

Are Health Industry Compensation Costs a Factor Influencing Employer Health Care Costs?

Employer health costs follow trends roughly similar to health industry compensation costs. This relationship holds because wages comprise a significant portion of total health industry expenditures.

BY HILERY SIMPSON

Health care benefits are a major component of U.S. compensation. They represent a significant expense to employers and a significant “good” to employees.¹ As such, it is important to determine which factors can impact employer health costs. Among those usually cited are rising utilization rates, the introduction of more sophisticated tests and procedures, and increased employer cost-containment efforts.² Another element that may also influence health care costs is overall health industry compensation.³

This article examines the links between employer health costs and health industry compensation. Wage and benefit data from the Employment Cost Index (ECI) and data on medical inflation as measured by the Consumer Price Index (CPI) are used to examine this issue. While it is possible to identify the factors affecting health costs, it is not

possible to quantify their individual impact using available BLS data. As a result, a qualitative discussion follows.

Wages and benefits are a major cost in the “production” of medical services. Consequently, increased compensation costs could result in rising health care prices and, eventually, increased employer health care costs.⁴ For this to happen, two links must be present in the long run. First, increased compensation costs should result in rising medical prices. Second, rising medical prices should lead to higher national employer health care costs. Data from the Bureau of Labor Statistics (BLS) show that the change in employer medical costs and health industry compensation have followed similar trends over time. However, many other factors may also affect this relationship. These include the productivity of labor and capital, utilization of

Hilery Simpson is an economist in the Division of Compensation Data Analysis and Planning, Bureau of Labor Statistics. Telephone (202) 606-6207.

medical services, and the development of new medical procedures, among others.

The U.S. private health care system is built upon employer-sponsored health insurance. About 90 percent of all private health insurance plans are employer-sponsored, covering 61 percent of all U.S. wage and salary employees.⁵ With a private sector annual expenditure of \$313.3 billion, health insurance is a significant cost to employers and covers a majority of workers.⁶ As a result, changes in health care costs and benefits are closely watched by both employers and employees, as well as by those who set policy at all levels of government.

The Employment Cost Index

The ECI, published quarterly, measures the rate of change in employee compensation including wages, salaries, and the employer's cost of providing benefits. Two characteristics distinguish the ECI from other compensation surveys. First, it measures total employee compensation for all establishments and occupations in both the private nonfarm and public sectors.⁷ Second, the ECI calculates the change in the cost of employing a fixed set of labor inputs. This eliminates changes in the occupational mix of the labor force over time.

The ECI's benefit indexes, like those for wages and salaries, are fixed-weight Laspeyres measures of the change in the cost of employing a fixed set of labor inputs.⁸ The fixed weights, currently industry and occupational employment counts from the 1990 Census, ensure that the changes measured by the ECI are unaffected by employment shifts among industries and occupations.

Using the Laspeyres index formula, the ECI uses a fixed basket of labor services priced from quarter to quarter. However, it does not fix the basket of services provided to employees within each benefit type

because the ECI is not a measure of employee income-in-kind from labor.⁹ Consequently, the ECI measures the cost and incidence of 23 benefits (including health insurance plans) offered to employees at employers' expense, whose provisions can change over time.¹⁰

Health care costs, as measured by the ECI, can change in three ways. First, employer-paid health insurance premiums can increase or decrease just as utilization within self-insured plans can change. Second, the establishment can add or eliminate a plan, possibly forcing employees to change health care providers. Third, employee participation in health plans can change when plan provisions or employee contribution requirements change.

Changes in health care plan costs usually are not directly correlated with changes in wages and salaries. In most cases, the cost of a plan is the same regardless of an employee's earnings.¹¹ Further, there commonly is a lag between the actual change in health costs and the subsequent change in plan costs incurred by employers and reported to the Bureau.

Trends in compensation costs for health industry workers

Since 1986, annual percent increases in compensation costs (wages and salaries, and benefits) for workers employed in health service establishments have ranged from a high of 7.1 percent at the start of 1990 to a low of 1.8 percent for the year ending December 1996. As this range indicates, the rate of increase in compensation costs fluctuated widely.

Data from the ECI show that between 1986 and 1993, change in compensation costs for workers in the health care industry grew faster, on average, than for all civilian workers.¹² (See chart 1.) Health services compensation grew at an average annual rate of 5.3 percent compared to 4.3 percent for all civilian workers. Since 1994,

however, this trend has reversed; average compensation cost increases for health workers have grown more slowly than they have for all civilian workers. Data from the first quarter of 1997, show a continuation of this trend; health care compensation is increasing at about 2 percent annually, compared to about 3 percent for civilian compensation.

Factors affecting health industry compensation

A large portion of total health care industry expenditures goes toward compensation for its workers. Consequently, compensation costs are, by far, the largest expenditure made by establishments in the health care industry.

There are many factors affecting health care compensation. First, real wages in the health care industry should rise in the short run if consumer demand for medical care increases, all else being equal.¹³ According to the Health Care Finance Administration National Health Accounts, national private expenditures for health care have increased, on average, just under 10 percent annually since 1986. From 1990 to 1993, total employment in health care services increased from about 9.1 million to 10.2 million. If rising expenditures and total industry employments are used as general indicators of demand, then a fair conclusion is that the demand for health services has increased.

Second, health care wages should rise in the short run if workers become more productive, all else being equal. While measuring productivity in the service sector is difficult at best, anecdotal evidence indicates that worker productivity in the health care industry has increased. While there are many factors that can affect productivity, technical changes in health care delivery, particularly the creation of Health Maintenance Organizations (HMOs) and Preferred Provider Organizations (PPOs) are the most likely cause of increased productivity in the industry.¹⁴

Other important factors affect wages in the health care sector. These include the industry's desire for increased profits, introduction of new technologies, changing competition in a marketplace, and the supply of skilled workers. These six factors together have a significant effect on compensation in the health industry.

Health care prices: The Consumer Price Index

The Consumer Price Index (CPI) measures the average change in prices paid by urban consumers for a fixed market basket of goods and services. Price changes are calculated by repricing essentially the same group of goods and services at regular intervals and comparing aggregate costs from a selected base period. The medical care component of the CPI is a measure of change in the price of health care.

Medical goods and services, including health insurance, make up just under 7 percent of the CPI market basket for all goods and services.¹⁵ Price changes in health insurance premiums are calculated monthly from the various price movements of goods and services that are covered by health insurance.¹⁶

Since 1986, the change in the price of medical care has usually outpaced the overall inflation rate for all goods and services. However, starting in 1992, the gap between medical care inflation and overall price change has disappeared.¹⁷ In 1991 and 1992, prices for medical care grew over 4 percent per year faster than other prices as measured by the CPI. By 1995, the difference in medical and non-medical inflation narrowed to less than 2 percentage points. In the 6 months ending June 1996, medical prices actually grew slower than non-medical prices for the first time in over a decade.

Health industry compensation costs and medical inflation: A comparison

Even though the average rate of

increases in medical prices was greater than health industry compensation between 1986 and 1996, the pace of change in both data series followed similar patterns. (See chart 2.) Between 1988 and 1990, both series increased. Moreover, between 1990 and 1994, both series decreased.¹⁸ Since a majority of health care industry expenditures result from compensation costs, a relationship between health industry compensation and medical inflation is not unexpected.

Trends in employer health care costs

Health care costs have grown more rapidly than wages or any other benefit over the past decade. From the time the Bureau started collecting employer cost data for wages and salaries, and benefits, the proportion of total compensation costs for employee benefits has slowly risen. Between 1977 and 1996, benefits, as a portion of total compensation, rose from 25.2 percent to 28.1 percent. (See chart 3.) This increase in benefits is directly linked to rising health care costs.¹⁹ When health insurance costs are excluded from total benefit costs, the change in costs of total benefits closely resembles the rate of change in civilian wages and salaries.²⁰

Between 1985 and 1996, health care costs increased at a greater average annual rate than all other benefit costs. After an increase between 1987 and 1989, the rate of increase in employer health care costs decreased every year through 1995. Over the past 2 years, however, the cost of health care benefits has declined more than other benefit costs. Except for the September 1996 quarter, health care benefit costs have remained relatively stable, while the cost of all other benefits has increased roughly at the same pace as wages.

Not only have employer health care costs usually grown faster than other benefits, they have also exhibited greater long-term volatil-

ity. Since 1985, annual increases in the employer benefits cost, excluding health care, ranged from roughly 2 to 6 percent. (See chart 4.) In comparison, the annual percent change in health care costs has risen to as much as 14.7 percent and fallen as much as 0.3 percent.

Employer cost-containment efforts

Another factor that affects health care costs is employer cost-containment efforts. These efforts exert a downward pressure on employers' medical care costs.

Reversing a 5-year trend, employer health care costs since 1994, as measured by the ECI, have increased at a slower rate than medical inflation. (See chart 5.) The reduction in the growth of employer health care costs is most often attributed to expanded employer cost-containment efforts.²¹

Economists have identified several methods employers use in containing health care costs. These include passing health care costs on to employees, moving away from traditional fee-for-service plans to less expensive HMOs and PPOs, and changing the existing plan design.²²

Medical prices and employer health care costs: A comparison

The change in medical prices has followed a pattern similar to that for employer health care costs. When the price of health services and products grew faster than the average inflation rate, employer costs for health care benefits grew faster than other compensation costs. Similarly, when the growth in medical prices slowed more than the inflation rate, the growth in employer health care costs fell below the average growth rate for all other benefits.

Using the change in the CPI-U for medical care, lagged 1 year, and the ECI for health insurance, the two data sets, with several exceptions, follow similar trends.²³ (See chart 5.) Two conclusions are apparent when reviewing these data. First,

the employer cost data are more volatile than medical inflation data. Second, during certain periods, the two data series moved inversely. For example, between 1989 and 1992, the rate of increase in employer costs was declining while medical inflation was increasing. This inverse movement is explained by factors (other than medical prices) affecting employer health costs, such as cost-containment measures. As such, it is to be expected that the ECI might not move in a 1:1 relationship to medical inflation. While this graphical evidence appears to be less compelling than the comparison between health industry compensation and health industry prices, the two data series move consistently enough so that a relationship does appear to exist.

Analysis

What is the connection between health industry compensation and employer health care costs? While it appears logical that an increase in health industry compensation costs will lead to higher prices charged to employers and this, in turn, will result in higher employer health care costs, as seen earlier, there are many intervening factors. For example, health care providers may absorb all or part of increased compensation costs under certain market conditions, or increased employee productivity can mitigate the change in costs incurred by health care providers and the change in the prices they charge for their services. In addition, employers do not always have to accept higher health care costs; they can change health care plans to emphasize cost-containment measures, reduce the benefits provided in their current health care plan, or even pass the increased

costs on to their employees. When the impact of health insurance companies, acting as a middleman between employers and health care providers, is included, the relationship between health industry compensation costs and employer health costs becomes less direct.

Notwithstanding these factors, the data show a broad, positive correlation between health care compensation costs and employer health insurance costs. (See chart 6.) In 1988 and early 1989, employer health insurance costs and compensation costs increased. Soon thereafter, the rate of increase in both wages and costs declined, continuing through 1995. However, in 1996, wage increases continued to decrease slightly, while health care cost increases grew.

The discrepancies between health industry compensation costs and employer costs are expected. Just as employer health costs and medical inflation do not move in a 1:1 relationship, neither do compensation and costs move in lockstep. As explained earlier, factors other than health industry compensation also affect employer health costs.

Moreover, these employer health costs are more volatile than health care workers' compensation costs. (See chart 5.) Between early 1986 and the first quarter of 1988, the percent change between compensation and costs were similar. Following this period, health care costs rose significantly, increasing at a rate of 14.7 percent annually in the fourth quarter of 1988.²⁴ Health care costs continued to rise at a double digit pace for the next 3¼ years. Increases in compensation also became larger over this time period, but at a slower pace. While the annual percent change in health care costs

increased from 3.9 percent in the first quarter of 1986 to 14.7 percent roughly 3 years later, the annual change in compensation costs only increased from 3.7 percent to 6.5 percent.

Conclusion

Changes in health industry wages appear to be one of many factors influencing employer health care costs. The data show that employer health insurance costs follow roughly similar trends to those of health industry wages. This relationship holds because wages comprise a significant portion of health industry expenditures.

Technical note

In order to mathematically test the relationship in the time series data presented in certain charts, correlation tests were completed. The correlation calculation generates the covariance of two data sets divided by the product of their standard deviations. In each of the charts tested, a significant positive correlation was found at the 95 percent confidence level.

The correlation between the CPI-U for medical care and the ECI for compensation costs in the health care industry was found to be .8868. (See chart 2.) This shows that the two data sets have a strong tendency to move together over time.

Similar results were found for employer health care costs and compensation costs in the health care industry, with a positive correlation of .8736. (See chart 6.) Employer health care costs and all other benefit costs were also significant, with a correlation rate of .7319. (See chart 4.) The CPI for medical care (lagged 1 year) and the ECI for health insurance were correlated at .6335. (See chart 5.)

¹ A 1996 survey conducted by the Employee Benefit Research Institute and the Gallup Organization, Inc., found that 64 percent of all employees value their health benefits more than any other benefit.

² See, for example, "Hospital Costs, Adoption of Technology Drives Cost Growth," General Accounting Office, September 1992.

³ This article uses the Employment Cost Index for the health services industry as a measure of health industry compensation. Health services include workers in Standard Industrial Classification (SIC) Major Group 80 and include the following types of establishments: Doctor's offices (8011 - 8049), nursing and personal care facilities (8051 - 8059), hospitals (8062 - 8069), medical and dental laboratories (8071 - 8072), and other miscellaneous health services (8082 - 8099).

⁴ By isolating a particular factor, it is easier to identify the specific impact it can have on health industry compensation costs. While not a "real world" condition, it is a good way to examine cause and effect relationships in the health care sector as well as the overall economy.

⁵ Employee Benefits Research Institute, "Sources of Health Insurance Characteristics of the Uninsured: Analysis of the March 1994 Current Population Survey," EBRI Issue Brief Number 170, February 1996.

⁶ Katharine R. Levit, et al., "National Health Care Expenditures, 1994," *Health Care Financing Review*, Spring 1996, pp. 205-206. Also see Michael Bucci and Robert Grant, "Health Insurance: Employer Offerings and Employee Choice in Small Private Establishments," *Compensation and Working Conditions*, August 1994, pp. 1-3.

⁷ Coverage of the private sector is limited to the private nonfarm economy, excluding private household workers. Public sector coverage includes employees of State and local governments, but excludes workers in the Federal Government.

⁸ For an explanation of the ECI index computation method, see *BLS Handbook of Methods*, Bulletin 2490, 1997, Bureau of Labor Statistics, pp.61-62.

⁹ The difference in treatment of benefit provisions between the ECI and a consumption cost index might be illustrated by an example. A decline in health insurance premium cost attributed to a decline in coverage of illnesses would be properly registered in the ECI as a cost decrease for procuring labor services. The same phenomenon in a broad consumption cost index such as the Personal Consumption Expenditures (PCE) implicit deflator might not be reflected as a price decline because the quality of insurance coverage to the consumer has concomitantly declined. Any quality-adjusted consumption price decline would certainly not be as great as the decline in employers' premium costs in this case. We do not mention the CPI here because, unlike the PCE deflator, it does not cover, as a general rule, consumption of services provided at substantially no cost to the household, such as employer-provided benefits.

¹⁰ The ECI measures employer costs for the following benefit categories: Legally-required benefits (Social Security and Medicare, Workers' Compensation, Federal and State unemployment insurance, among others), insurances (health, life, short-term disability, and long-term disability), paid leave (vacations, sick leave, holidays, and other leave), retirement and savings plans (defined

benefit and defined compensation plans), supplemental pay (shift differentials, overtime, and non-production bonuses such as lump-sum payments provided in lieu of wage increases), and other benefits (severance pay and supplemental unemployment insurance). The following table shows the cost per hour worked for components of compensation, and costs as a percentage of compensation, private industry workers, March 1996:

Compensation component	Cost per hour worked	Percent of compensation
Total compensation	\$17.10	100.0
Wages and salaries	12.58	71.9
Total benefits	4.91	28.4
Legally-required	1.59	9.3
Health insurance	1.14	6.5
Paid leave	1.12	6.4
Retirement savings55	3.1
Supplemental pay49	2.8
Other benefits03	.2

¹¹ The incidence of health care plans, however, is correlated with earnings. As earnings increase, so too does the chance of being covered by a health care plan. See, for example, Albert E. Schwenk and William R. Bailey, "Employer Expenditures for Private Retirement and Insurance Plans," *Monthly Labor Review*, July 1972, pp. 15-19.

¹² All civilian worker data include private non-farm and State and local government employees, excluding sales occupations. Sales workers were excluded because commission income is variable and increases the volatility in civilian worker compensation data.

¹³ See, for example, Paul J. Feldstein, *Health Care Economics*, John Wiley and Sons, 1988, pp. 40 and 416 for an analysis of how the demand for health care has affected the wages of registered nurses.

¹⁴ Martin N. Baily and Alan M. Garber, "Health Care Productivity," *Micro Brookings Papers*, June 1997, p. 45. HMOs provide a fixed set of medical services for a prepaid fee and generally emphasize preventative care and early intervention. PPOs, on the other hand, are contractual agreements, generally between health care providers and an employer or insurance company, to provide fee-for-service medical care, usually at a discount. While PPO subscribers usually have the option of going outside the list of "preferred" doctors (at a lower reimbursement rate), HMOs usually will not reimburse their members if medical treatment is received from a non-authorized health care provider in non-emergency situations. Increased efficiency is gained through these managed care plans in a variety of ways; the following three are presented as examples. First, large organizations can negotiate lower prices for prescription drugs, hospital services, and other medical goods. Second, by bringing doctors together, the cost of overhead is spread over many more patients. Third, expensive outside tests are often completed in-house, thus reducing the cost to the health provider.

¹⁵ The CPI does not include employer-paid health insurance premiums or government-paid health care; these are considered part of consumers' incomes and not their expenditures. As such, the share of medical services in the CPI is smaller than its share of the gross domestic product and other national account measures.

¹⁶ The BLS does not publish indexes for health insurance premiums because it employs an indirect method to measure price change for health insurance. This indirect approach reflects estimates of the impact on premium levels of: 1) Changes in the price of medical care items covered by health insurance policies; 2) changes in the cost of administering the policies; and 3) changes in the cost of maintaining reserves and, as appropriate, profits. It excludes changes resulting from modifications in policy benefits and increased or decreased use of medical insurance. Increased use is an increase in the quantity of medical insurance consumed, and not an increase in its price. For more information on how the CPI measures changes in health care costs, see *BLS Handbook of Methods*, Bulletin 2414, Bureau of Labor Statistics, 1992, pp. 176-180 and 195 and the *U.S. Department of Labor Program Highlights*, "How BLS Measures Price Change for Medical Care Services in the Consumer Price Index," Fact Sheet No. BLS 93-4, Bureau of Labor Statistics, July 1993.

¹⁷ See "A Look at Employer's Costs of Providing Health Benefits," Office of the Chief Economist, U.S. Department of Labor, July 31, 1996, p. 5, for a further discussion.

¹⁸ Correlation calculations found significant positive correlation between the two series. (See Technical Note at end of article for further discussion.) While the change in the rate of growth between the two data series appears to be strongly correlated, it should be noted that the data, by themselves, do not prove that a change in health industry compensation costs is the primary cause for a similar change in medical prices.

¹⁹ While benefits as a portion of total compensation has increased over time, civilian wages are now growing faster than benefits. This is a result of the recent slowdown in health costs and the corresponding slowdown in the increase of total benefit costs.

²⁰ One reason health care costs have risen more than all other benefits combined is because the cost of most non-health benefits are tied to wages. Therefore, when wages increase, most benefit costs (e.g. legally-required, paid leave, etc.) will increase in a 1:1 relationship.

²¹ "A Look at Employers' Costs of Providing Health Benefits," Office of the Chief Economist, U.S. Department of Labor, July 1996.

²² Stephanie L. Hyland, "Health Care Benefits Show Cost-containment Strategies," *Monthly Labor Review*, February 1992, pp. 42-43.

²³ This analysis is from Al Schwenk, "Trends in Health Insurance Costs," *Compensation and Working Conditions*, December 1996, pp. 31-33. The change in the ECI health insurance costs showed a closer relation to the CPI for medical care lagged 1 year than to the concurrent change in the CPI for medical care. The most plausible reason for this lag is that CPI data are collected directly from the health care providers while the ECI collects data from employers who must first be billed by the provider. Peter K. Reilly, a ben-

—ENDNOTES—

efits actuary, believes cost increases lead premium increases by 18 months: however, increasing the lag time to 18 and 24 months did not materially affect the relationship depicted in chart 5. While the change in the rate of growth between the two data series appear to be strongly correlated, it

should be noted that the data, by themselves, do not prove that a change in medical prices is the cause for a similar change in employer health care prices.

²⁴ These changes in health insurance costs are unpublished estimates. Employer nonresponse for

health insurance is higher than for other benefit items; as a result, the health insurance index rests on fewer observations than expected from the survey design. Variance estimates for the health insurance index are under development at the Bureau but not yet available, which means that there is no basis for assessing the index's precision.

Chart 1. Percent change in the Employment Cost Index for civilian worker compensation (less sales occupations) and health industry compensation, 1985-96

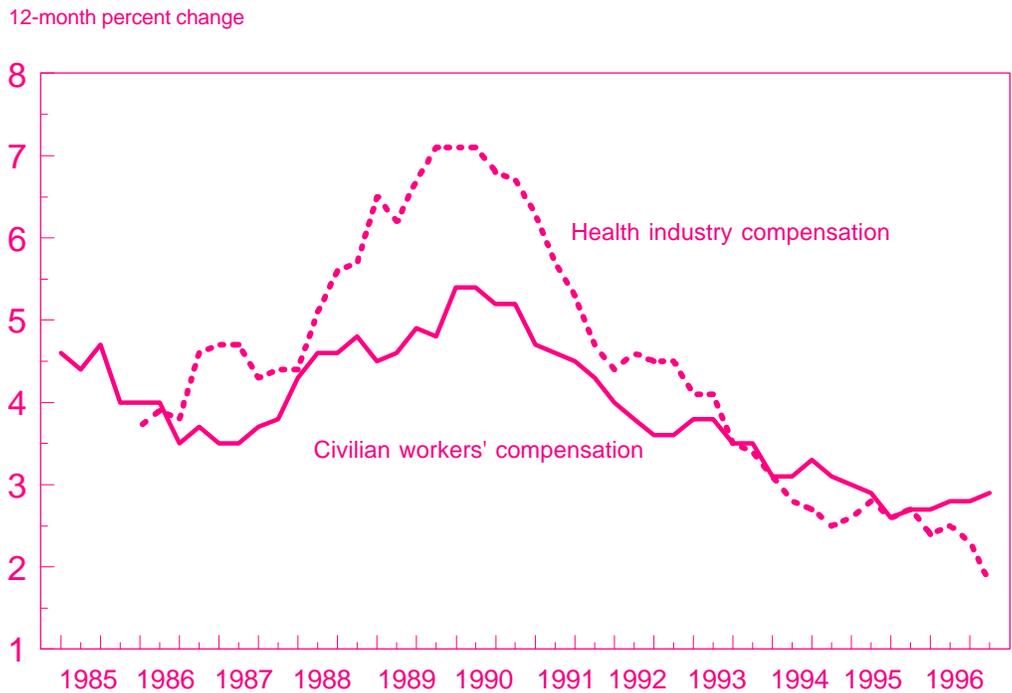


Chart 2. Percent change in the CPI-U for medical care and the ECI for compensation costs in the health care industry, 1986-96

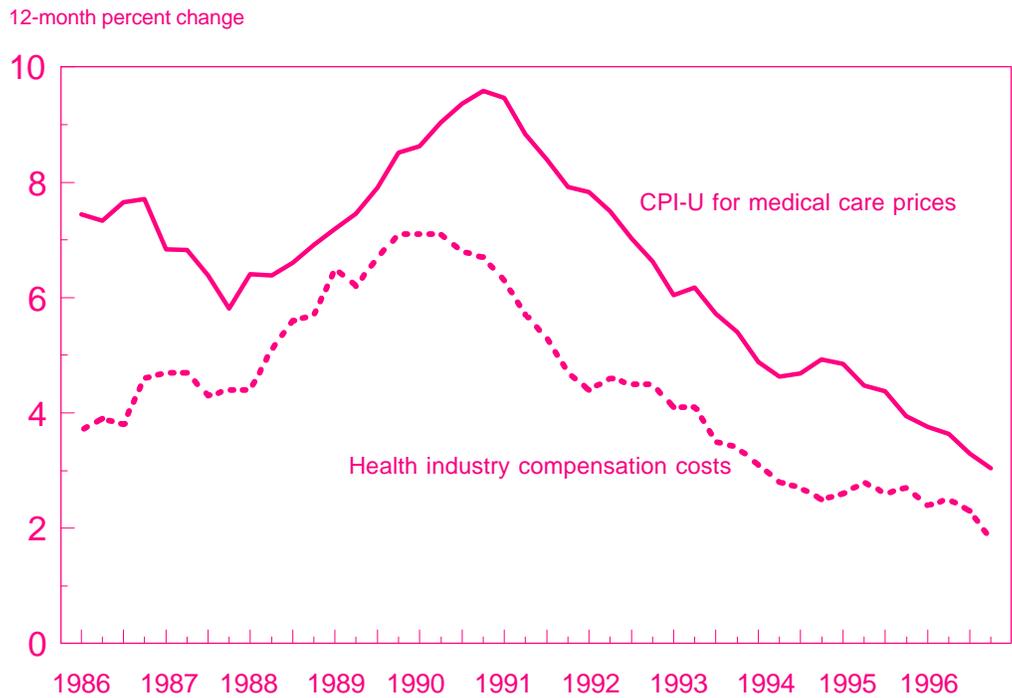
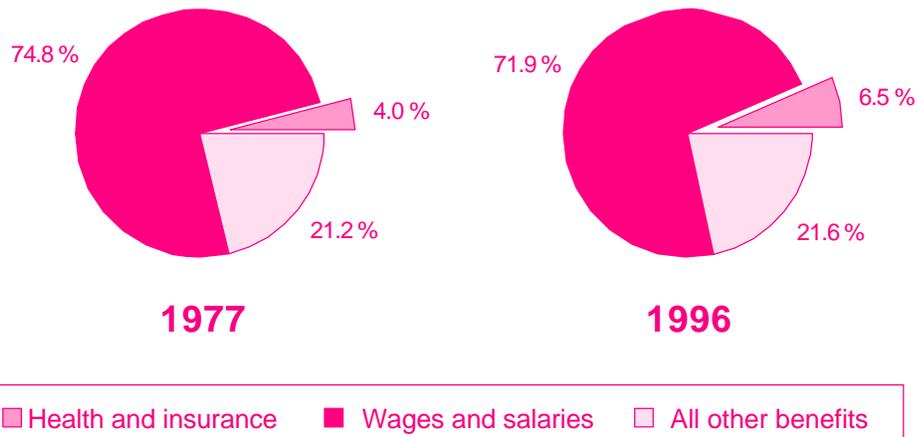


Chart 3. Percent of total compensation by health and insurance benefits, wages and salaries, and all other benefits, 1977 and 1996



NOTE: Data are from Employer Expenditure for Employee Compensation Survey (1977) and the Employment Costs Index (1996).

Chart 4. Percent change in the Employment Cost Index for employer health care costs and all other benefit costs, 1985-96

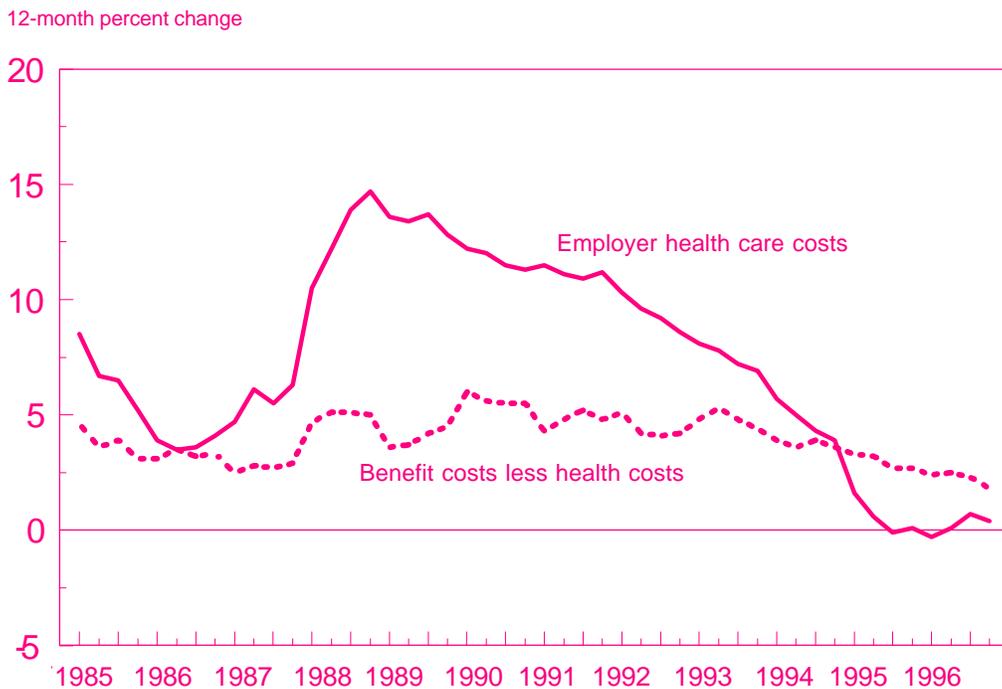


Chart 5. Percent change in the Consumer Price Index for medical care (lagged 1 year) and Employment Cost Index for employer health care costs, 1985-96

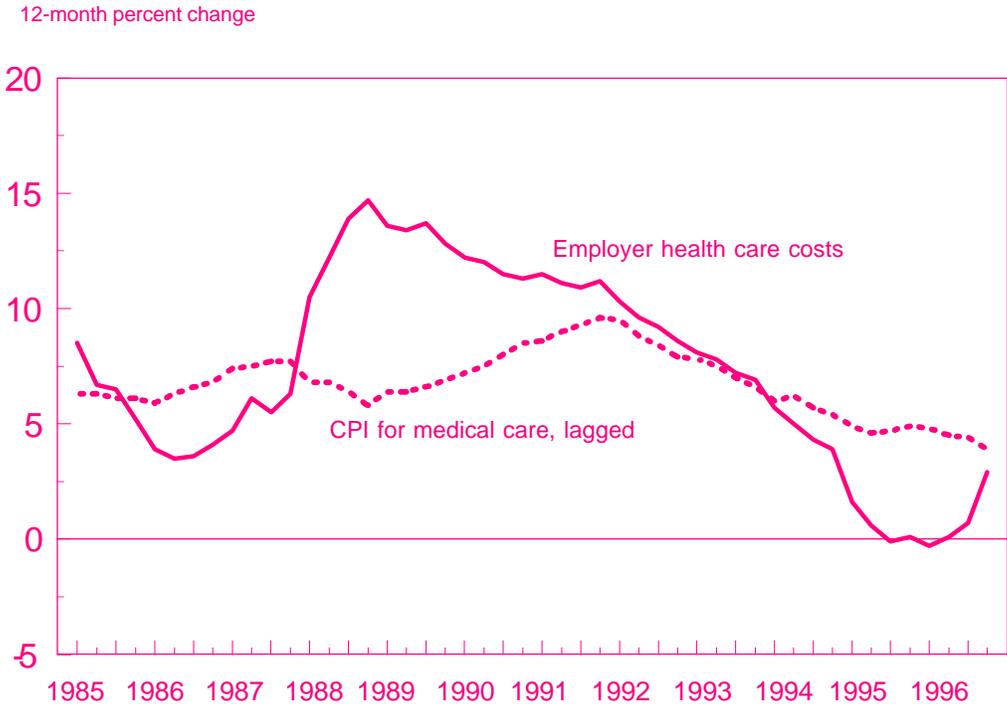


Chart 6. Percent change in the Employment Cost Index for employer health care costs and compensation costs in the health care industry, 1985-96

