

Research Spotlight

# Measuring Innovation's Effect on Health Care Spending Growth

November 13, 2023

Technological innovation is believed to be a key driver of health care spending growth, and understanding this relationship is important, as growth in spending due to innovation may reflect improvement in patient care and welfare, rather than inflation, inefficiency, or a less healthy population.

However, health care innovation has historically been difficult to measure, as there are hundreds, if not thousands, of unique medical conditions and even more treatments that evolve over time. A common approach to measure the effects of technology on spending is to examine select case studies, though applying this approach to all new technologies is extremely difficult. An alternative approach, the residual approach, controls for measurable drivers of spending (such as aging of the population, changing insurance coverage, changing prices, and rising incomes), where growth in spending that cannot be explained by these known factors is assumed to be driven by innovation. The residual approach is limited because other factors such as market power, inefficiency, or changes in the health system organizations may also enter the residual, which would contaminate the contribution of medical innovation.

A [new research paper](#) by Abe Dunn and Lasanthi Fernando of the U.S. Bureau of Economic Analysis (BEA) and Eli Liebman of the University of Georgia takes a unique approach to this measurement challenge. The paper uses a comprehensive database on cost-effectiveness studies from the Tufts Cost-Effectiveness Analysis Registry to proxy for the level of innovation by condition. Cost-effectiveness studies, the authors explain, are a well-suited proxy for innovation, as they capture entry of new treatments or exploration of treatments for distinct populations. To connect the cost-effectiveness data to information on population spending, the paper uses data from the BEA Health Care Satellite Account (HCSA) for the years 2000–2017. The HCSA is a distinct account of national health care spending that decomposes health care spending by condition rather than by type of service, such as physician offices, hospitals, or prescription drugs. This distinction is important, as technologies are typically applied to specific conditions.

The result of this analysis shows a significant relationship between the number of studies and the rate of spending growth by condition, providing unique evidence consistent with the theory that innovation drives spending growth. The paper finds that innovation accounts for about 18 percent of the total growth in real spending per capita (in 2017 dollars), but the estimates range from 13 to 32 percent, which is slightly lower than recent residual-based studies that suggest innovation accounts for between 25 and 50 percent of the growth rate in spending. The authors reason that the 18 percent contribution to spending growth is likely a lower bound on the actual impact of innovation. They also note that this result has important implications for measurement and welfare, as it suggests that a substantial portion of the spending growth is driven by new technologies that might improve treatment outcomes but also drive spending higher.

This *Research Spotlight* was prepared by *Survey of Current Business* staff. It uses language from the working paper “A Direct Measure of Medical Innovation on Health Care Spending: A Condition-Specific Approach” by Abe C. Dunn , Lasanthi Fernando , and Eli Liebman. [The working paper is available in full on the BEA website.](#)

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