

Taking Account...

BEA study uses Medicare data to create price indexes

The rising cost of health care looms as a significant long-term economic challenge, making accurate health care statistics indispensable for economists and policymakers. In 2010, the National Research Council's Committee on National Statistics called on statistical agencies to explore the viability of producing statistics on expenditures and prices by disease rather than by service. Since then, several research efforts have explored how such indexes might be constructed. Anne E. Hall and Tina Highfill, economists with the Bureau of Economic Analysis (BEA), have contributed to the growing body of literature in this area with a recent study that used regression analysis to create price indexes based on data for publically insured beneficiaries, specifically Medicare patients.

Measuring the output and price of Medicare-financed health care is critically important, given that the program covers 50 million beneficiaries and accounts for 21 percent of total health care spending.

The authors used data from the Medicare Current Beneficiary Survey, in which administrative medical claims data are matched with beneficiary health and utilization surveys to provide a comprehensive estimate of annual medical care expenditures, including spending not covered by Medicare. The survey covers beneficiaries in fee-for-

service Medicare and in Medicare HMOs who reside in communities or in institutions.

Hall and Highfill created expenditure indexes for 2001–2005 by regressing total health care expenditures on dummy variables for diagnoses of 27 illnesses for each year. The coefficients from the regression were used to divide up each beneficiary's spending. Spending for each illness was aggregated over beneficiaries. An average price for each illness in each year was calculated by dividing the total expenditure by the number of patients diagnosed with the illness. The average prices were then aggregated into an overall expenditure index.

The analysis found that the aggregate disease-based price index grew at an average annual rate of about 6 percent. (The study calculated prices according to two models of spending, producing estimates of 5.8 percent and 6.3 percent.)

The index is a powerful tool for understanding the sources of growth in Medicare spending. Nominal spending per beneficiary rose 8.6 percent per year in 2001–2005. After deflation, however, spending rose only 2.3 percent per year. Deflation removes the effect of price growth, leaving the part of spending growth due to growth in prevalence of diagnosed illness. The study found that about 27 percent of the growth in nominal spending was due to growth in prevalence, with much of the re-

mainder due to growth in prices.

The growth in prices was broken down further into growth in input prices and quantity of services (intensity of treatment). The former grew at 5.9 percent per year, suggesting that all of the price growth of treating an illness was due to growth in average prices of services and drugs. Growth in the quantity of services provided, therefore, seemed to play a small role. Decomposing growth into these sources is important because excessive growth in input prices and quantity of services are likely to lead to very different policy solutions. Further claims work could shed light on the sources of growth in prices.

The primary disadvantage of the study's approach is one familiar in the literature on disease-based indexes: the index is not quality adjusted for changes in health outcomes that result from changes in medical care. An ideal medical expenditure index would adjust for improvements in health outcomes resulting from improved medical care. If the productivity of health care is rising over time, a price index that captures this rise in productivity will rise more slowly (or fall) than one that does not. However, the authors sought to calculate a medical expenditure index aggregated over all diseases, which means they would have had to adjust for outcomes separately for each illness, which would have been infeasible.