Inflation with Covid Consumption Baskets

Rapidly Changing Consumption Baskets Create Bias in Official Estimates of CPI

The Covid-19 Pandemic and subsequent lockdowns and social-distancing guidelines have significantly altered global consumption patterns. Spending in certain sectors such as travel, hotels, and recreation has decreased dramatically, while other sectors such as home necessities and groceries have done the opposite. Traditional CPI expenditure weights are unable to capture these shifts as they are typically updated annually and tend to use data lagged by several years. These measures are therefore slow to respond to large-scale shifts in consumer demand, which in turn leads to a biased estimation of the true inflation experienced by an average consumer.

To more accurately capture actual consumer transactions, we use card-based expenditure data and adjust the weights in our consumption basket based on these consumption patterns. This leads to large shifts in the importance of certain sectors. For instance, in the US, transportation has a 15.7% weight in US CPI, but after adjusting for actual expenditure, transportation falls to 6.3% of our basket during the pandemic. Likewise, Food at Home increased from 7.6% in CPI to 11.3% using our expenditure data.

Once the adjustments to the consumer basket are made, we then recompute inflation using official data. Due to the fall in consumption for sectors undergoing significant deflation, we find that the true inflation experienced by consumers is significantly higher than the headline CPI numbers in most countries tested. Some countries, however, show lower inflation with the altered consumption baskets. For instance, in the US, headline Annual CPI increases from 0.35% using CPI weights to 1.06% using our adjusted weights. In Germany, however, Covid inflation decreased due to the surprisingly large inflation of 4.2% in recreation and culture. In aggregate, of the 17 countries tested, 11 exhibit higher annual inflation when calculated with our new consumption baskets, with 6 exhibiting lower inflation. These results have important implications for policy-makers trying to respond to the crisis, as they suggest that the cost of living for the average consumer is rising faster than is implied by official CPI.

For more on this topic, see our 2020 working paper on SSRN: “Inflation with Covid Consumption Baskets” by Alberto Cavallo.
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