the point where it's one of the major concerns for policymakers, but also politicians because rightly or wrongly, they get blamed for inflation. And I'd like to thank you, Dan, for helping to explain how inflation is measured and how we can best understand it and what both the measurements show and what they fail to show. So once again, thank you for joining me a second time on EconoFacts Chats.

Dan Sichel:

Very happy to be with you. It was a lot of fun doing this.

Michael Klein:

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