
Determinants of Health Care Demand and Expenditure: A Review of the Literature

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Abstract:

Purpose: Health care constitutes a major component of modern economies, affecting population well-being, employment growth, and national income allocation. This paper provides a comprehensive review of the international literature on the determinants of health care demand and expenditures, with particular emphasis on price, income, population aging, technological change, and the supply of physicians and nurses.

Design/Methodology/Approach: Detailed literature review.

Findings: The evidence reviewed indicates that the price elasticity of demand for health care is consistently negative and inelastic, supporting the characterization of health care as a normal good. Considerable debate persists regarding income elasticity, with empirical results ranging below, near, and above unity across countries, time horizons, and econometric specifications.

Practical Implications: The study highlights the conceptual ambiguity surrounding the definition of health care demand, noting that prior research has measured it using alternative indicators such as hospital stays, physician visits, and medical expenditures, which partly explains variation in empirical findings.

Originality/Value: The findings suggest that income elasticity varies internationally and is sensitive to distinctions between short-run and long-run dynamics, as well as to the nature and cost of specific medical services.

Keywords: Health care demand, health care expenditures, population aging, technological change, health care workforce.

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1. Introduction

Health care constitutes a critical component of the global economy in multiple respects. First, population health directly affects quality of life and economic productivity. Despite its importance, access to health care remains uneven; for example, millions of individuals in the United States lack health insurance, resulting in limited access and lower quality of care (Obama, 2016).

Second, the health care sector is a major source of employment. Health-related occupations have grown rapidly in recent years and are expected to continue expanding. Third, health care accounts for a large and increasing share of national income across countries. Health care expenditures in the United States, in particular, are substantially higher than in other developed economies, with physician incomes often more than double those of their counterparts abroad (Yang, 2025).

From an economic perspective, the demand for any good or service is influenced by several key factors: price, income, population size, and consumer preferences. Applying this framework to health care, the literature identifies five primary determinants of health care demand and expenditure: the price of health care services, population income, demographic structure (particularly aging), technological progress in medicine, and the supply of health care professionals.

This study reexamines the diverse factors influencing health care demand and expenditure by synthesizing findings from empirical literature, with emphasis on price and income elasticities, demographic change, technological advancement, and supply-side effects.

2. Conceptualizing the Demand for Health Care

Before examining the determinants of health care demand, it is necessary to address a fundamental issue: the definition of “demand for health care.” There is no universally accepted definition, and different studies operationalize demand in different ways.

Early studies define demand as hospital length of stay (Feldstein, 1971), visits per capita (Fuchs and Kramer, 1972), physician visits (Scitovsky and Snyder, 1972), or total medical expenditures (Eichner, 1998). Other researchers disaggregate health care into specific services. For example, Newhouse and Phelps (1974) distinguish between inpatient length of stay and outpatient visits, while later studies focus on the probability of use or expenditures on inpatient versus outpatient care (Newhouse and Phelps, 1976; Newhouse *et al.*, 1993). Some studies further divide services into acute and preventive care.

These varying definitions complicate empirical comparisons but collectively illustrate the multidimensional nature of health care demand.

3. Price Effects and Health Insurance

Health care is unique in its relationship to price, largely because of the central role of health insurance. The effective price faced by consumers consists of several components: deductibles, co-payments, co-insurance rates, and maximum out-of-pocket limits. These components jointly determine the marginal cost of care and are commonly used in empirical studies of health care demand (Zhao, 2022).

Despite institutional complexity, price has been shown to affect health care demand. Empirical estimates of price elasticity consistently find negative values. Fuchs (1972) reports elasticities ranging from -0.10 to -0.36 , while Newhouse and Phelps (1976) estimate an elasticity of -0.25 .

Grossman (1972) reports a value of -0.50 , and Karatzas (2000) finds approximately -0.25 . More recent studies using instrumental variables confirm these findings, with Ellis, Martins, and Zhu (2017) estimating an overall elasticity of -0.44 across services.

Although these studies differ in data, time periods, and definitions of health care, their results are remarkably consistent. This convergence strengthens confidence in the conclusion that health care demand is price-inelastic but responsive, consistent with health care being a normal good.

4. Income Elasticity of Health Care Demand

The income elasticity of health care demand has generated extensive debate, particularly regarding whether it exceeds unity. Early work by Newhouse (1977) estimates income elasticities between 1.15 and 1.31 using OECD data. Subsequent studies, including Leu (1986), Parkin et al. (1987), Brown (1987), and Gerdtham *et al.* (1992), report consistently above one.

In contrast, other studies find elasticities closer to or below unity. Karatzas (2000) reports a value of 0.60, Murthy and Okunade (1992) estimate 0.92, and DiMatteo (2005) reports values as low as 0.01 for Canada and 0.50–0.73 for the United States. Panel data studies by Baltagi and Moscone (2010) yield elasticities between 0.67 and 0.90.

Overall, the evidence suggests that income elasticity varies substantially across countries and methodologies. While values below one is common, they are generally closer to unity than to zero.

Petrosyan (2005) reconciles some of these findings by distinguishing between short-run and long-run elasticities. She finds that long-run elasticities exceed one in the United States, Japan, and Australia, while short-run elasticities remain below one. This distinction highlights the importance of adjustment processes over time.

The debate over income elasticity also raises theoretical questions about whether health care is a necessity or a luxury. Certain services, such as life-saving procedures, are necessities, while others, such as cosmetic surgery, are discretionary. Affordability and cost magnitude further influence responsiveness to income changes.

5. Demographic Change and Aging

Population aging is a significant determinant of health care expenditure. As individuals age, morbidity increases, leading to greater utilization of medical services and pharmaceuticals.

Numerous studies confirm the positive relationship between aging and health care expenditures, including Leu (1986), Gerdtham *et al.* (1992), DiMatteo (2005), Karatzas (2000), and Crivelli *et al.* (2006). DiMatteo and DiMatteo find age elasticities of approximately 0.81 for both Canada and the United States.

Petrosyan (2005) finds that aging significantly affects health expenditures in the long run for the United States, Canada, and Japan, but not consistently in the short run. She argues that aging influences expenditure gradually, which explains why some short-run studies fail to detect significant effects.

6. Supply of Health Care Professionals

The supply of physicians and nurses is another important determinant of health care expenditures. In markets with asymmetrical information, suppliers may influence demand, a phenomenon known as supplier-induced demand (McGuire and Pauly, 1991).

Empirical evidence on physician supply is mixed. Karatzas (2000) finds a positive and significant relationship between physician supply and government health expenditures. DiMatteo reports similar findings for Canada. Cristea and Thalassinos (2016) examined the interrelation between private pension plans and the financial markets in EU.

Petrosyan (2005) finds positive long-run effects in the United States and Australia but negative effects in Japan and Canada, reflecting institutional differences in health care systems and government regulation.

Nurses exhibit similar supply effects. In many countries, nurses and nurse practitioners perform functions traditionally reserved for physicians (Laurant *et al.*, 2019). Karatzas (2000) estimates the elasticity of health care demand with respect to nurse supply to be approximately one.

Measurement challenges persist, particularly due to the lack of data on hours worked, which complicates interpretation of supply effects.

7. Technological Progress

Technological change is widely regarded as a major cause of rising health care expenditures. Newhouse (1992) identifies technology as the primary contributor to long-term cost growth.

Empirical studies operationalize technology in various ways, including medical equipment counts, surgical procedures, life expectancy, infant mortality, time trends, and R&D expenditures. Petrosyan (2005) finds that technological effects differ across countries and time horizons.

In the United States, technology increases expenditures in the short run but reduces them in the long run due to improved prevention and efficiency. In Canada, short-run spending is constrained by government budgets, leading to higher long-run costs. In Japan, technology effects become significant only in the long run.

These findings underscore the institutional dependence of technology's impact on health care costs.

8. Conclusion

This study reviews the principal determinants of health care demand and expenditure identified in the literature. The evidence indicates that health care demand is influenced by price, income, population aging, technological progress, and the supply of physicians and nurses.

Price elasticity is consistently negative and less than one, confirming that health care is a normal good. Income elasticity remains debated, with evidence supporting both luxury and necessity interpretations depending on country and time horizon. Aging significantly increases health care demand, particularly in the long run. Technological progress plays a dominant but institutionally contingent role.

Finally, the supply of health care professionals affects expenditures, lending partial support to the hypothesis that supply induces demand.

Taken together, these findings highlight the multifaceted and country-specific nature of health care expenditure growth, with important implications for health policy and cost containment strategies.

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