Using marginal analysis to evaluate health spending trends

by George I. Kowalczyk, Mark S. Freeland, and Katharine R. Levit

Introduction

Traditional estimates on national health expenditures (NHE), including trends in the average amounts spent per capita and the average share of the gross national product (GNP) allocated to health spending, are useful indicators. These average measures have been used in analyzing reasons for rising health costs, projecting future trends, and researching policy options. The alternative methodology presented here is a preliminary look at marginal analysis—the incremental cost of health care as a proportion of the incremental change in GNP. This is one measure of the ability to finance health care. In this article, marginal analysis is described and the usefulness of this tool for understanding historical health care spending patterns and as a leading indicator of future spending patterns is discussed.

Average analysis

Health spending as a percent of the GNP is a traditional measure of health spending relative to the total output of the economy. Trends in the ratio of health spending to the GNP indicate the ability and willingness of consumers, firms, and governments to allocate consumption and production to the health care sector.

The U.S. population's increasing appetite for health care consumption is documented by the increasing share of the GNP devoted to meeting health care demands. National health expenditures as a percent of the GNP more than doubled from 1960 to 1987 (Table 1). Health care spending as a percent of the GNP rose from 5.2 percent in 1960 to 11.1 percent in 1987. The private share increased about 65 percent (from 3.9 percent to 6.5 percent of the GNP) during the same period, while the public share increased about 250 percent (from 1.3 percent to 4.6 percent of the GNP). The surge in the government health care spending share of the GNP occurred in the late 1960's with the inception of the Medicare and Medicaid programs and in 1974 with the coverage of the disabled population by Medicare. Since that time, both public and private shares have grown in tandem. With few exceptions, both private and government shares of the GNP increased continuously throughout the entire period.

With the exception of the first year of the Medicare prospective payment system (PPS), the combined expenditures for hospital and physician's services consumed a steadily increasing share of the GNP from 1960 to 1987 as shown in Table 1. However, the implementation of public and private cost-containment policies that focused on inpatient hospital services altered the overall growth and mix of services in the 1980's. For the 1982-87 period, the growth in hospital spending slowed and the share of the GNP stabilized. The growth in physician spending continued at about the same rate and the share of the GNP for physicians' services continued to increase, particularly during 1986 and 1987. Thus, the long-term trend of faster growth for hospital care than for physician services was reversed and the long-term pattern of combined hospital and physician spending growth was slightly lower than historical rates (Letsch, Levit, and Waldo, 1988).

Marginal analysis

Analyzing the average relationship between health spending and the GNP is useful for understanding patterns of health spending for specific time periods and trends in these patterns over time. However, such averages, by their very nature, lag the marginal or incremental decisions of consumers and providers.

As a practical example, decisions on the purchase of health insurance are frequently made at the margin. An individual might compare his salary increase ($1,000, for instance) and the increase in his health insurance premium ($250 per year). In this example, 25 percent of his additional income is potentially consumed by increases in health premiums. He must decide how much additional income he is willing and able to allocate to the purchase of health insurance instead of to the purchase of other goods and services. Faced with simultaneous increases in rent, food, and other items, the individual's decision, based on this marginal or incremental analysis, may be to search for alternative health coverage with a lower premium requiring a lower proportion of his total income.

Many spending decisions are made based on marginal analysis as purchasers determine how much of their increased (or decreased) income is allotted to the incremental purchase of different goods or services. Marginal analysis enables public and private sector decisionmakers to use currently available information on incremental costs and the ability to pay to assist in making budgeting choices.

Marginal analysis provides several advantages in analyzing health spending for the Nation. First, examining the incremental increase in health spending as a share of the marginal or incremental increase in the GNP provides insight into the implicit marginal spending priorities of consumers and third-party payers. As will be shown, marginal increases can also be a leading indicator of future average levels of health care spending. Finally, above-normal incremental increases in spending for particular
services or products or by specific financers of care could indicate areas where public or private policy changes are likely to be initiated.

**Health policy relevance**

Health care spending for the Nation can be analyzed in a manner similar to the example of the individual and his health care premium. For ease in this analysis, the 1960-87 period is broken into shorter periods that were governed by specific health policy initiatives. The first period, 1960-65, represents the years prior to the implementation of the Medicare and Medicaid programs. The second period, 1965-72, includes the years when the effects of the Medicare and Medicaid programs on health spending were most evident. The third period, 1972-73, falls within the timeframe of the Economic Stabilization Program (ESP) for Wage and Price Controls and includes the most stringent period of that program. From August of 1971 through April of 1974, ESP was in effect. Since ESP was phased into existence, the results of these controls were not noticeable for the health industry until 1972-73.

During the fourth period, 1973-76, wage and price pressures in the health sector, pent up during ESP, were unleashed after the lifting of wage and price controls in the hospital and physician sectors. Strong growth in health care spending resulted. The fifth period, 1976-79, included the Voluntary Effort (VE) which began in the fourth quarter of 1977. The health sector was asked by government to voluntarily control the rise in hospital costs and physician fees. Self-policing actions by the industry were felt to be preferable to explicit cost controls.

The VE was losing its effectiveness during the sixth period, 1979-82, as cost pressures within the health sector built up. These pressures led to the passage of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA), which limited hospital cost increases, and to the passage of the Medicare prospective payment system (PPS), legislation in 1982. During the seventh period, 1982-85, PPS was implemented and this had a dramatic effect of containing the growth in spending for hospital inpatient services. The last 2 years, 1986 and 1987, are presented separately, because grouping them could mask trends which may be emerging.

### Gross national product growth patterns

In calculating national health spending as a proportion of the GNP, the effects of the

| Year | Total | Private | Public | Hospital | Physician | Hospital | Physician |
|------|-------|---------|--------|----------|-----------|----------|-----------|
| 1960 | $26.9 | $20.3   | $6.6   | $14.8    | $9.1      | $5.7     | $515.3    |
| 1961 | $28.8 | $21.5   | $7.3   | $15.8    | $9.9      | $5.9     | $539.8    |
| 1962 | $31.3 | $23.4   | $7.9   | $17.2    | $10.7     | $6.5     | $574.6    |
| 1963 | $33.5 | $25.0   | $8.6   | $18.6    | $11.7     | $6.9     | $606.9    |
| 1964 | $37.5 | $28.2   | $9.3   | $20.8    | $12.7     | $8.1     | $649.8    |
| 1965 | $41.9 | $30.9   | $11.0  | $22.4    | $14.0     | $8.5     | $705.1    |
| 1966 | $46.3 | $32.7   | $13.6  | $25.0    | $15.8     | $9.2     | $772.0    |
| 1967 | $51.5 | $35.2   | $19.0  | $28.5    | $18.4     | $10.1    | $816.4    |
| 1968 | $56.2 | $38.1   | $22.1  | $32.3    | $21.1     | $11.1    | $882.7    |
| 1969 | $65.6 | $40.7   | $24.9  | $35.9    | $24.2     | $12.6    | $963.9    |
| 1970 | $75.0 | $47.2   | $27.8  | $42.3    | $28.0     | $14.3    | $1,016.5  |
| 1971 | $83.5 | $51.8   | $31.6  | $46.9    | $31.0     | $15.9    | $1,027.7  |
| 1972 | $94.0 | $58.5   | $35.4  | $52.4    | $35.2     | $17.2    | $1,126.8  |
| 1973 | $103.4| $64.0   | $39.4  | $58.0    | $38.9     | $19.1    | $1,350.3  |
| 1974 | $116.1| $69.1   | $47.0  | $66.3    | $45.0     | $21.2    | $1,472.8  |
| 1975 | $132.7| $76.4   | $56.3  | $73.7    | $52.4     | $24.9    | $1,588.4  |
| 1976 | $150.8| $89.0   | $68.8  | $88.4    | $69.9     | $27.6    | $1,762.0  |
| 1977 | $169.9| $101.0  | $69.7  | $100.5   | $68.7     | $31.9    | $1,926.8  |
| 1978 | $197.9| $110.1  | $79.6  | $112.0   | $76.2     | $35.8    | $2,249.7  |
| 1979 | $214.7| $124.2  | $90.5  | $127.2   | $87.0     | $40.2    | $2,508.2  |
| 1980 | $248.1| $142.8  | $105.2 | $148.5   | $101.6    | $46.8    | $2,791.9  |
| 1981 | $280.7| $165.8  | $121.2 | $173.9   | $119.1    | $54.8    | $3,052.6  |
| 1982 | $323.8| $188.4  | $135.7 | $197.0   | $135.7    | $61.8    | $3,166.0  |
| 1983 | $367.2| $209.7  | $147.6 | $215.2   | $148.6    | $68.4    | $3,405.7  |
| 1984 | $388.5| $229.6  | $159.6 | $230.5   | $156.1    | $74.4    | $3,772.2  |
| 1985 | $419.0| $244.0  | $175.0 | $248.1   | $166.7    | $81.4    | $4,014.9  |
| 1986 | $455.7| $266.6  | $189.0 | $270.0   | $178.4    | $91.6    | $4,240.3  |
| 1987 | $500.3| $293.0  | $207.3 | $297.5   | $194.7    | $102.7   | $4,528.7  |

**NOTE**: Data from 1960-64 may differ conceptually from data for 1965-87.

**SOURCE**: Health Care Financing Administration, Office of the Actuary: Data on national health expenditures from the Office of National Cost Estimates. Data on the GNP from the U.S. Department of Commerce, Bureau of Economic Analysis.
denominator can be as, or even more, important than the numerator in affecting the change in share. Although time periods have been grouped according to health policy relevance, the influence of GNP growth on the average and marginal share devoted to health must not be ignored. During periods of slower-than-average growth in real GNP, health spending tends to rise as a proportion of the GNP (on average and at the margin); in contrast, faster-than-average real growth in the GNP usually corresponds to slower growth in the ratio of NHE and the GNP on average and at the margin.

The pre-Medicare and Medicaid (1960-65), ESP (1972-73), VE (1976-79), and PPS (1982-85) periods were times of higher-than-average real growth in the GNP (Table 2). Holding all other factors constant, the expectation would be for health spending to grow more slowly relative to the GNP during these periods, resulting in shares of GNP at the margin being closer to the average. The opposite would tend to occur during the post-ESP (1973-76) and the post-VE (1979-82) periods when real growth in the GNP was slow or negative: One would expect to see higher-than-average marginal growth in NHE relative to GNP, independent of any actions relevant to health policy during these periods.

### Table 2

Average annual growth in real gross national product (GNP) and national health expenditures (NHE) as a share of GNP at the margin for selected periods: 1960-87

| Period  | Growth in real GNP | NHE as a share of GNP at the margin |
|---------|-------------------|-----------------------------------|
| 1960-65 | 4.6               | 7.9                               |
| 1965-72 | 3.2               | 10.3                              |
| 1972-73 | 5.2               | 6.4                               |
| 1973-76 | 1.0               | 11.2                              |
| 1976-79 | 4.1               | 8.8                               |
| 1979-82 | 0.3               | 16.6                              |
| 1982-85 | 4.8               | 11.2                              |
| 1985-86 | 2.8               | 18.3                              |
| 1986-87 | 3.4               | 15.6                              |
| 1980-81 | 3.3               | 10.0                              |
| 1980-87 | 2.7               | 14.1                              |
| 1986-87 | 3.1               | 11.8                              |

1Periods selected for relevance to health policy.

SOURCE: Health Care Financing Administration, Office of the Actuary; Data from the Division of National Cost Estimates.

### Analysis of health spending

Health spending as a percent of the GNP at the margin has typically been higher than health spending as a percent of the GNP on average (Table 3). During the 5-year period prior to the advent of Medicare and Medicaid, NHE as a percent of the GNP at the margin was 7.9 percent, while the average share was 5.6 percent. The marginal share during the 1960-65 period foreshadowed the eventual rise of the average share of the GNP to 7.9 percent in 1974. Similarly, the 1965-72 marginal share of 10.3 percent became reality on average in 1983, and the 11.2 percent marginal share of the 1973-76 period was almost reached by 1987. When the marginals are calculated using a 5-year moving average over the 1960-81 period, the marginal percent of the GNP becomes the average percent of the GNP in approximately 9 years. Although there is no assurance that this relationship will hold over other periods, it does illustrate how marginal analysis can be a tool to anticipate future growth in health spending.

The average and marginal shares of national health expenditures as a percent of the GNP are shown in Figure 1 and Table 3. In the pre-Medicare and Medicaid period (1960-65), the marginal share (7.9 percent) led the average share (5.6 percent) of the GNP by 2.3 percentage points. With the implementation of the Medicare and Medicaid programs (1965-72), the gap between the average (6.9 percent) and marginal (10.3 percent) shares widened to 3.4 percentage points as access to care was made available to more of the un- and under-served persons.

The wage and price controls of the most stringent portion of the ESP period (1972-73) was associated with a suppression of the marginal share (6.4 percent) of the GNP to 1.3 percentage points below the average (7.7 percent), only to rebound in the post-ESP period (1973-76). At that time, the marginal share (11.2 percent) exceeded the average share (8.1 percent) by 3.1 percentage points. The marginal and average shares of the GNP were similar (8.8 and 8.5 percent, respectively) from 1976 to 1979, the era of the VE.

The growth in the marginal share of the GNP going for health in the pre-PPS era (1979-82) might indicate the need for intervention in cost control. The marginal share (16.6 percent) grew 7.2 percentage points above the average (9.4 percent). During PPS (1982-85), the difference between the average (10.4) and marginal (11.2) shares of GNP narrowed to .8 percentage points, only to have the difference between the marginal and average rise again in the post-PPS years (1985-87). National health expenditures were about 16 percent of the GNP at the margin during 1986 and 1987, similar to the margins exhibited during the pre-PPS years (1979-82).

Hospital expenditures as a percent of the GNP on average and at the margin are illustrated in Figure 2. Hospital care, the largest sector of care within the national health expenditure series, accounts for 40 percent of total health care spending. As a result, hospital care is one of the categories of care most frequently targeted by public and private financers for cost control.

During the pre-Medicare and Medicaid period (1960-65), hospitals' marginal share of the GNP (2.6 percent) was greater than the average share (1.9 percent), indicating that hospital spending was increasing faster than the GNP. With the implementation of the Medicare and Medicaid programs (1965-72), the gap between the average (2.5 percent) and marginal (4.2 percent) shares of the GNP
Table 3
National health expenditures, private funds, public funds, hospital care, and physician services as a percent of gross national product (GNP), on average and at the margin: Calendar years 1960-87

| Year and period | National health expenditures | Private funds | Public funds | Hospital care and physician services | Hospital care | Physician services |
|-----------------|-----------------------------|--------------|-------------|--------------------------------------|---------------|-------------------|
|                 | Average Marginal | Average Marginal | Average Marginal | Average Marginal | Average Marginal | Average Marginal |
| Year            |                  |               |              |                                       |               |                   |
| 1960            | 5.2             | 3.9           | 1.3          | 2.9                                   | 1.8           | 1.1               |
| 1965            | 5.4             | 10.2          | 4.0          | 8.7                                   | 1.4           | 3.5               |
| 1970            | 5.5             | 8.2           | 4.1          | 4.6                                   | 1.4           | 1.6               |
| 1975            | 5.6             | 9.2           | 4.3          | 7.5                                   | 1.4           | 1.7               |
| 1980            | 5.9             | 8.1           | 4.4          | 5.0                                   | 1.6           | 3.1               |
| 1985            | 6.0             | 6.5           | 4.2          | 2.8                                   | 1.8           | 3.8               |
| 1990            | 6.3             | 11.7          | 4.0          | -0.5                                  | 2.3           | 12.2              |
| 1995            | 6.5             | 8.9           | 4.0          | 4.7                                   | 2.5           | 4.1               |
| 1997            | 6.9             | 10.4          | 4.2          | 8.4                                   | 2.6           | 4.0               |
| 1970            | 7.4             | 18.2          | 4.2          | 12.7                                  | 2.7           | 5.5               |
| 1971            | 7.6             | 9.7           | 4.7          | 5.3                                   | 2.9           | 4.4               |
| 1972            | 7.7             | 9.5           | 4.8          | 6.1                                   | 2.9           | 3.4               |
| 1973            | 7.9             | 6.4           | 4.7          | 3.7                                   | 2.9           | 2.7               |
| 1974            | 7.9             | 11.2          | 4.7          | 4.5                                   | 3.2           | 6.7               |
| 1975            | 8.3             | 13.2          | 4.8          | 5.8                                   | 3.5           | 7.4               |
| 1976            | 8.5             | 9.8           | 4.9          | 6.3                                   | 3.5           | 5.6               |
| 1977            | 8.5             | 9.2           | 5.0          | 5.8                                   | 3.5           | 3.3               |
| 1978            | 8.4             | 7.6           | 4.9          | 3.8                                   | 3.5           | 3.8               |
| 1979            | 8.6             | 9.7           | 5.0          | 5.5                                   | 3.6           | 4.2               |
| 1980            | 9.1             | 14.9          | 5.2          | 8.4                                   | 3.8           | 6.8               |
| 1981            | 9.4             | 12.1          | 5.4          | 7.1                                   | 4.0           | 5.0               |
| 1982            | 10.2            | 32.3          | 5.9          | 19.9                                  | 4.3           | 12.4              |
| 1983            | 10.5            | 14.0          | 6.2          | 8.9                                   | 4.3           | 5.1               |
| 1984            | 10.3            | 8.5           | 6.1          | 5.2                                   | 4.2           | 3.3               |
| 1985            | 10.4            | 12.6          | 6.1          | 6.2                                   | 4.4           | 6.3               |
| 1986            | 10.7            | 16.3          | 6.3          | 10.1                                  | 4.5           | 6.2               |
| 1987            | 11.1            | 15.8          | 6.5          | 9.2                                   | 4.6           | 6.4               |

Period 1

1960-65: 5.6    7.9  4.2  5.6  1.4  2.3  3.1  4.0  1.9  2.6  1.2  1.5
1965-72: 6.9    10.3  4.4  5.4  2.5  4.8  3.8  5.9  2.5  4.2  1.3  1.7
1972-73: 7.7    6.4  4.8  3.7  2.9  2.7  4.3  3.9  2.9  2.8  1.4  1.3
1973-76: 8.1    11.2  4.8  5.7  3.3  5.5  4.7  7.2  3.2  5.2  1.5  2.0
1976-79: 8.5    8.8  5.0  5.0  3.3  3.8  5.0  5.3  3.4  3.6  1.6  1.7
1979-82: 9.4    16.6  5.4  9.8  3.9  6.8  5.6  10.6  3.9  7.3  1.8  2.3
1982-85: 10.4   11.2  6.1  8.1  4.3  6.3  6.2  6.0  4.2  3.7  2.0  2.3
1985-86: 10.6   16.3  6.2  10.1  4.4  6.2  6.3  6.7  4.2  5.2  2.1  4.5
1986-87: 10.9   15.6  6.4  9.2  4.5  6.4  6.5  8.6  4.3  5.7  2.2  3.9

*a* Periods selected for relevance to health policy.

NOTES: Data from 1960-64 may differ conceptually from data for 1965-87.

In the following equations, HS represents any health spending category, GNP is the gross national product, n is the current year, and s is the year at the beginning of the period.

Calculate the “average” national health expenditures as a percent of gross national product as follows:

For individual years:

\[ \text{HS}_n \times 100 \]

For groups of years:

\[ \text{SUM(HS}_n \ldots \text{HS}_s) \times 100 \]

Calculate the “marginal” health spending as a percent of marginal GNP for individual years and for groups of years:

For individual years:

\[ \frac{(\text{HS}_n - \text{HS}_s)}{\text{GNP}_n - \text{GNP}_s)} \times 100 \]

For groups of years:

\[ \frac{(\text{SUM(HS}_n \ldots \text{HS}_s) - \text{SUM(GNP}_n \ldots \text{GNP}_s))}{\text{SUM(GNP}_n \ldots \text{GNP}_s)} \times 100 \]

SOURCE: Health Care Financing Administration, Office of the Actuary; Data from the Office of National Cost Estimates.

The period of the VE (1976-79) saw the marginal and average shares of the GNP converge for the hospital sector. These data confirm that the goals of VE were met during the early years of the program. As stated in the Voluntary Effort Quarterly, "One of the primary goals of the Voluntary Effort is to significantly narrow the gap between the growth rate widened. For 1972-73, the marginal share (2.6 percent) fell below the average (2.9 percent) as the effects of the most stringent portion of the ESP were felt, compounded by the fast growth in the GNP. During the post-ESP era (1973-76), the gap between the marginal (5.2 percent) and the average (3.2 percent) broadened to 2 percentage points.
Figure 1
National health expenditures as a percent of the gross national product (GNP), on average and at the margin: Calendar years 1960-87

| Percent of GNP | Average percent of GNP for year | Marginal percent of GNP over period |
|---------------|--------------------------------|-----------------------------------|
| 20            |                                |                                   |
| 19            |                                |                                   |
| 18            |                                |                                   |
| 17            |                                |                                   |
| 16            |                                |                                   |
| 15            |                                |                                   |
| 14            |                                |                                   |
| 13            |                                |                                   |
| 12            |                                |                                   |
| 11            |                                |                                   |
| 10            |                                |                                   |
| 9             |                                |                                   |
| 8             |                                |                                   |
| 7             |                                |                                   |
| 6             |                                |                                   |
| 5             |                                |                                   |
| 4             |                                |                                   |
| 3             |                                |                                   |
| 2             |                                |                                   |
| 1             |                                |                                   |
| 0             |                                |                                   |

Calendar year

1 Periods selected for relevance to health policy.

SOURCE: Health Care Financing Administration, Office of the Actuary: Data from the Office of National Cost Estimates.

of hospital expenses and the growth rate of nominal Gross National Product (GNP). This goal was chosen because hospital spending has taken an increasingly larger share of GNP during recent years. Nominal GNP was also chosen because it includes the effects of real economic growth and inflation, just as total hospital expenses include the effects of inflation and growth in volume of services." (Rosmann, 1979).

In the pre-PPS period (1979-82), the pressure of faster growth in the share of the GNP at the margin was intense for hospitals, with the gulf between the average (3.9 percent) and marginal (7.3 percent) rising to 3.4 percentage points. During the TEFRA and PPS implementation period (1982-85), the marginal share (3.7 percent) of the GNP for hospitals sunk below the average share (4.2 percent). For 1986 and 1987, the hospitals' marginal share of the GNP (5.2 and 5.7 percent) exceeded the average share (4.2 and 4.3 percent), pointing toward continued future growth in the hospitals' share of the GNP.

This article is a preliminary examination of the complex association between health spending and the GNP. It is worth discussing some caveats and cautions when analyzing spending patterns in the average and marginal relationships between health spending and the GNP. First, neither the average nor the marginal relationships of health spending to the GNP indicates how much should be spent on health care relative to other goods and services. This is a normative question that has to be explicitly addressed based on societal priorities. Second, marginal analysis of health spending to the GNP should not be used in isolation from other types of analyses to examine trends in health spending. Instead, it should be viewed as a complementary approach that organizes the data in a different way to help clarify spending patterns and choices. A single method of data analysis cannot substitute for prioritized spending choices based on relative costs and benefits. Thus, marginal analysis cannot substitute for judgments in making spending choices, but it can bring additional information so that the decision process is clarified.

Another important point to keep in mind is that a change in marginal or average percent of the GNP can have different implications for health policy depending on whether the change is driven by change in the GNP or health spending. If the marginal and average portions of health spending to the GNP should rise sharply, this may be the result of a precipitous drop in real GNP rather than an acceleration in health spending itself. The appropriate policy choice may be to stimulate growth in the GNP, not to slow health spending. The GNP fluctuates substantially more from year to year than health spending. Thus, it is important to diagnose why the marginal and average trends are shifting. It is also
appropriate to focus on patterns of marginal spending over a period of years rather than to look at 1 or 2 years in isolation.

Summary

The higher level of incremental health expenditures relative to incremental GNP since 1980 may not be sustainable for the long run, but trend lines indicate further increases in the share of the GNP allocated to health in the near future. The most recent Government projections indicate that health spending will continue to rise as a percent of the GNP, reaching 15 percent in the year 2000 (Health Care Financing Administration, 1987). This projected increase in the future average ratio of health spending to the GNP reflects, in part, current trends in marginal contributions that are higher than the average.

There are numerous theories as to how much society is willing and able to, or should, allocate to the purchase of health care relative to the GNP (Ginsberg, 1985). The trend of increasing health spending relative to the GNP, at the margin, is consistent with the theory that economic growth over the long run generally contributes to rising shares of national income committed to health care. Indeed, some argue that the United States, despite the rising share of the GNP devoted to health, is not spending enough on health care and that additional health care spending or reallocation of existing spending is required for the 37 million persons without public or private health insurance (Blendon, 1988).

In summary, the alternative methodology for measuring health spending trends compares the increment in health spending with the increment in the GNP as a measure of ability to pay. This method of analysis cannot solve the myriad of health cost problems, but it can help clarify the choices and judgments that society is implicitly making at the margin. By making these marginal allocation decisions more explicit, public and private decisionmakers can presumably make judgments that conform more closely to society's preferences, whether it be for more or less spending on health. This, in turn, should enhance the well-being of society.

Acknowledgments

The assistance of Helen Lazenby is gratefully acknowledged. J. Michael Fitzmaurice, Ross Arnett, III, Charles Fisher, and Dan Waldo provided helpful comments.
References

Blendon, R.: The public's view of the future of health care. *Journal of the American Medical Association* 259(24):3587-3593, June 24, 1988.

Ginsberg, E., ed.: *The U.S. Health Care System: A Look to the 1990s*. Totowa, New Jersey. Rowan & Allheld, 1985.

Health Care Financing Administration, Office of the Actuary, Division of National Cost Estimates: National health expenditures, 1986-2000. *Health Care Financing Review*. Vol. 8, No. 4. HCFA Pub. No. 03239. Office of Research and Demonstrations, Health Care Financing Administration. Washington. U.S. Government Printing Office, Summer 1987.

Let'sch, S. W., Levit, K. R., and Waldo, D. R.: National health expenditures, 1987. *Health Care Financing Review*. Vol. 10, No. 2. HCFA Pub. No. 03276. Office of Research and Demonstrations, Health Care Financing Administration. Washington. U.S. Government Printing Office, Winter 1988.

Rosmann, J. H., ed.: *Voluntary Effort Quarterly: Report on Health Economics and Finance*. Vol. 1, No. 2. Chicago. The Voluntary Effort, Oct. 1979.