The Supply Side of Health Care

Introduction

The microeconomics of health care is usually analyzed through the National Health Care Expenditure Accounts (NHEA), a set of detailed historical nominal health demand published by Centers for Medicare and Medicaid Services (CMS). While the NHEA represents the demand side of health care, surprisingly little is known about the structural detail of health care industry supply chain output, employment, and value added. Of the 14 industry categories identified in the BSA, industry accounts, only two of them clearly are health care industries: (1) Ambulatory health care and (2) Hospitals and related care. The combined value added (supply) of these two categories was 8.6 percent of GDP in 2012, well short of health expenditures (demand) of 17.2 percent of GDP. To obtain a tally of value added equivalent to the demand data, we must recognize that the health care is not just produced in the hospital room or the doctors’ office but also by the outside accountant who balances the doctor’s books and the utility that supplies the hospital’s electricity.

National Health Expenditures

The Centers for Medicare and Medicaid Services (CMS) estimated that in 2012, the U.S. spent $2.8 trillion on health care related goods and services. This total increased from 5% of GDP in 1960 to over 7% in 2012. Total personal health care (PHC) was $2.5 trillion, or about 85% of total health care expenditures. This includes all payments for physician and clinical services and prescription drugs—excluding the share of premiums paid by employers, consumers, and other payors. The remaining 15% of total health care expenditures in 2012 was the net cost of private health insurance (premiums minus claims). The other sources of demand in the NHE come from private investment in capital equipment and structures, and from federal, state, and local government consumption and investment spending for health administration, education, and public health activities.

These health care demand figures provide information concerning the commodity production, import penetration, and industrial income and employment composition of health care supply. While health care supply includes clinical sectors such as hospitals and demand is satisfied in both by almost every sector of the economy, including wholesale, retail, and professional services.

Data & Methodology

Using the input-output (IO) framework of Inforum’s LEF model, we provide a better understanding of the supply side of health care. The core data set is a detailed series of 140 commodity x 140 commodity IO tables, which contain information on investment, government, export, and import final demand data from 1998 through 2012. These tables have been developed from the BSA’s annual tables and the 2002 benchmark IO table, but the LEF data set contains more detail for health care demand and supply compared to those provided by the BSA tables.

The first step is to define the goods and services as recorded in the NHEA as equivalent final demand items in the LEF accounts. We then take out imports and eliminate the demand to commodity definitions of the IO tables. Then, the IO accounting identity computes the total domestic output requirements for fulfilling this demand.

Value Added & Employment

Health care value added and employment for each industry is found by multiplying the health care gross output requirements by the corresponding historical value added-to-industry output ratio taken from the BSA industry accounts. A full accounting of health care value added is listed below. In 2012, we find that value added production for health care occupations was 4.6 percent of GDP.

The aggregate number of health care associated jobs was almost 28 million in 2012, up from 21 million in 1998. In terms of total U.S. civilian jobs, health care employment grew by an annual average of 2.1 percent compared to 0.3 percent for general employment. The health care share of employment now rose from 14.7 percent in 1998 to 18.7 percent in 2012.

Conclusion

Theoretically total health care demand (NHC) is equal to the sum of direct and indirect imports plus the domestic value added generated in satisfying final demand. The table and figures below indicate that domestic value added attributable to health care production accounted for 97.7 percent of NHC in 1998 and 93.9 percent in 2012. Direct imports added 2.0 percent in 1998 and 3.8 percent in 2012, and indirect imports were 3.5 percent of NHC in 1998 and 4.9 percent in 2012. In this exercise, the unrestricted value is a measure of the accuracy of the process. Much of this error is due to simplifying assumptions, such as the assumption that the import share for goods and services are constant across categories of intermediate and final demand. The discrepancy is fairly small, with fluctuation between -2.0 and 3.0 percent of NHC, with its largest absolute value in 2011.