

Taxation and Its Effect Upon Public and Private Health Insurance and Medical Demand

by Nancy T. Greenspan and Ronald J. Vogel

Multiple tax subsidies are available to many buyers and sellers of health insurance. These subsidies have the potential of creating excess demand for health insurance, which in turn can create excess demand for health services. A review of the literature on the effects of the tax subsidies on the price of health care shows that these subsidies, by raising prices in the medical sector, constrain the Medicare and Medicaid programs' ability to provide access to care for their beneficiaries.

Introduction

With the dramatic increase in the cost of health care, much government effort in the last 10 years has concentrated on containing expenditures for Medicare and Medicaid, while trying to maintain quality of and access to care for the populations served by these programs. These efforts to contain expenditures have largely focused on mechanisms to limit government reimbursement levels for health care or to restructure the reimbursement system and have often failed to consider the reaction of the private health care market. Given the size of the private market, this is an important oversight. Of the \$168 billion spent on personal health care in 1978, 27 percent was by the private health insurance market and 28 percent by the Federal government¹ (Gibson, 1979). With private third-party reimbursement equal to the Federal government's share, the private sector is able to exert considerable influence on the cost of care and, consequently, on who receives care.

Basically, the private and Federal components of the market compete for the health care provider's time, and much but not all of this competition is based on reimbursement levels.² For instance, it has been shown that when Medicare and Medicaid fee levels are lower than those of the private insurers, physicians limit their number of Medicaid patients and their acceptance of Medicare assignment and instead see patients with private insurance (Sloan *et al.*, 1977 and Paringer, 1979). If the government does not raise reimbursement levels to meet those of the private sector, access to care is limited for Medicaid patients, and Medicare patients have increased out-of-pocket costs. If it does raise reimbursement levels, the outlay of funds for Federal programs increases.

Other research has shown that even with an increase in Federal program fees, the Medicare and Medicaid recipients may not have greater access to care. Hadley and Lee (1978) and Paringer (1979) report that raising Medicare and Medicaid fees might exert inflationary pressures on private fee levels, leaving the relative positions of the fees in the private and public sectors the same as before the increase.

The research cited above suggests that there is an interrelationship between the two market components that should not be overlooked when considering ways to control costs in the Medicare and Medicaid programs. This paper will consider an aspect of the private market, namely tax incentives, which creates upward pressures on fees.³ Specifically, we will argue that by eliminating tax subsidies to the buyers and sellers of private health insurance and thereby creating a more efficient private health insurance market, it would be possible for the government to slow upward price pressures in both the private and public sectors, thus helping to control government expenditures and improving access for Medicare and Medicaid patients. The discussion will focus on how the present tax subsidies may be increasing the demand for health care which could be the cause of rising prices in the private market.

³ Studies in many markets have shown that taxation is not neutral in its effects upon economic activity. For example, Aaron (1972) estimates that there has been about a 20 percent increase in the amount of private housing purchased solely due to present provisions in the U.S. income tax laws. Gutmann (1979) estimates that as much as \$220 billion per year in transactions occur in cash or barter in the U.S. economy, in order that participants might escape the tax laws. Since health insurance has its own special tax treatment at both the Federal and State levels, we would expect, therefore, that taxation would also have an important impact on the health insurance and medical care markets.

¹ Other major sources of financing are direct payment by the individual (32 percent) and third-party reimbursement by State and local governments (11 percent).

² Other ways of competing would include ease of being reimbursed.

Through a review of the literature, we will first examine the buyer's market for health insurance, analyzing the health insurance deduction by employers and the health insurance deduction by employees, as well as their effect on the demand for health insurance and health care. Secondly, we will look at the private health insurer's market and review the findings on the effect of differential tax treatment of the insurers on the efficiency of the market. The concluding section will discuss options for improving the current private market structure to make public efforts for cost containment and access more viable.

The Buyers' Market for Private Health Insurance

The individual who purchases health insurance is potentially eligible to receive two kinds of tax subsidies. First, the taxpayer who itemizes deductions may deduct one-half of his health insurance premiums up to \$150. The rest of his health insurance premiums may be deducted to the extent that his expenditures on health care exceed three percent of adjusted gross income.⁴ This provision in the tax law lowers the effective price of health insurance. Moreover, the same provision exists in most State income tax laws and in some city income tax laws.

The second way in which purchases of health insurance are subsidized by the tax system is through what is known as the "employer exclusion." Under existing income tax laws, both at the Federal and State levels, any contribution which the employer makes to his employees' health insurance plan is fully deductible as a business expense and is not treated as taxable income to the employee.⁵ Furthermore, employer-paid health insurance premiums do not enter the social security tax base. This provision creates a powerful tax incentive for the employee to prefer in-kind benefits rather than wages. For example, an employee who is in the 25 percent Federal marginal tax bracket and who cannot itemize his deductions would have only \$75 to purchase health insurance if an additional \$100 were paid to him in cash by his employer; if the employer bought health insurance for this same employee instead of paying him the additional cash, the employer could buy \$100 worth (or 34 percent more) of health insurance for his employee. Vis-a-vis the tax system, the employer is indifferent as to whether he pays the employee \$100 in cash or \$100 in purchased health insurance premiums, because either form of payment is fully deductible as a business expense when the employer computes his own profits tax. However, if one hypothesized that payment in the form of health insurance benefits rather than in cash creates employee loyalty and

⁴ Adjusted gross income is income net of costs of earning the income.

⁵ As of 1977, group enrollment as a percentage of total enrollment was 83 percent for commercial insurers, 82 percent for Blue Cross, and 80 percent for Blue Shield.

lowers labor turnover costs, the employer, too, has a positive incentive to provide health insurance for his employees.⁶

Table 1 contains Congressional Budget Office (CBO) estimates of Federal government direct expenditures for health care and tax expenditures on private health insurance under the existing tax law for fiscal 1980. Economists use the term "tax expenditure" for the tax revenue foregone by the government due to special provisions in the tax law, such as those applicable to the purchase of health insurance. In this case, the foregone revenue (the tax expenditure) is spent by the consumer-taxpayer on the purchase of health insurance rather than by the government on other programs. The CBO estimates that tax expenditures by the Federal government for health insurance will be \$10.6 billion in fiscal year 1980. That amount is almost as large as the \$12.8 billion which the Federal government will spend directly on the poor in the Medicaid program during the same year. The Treasury estimates that tax expenditures under the employer exclusion grew at an average annual rate of about 19 percent between 1968 and 1979 and that tax expenditures under the individual income tax deduction grew seven percent annually. (Steuerle and Hoffman, 1979)

TABLE 1
Tax Expenditures for Private Health Insurance
Compared with Direct Expenditure Programs for
Health Care, Fiscal Year 1980

| Program | Estimated Outlays or Expenditures (Billions) |
|--|--|
| Medicare | \$32.1 |
| Medicaid | \$12.8 |
| Tax Expenditures for Private Health Insurance | \$10.6 |
| Veterans Health Programs | \$ 5.9 |
| All Other Health Services Programs | \$ 5.0 |

Source: Rivlin, 1979

The two tax subsidies discussed above lower the price of health insurance to the consumer. Provided that the elasticity of demand for health insurance is not infinitely inelastic, the price reduction will result in the purchase of a greater quantity of insurance. This increase in quantity can be in the form of more policies being sold or in the form of an increase in the coverage provided by the insurance policy (that is, the comprehensiveness), such as smaller deductibles and lower coinsurance rates.

⁶ See the Appendix for an example of the effect of the tax deduction.

The effect of the tax subsidies on the demand for insurance, with regard to the comprehensiveness of the policy, has been analyzed by Feldstein and Friedman (1977). In their paper, they examine the effect of a tax subsidy on coinsurance rates under varying assumptions concerning price elasticities of health care and an individual's degree of risk aversion. As shown in Table 2, the presence of a tax subsidy lowers the coinsurance rate. Under the first set of assumptions, the consumer would buy a policy with a coinsurance rate of .37 if there were a tax subsidy, rather than one with a .58 coinsurance rate without a subsidy. Changing their assumptions serves to reduce the differences between the coinsurance rates demanded with and without tax subsidies but does not eliminate these differences. Thus, even under very rigid assumptions, the presence of a tax subsidy appears to cause more comprehensive health insurance to be purchased.

In examining the effect of lower coinsurance rates on the demand for care, Phelps and Newhouse (1972), Rosett and Huang (1973), and Newhouse and Phelps (1976) have all shown that the demand for medical care is not perfectly inelastic with respect to price. That is to say, lower net prices for medical care (gross price minus the amount paid by insurance) cause people to consume more medical care. This implies that more medical care will be purchased in the presence of tax subsidies for health insurance.

The extent of the decrease in net price of care because of health insurance was originally measured by Feldstein (1971). He showed that although gross hospital prices have increased at a rapid rate, the *deflated net costs to the consumer* of a day of hospital care has actually decreased by 16 percent using one measure, and increased by only four percent using another measure, for the entire period from 1950 to 1968. Using Feldstein's methodology, the authors

TABLE 2
Effects of the Tax Subsidy on the Aggregate Demand for Insurance¹.

| Parameter Values | Average Effective Coinsurance Rates | | | | | |
|--|-------------------------------------|-------------|----------------|-------------|----------------|-------------|
| | Total | | Hospital | | Medical | |
| | No Tax Subsidy | Tax Subsidy | No Tax Subsidy | Tax Subsidy | No Tax Subsidy | Tax Subsidy |
| Low Price Elasticities (R = 0.0003) ² | 0.58 | 0.37 | 0.44 | 0.32 | 0.76 | 0.43 |
| Moderate Price Elasticities (R = 0.0003) ² | 0.59 | 0.46 | 0.44 | 0.37 | 0.79 | 0.56 |
| Moderate Price Elasticities (R = 0.0005) ² | 0.55 | 0.39 | 0.42 | 0.33 | 0.76 | 0.46 |

¹ All calculations use $\lambda = 0.1$. Low price elasticities are $n_{22} = -0.25$ (hospital) and $n_{22} = -0.20$ (medical); moderate elasticities are $n_{11} = 0.50$ and $n_{22} = -0.40$.

² R = Risk Aversion

* Source: Feldstein and Friedman, 1977

calculated that for the period 1965 to 1976, the deflated net cost of a day of hospital care decreased by 20 percent. An alternate measure showed a rise of only four percent.⁷ In examining the deflated net price for physicians' services, Cantwell (1979), also using Feldstein's methodology, found that net prices fell by 26 percent for the period 1966 to 1977.

Given that the net price of a day of hospital care and of physicians' services has declined in comparison to other goods and services the consumer purchases, it is not surprising that there have been changes in the delivery of medical care that have led to an increase in the gross price of medical care. Examples of these changes would be patients who, because of a lower net price due to health insurance, choose a private room rather than a semi-private room, or the physician who orders a myriad of tests on the patient rather than only two or three commonly-known effective tests, "because insurance will pay for it." It can be hypothesized, therefore, that such choices drive up the gross price of physicians' services or a day in the hospital. Indeed, when empirically examining the relationship between the price of health care and the presence of health insurance, a positive correlation between the two was found. For instance, Sloan (1976) estimated the price elasticity with respect to health insurance for office visits of general practitioners to be .17. Steinwald and Sloan (1974) found elasticities in the range of .19 to .30 for office visits of general practitioners, general surgeons, and internists.

In summary, the empirical evidence suggests that:

- (1) the tax subsidies result in the purchase of more comprehensive health insurance;
- (2) lower coinsurance rates lead to increased demand for health care;
- (3) the deflated net price of health care has fallen over the period 1965 to 1977; and
- (4) health insurance leads to an increase in the gross price of medical care, causing both Federal and private third-party reimbursers to pay out increasing amounts to providers of care.

Although health insurance would still be purchased without the tax subsidies, the policies demanded would probably be less comprehensive, thus causing the net price of care to the consumer to rise and de-

mand for medical care to decrease. With a decrease in the demand for care from the private sector, one would expect medical prices to fall. The decrease in demand and in prices would provide Medicare and Medicaid beneficiaries greater access to medical services.

The Seller's Market for Health Insurance

The tax structure in the sellers' market for private health insurance is also an important factor in the amount of insurance purchased and, thus, on the private fee levels. Presently, the private health insurance market comprises more than 1,250 commercial carriers (hereafter referred to as "commercials"), 70 Blue Cross plans, and 69 Blue Shield plans. Data for 1976 show that the \$39.4 billion health insurance business was fairly evenly divided between the commercial carriers and Blue Cross-Blue Shield. However, the Blues and the commercials do not compete on an equal footing. Because the Blues were originally formed as community service organizations which tried to keep rates low enough so that the poor and chronically ill could afford health insurance, they were given certain advantages by the States' enabling legislation. One of these advantages was an exemption from taxation.⁸ Most State enabling acts as well as Federal law deem the Blues exempt from taxation because they provide a community service and are non-profit.⁹ The taxes that the Blues escape are significant. First, they pay no Federal income tax. Secondly, although all 50 States impose premium taxes on commercial health insurance and 18 impose income taxes in addition to the premium taxes, only 26 of these collected premium taxes from the Blues (National Association of Life Underwriters, 1978).

Using 1971 data, Greenspan and Vogel (1979) estimated the effect of equalizing premium taxes between the Blues and the commercials. They found that the Blues' share would drop from 46.2 percent of the total market to 36.1 percent, other things being equal. This decrease equals a 22 percent loss in the Blues' market share which the commercials would gain in the short run. One major question which emerges from this result is: given their competitive advantage due to unequal taxation, why haven't the Blues captured more of the market? This is an important consideration when looking at the efficiency of the private market and the resulting pressures on increased premiums and the level of coverage. Since the Blues do not dominate the market, their premium level

⁷ Because the American Hospital Association changed the form of reporting average cost per adjusted hospital day, base numbers are not entirely comparable to those used by Feldstein.

Feldstein used three concepts of deflated net cost, where ACPPD is Average Cost Per Patient Day: (1) Net Cost 1 = $\frac{\text{ACPPD} \times \text{Direct Consumer Expenditure}}{\text{Total Expenditure}}$

(2) Net Cost 2 = $\frac{\text{ACPPD} \times \text{Direct Consumer Expenditure}}{\text{Total Private Expenditure}}$

and (3) Net Cost 3 = $\frac{\text{ACPPD} \times \text{Total Private Expenditure}}{\text{Total Expenditure}}$

The percentage changes noted in the text are for Net Cost 1 and Net Cost 2 respectively. Our calculations revealed that between 1965 and 1976, Net Cost 1 went from \$6.64 to \$5.38, while Net Cost 2 went from \$11.06 to \$11.53.

⁸ Other areas where the Blues and commercials differ are in the form of benefits offered, the method of setting rates, the rate approval process, and the type of provider reimbursement.

⁹ Law (1974) states: "The federal tax exemption is provided under (501) (c) (4) Internal Revenue Code of 1954 for civil leagues or organizations not organized for profit but operated exclusively for promotion of social welfare" (p. 164, Note 38).

must not reflect these advantages. If the premium level is nonreflective, either the Blues are subject to inefficiencies so that their costs and, hence, premium levels increase, or they have a higher fee structure for providers. Studies by Blair, Ginsburg, and Vogel (1975), Frech (1976), Vogel (1977), and Eisenstadt and Kennedy (1979) explore the first alternative, and Arnould and Eisenstadt (1980) and Frech (1974 and 1979) examine the second.

All four studies analyzing the Blues' administrative costs find that the Blues are not minimizing costs for a given level of output. The first two studies compare the Blues to the commercials but do not control for the tax advantages that some Blues' plans have. The other two compare the non-taxed plans to those which are taxed. Blair, Ginsburg, and Vogel (1975), in examining three dimensions of the plans' costs, find that the Blues are not operating at a minimal cost point. Likewise, Frech (1976) concludes that the non-profit Blues are inefficient in comparison to the for-profit commercials' performance in administering Medicare Part B.¹⁰ In exploring the differences in administrative costs between State-taxed and non-taxed Blue Cross and Blue Shield plans, Vogel (1977) finds that the taxed plans are more efficient than the non-taxed plans. Eisenstadt and Kennedy (1979) in analyzing these same two groups of Blues' plans and also controlling for where the medical community has control of the Board of Directors, show that those plans with a tax advantage and with medical control are more efficient (that is, have lower administrative costs) than those with a tax advantage but without medical control of the Board. This result suggests administrative inefficiency does exist where administrators have both relative control over operating decisions and a tax advantage.

Given that a tax advantage and physician Board control can lead to lower administrative costs and, therefore, lower premiums, the next question to address is whether this happens. Although no empirical work has analyzed this issue directly, related studies do allow inferences to be made. In examining the effect of physician Board control, Arnould and Eisenstadt (1980) find that those plans with a tax advantage and physician control have higher fees. This result would most likely occur if physician Board members encouraged more comprehensive policies to be written, which in turn would drive up gross prices of medical services by creating demand for different and more comprehensive services.¹¹ Frech (1974 and

1979) demonstrates that the Blues do sell a more comprehensive health insurance package when they have a tax advantage and that there is a significantly positive relationship between the comprehensiveness of the insurance package and hospital prices. Thus, one could infer that rather than passing on the administrative cost-savings (resulting from physician dominance of the Boards) in the form of lower premiums, the savings are distributed to physicians.

In summary, these studies show that a tax advantage for the Blues does not reduce premium levels but instead leads to higher fees and excess administrative costs. In other words, the Blues' expansion of benefits leads to increased prices in the medical sector; their purported inefficiency leads to higher costs and, therefore, to higher than necessary premiums. Elimination of the tax advantage would cause the Blues to be more efficient and would ease pressures on fees if coverage were less comprehensive.

Conclusions

Based on the evidence presented concerning the inefficiencies created by the tax subsidies for the buyers and sellers of health insurance, it can be argued that the present tax structure of the private health insurance industry contributes to the rising costs in the medical care sector. Tax subsidies for private health insurance continue to cause increased demand for health services, which in turn result in higher prices. As long as this is the case, government health programs will have difficulty competing with the private sector. Therefore, it is clear that the government must focus its attention on containing prices in the private health care sector. As suggested by this paper, one option is to eliminate the present tax subsidies in the private market for both the buyers and sellers of health insurance. At the margin, this action would serve to make the purchase of private health insurance more expensive, would make the sellers market more competitive, and would cause less comprehensive benefit packages to be sold.¹² However, the elimination of tax subsidies ultimately becomes a political question and one that has not met with a positive response in the past.

Acknowledgments

The authors would like to thank Ira Burney, David Eisenstadt, H. E. Frech, Judith Lave, and Frank Sloan for thoughtful comments on a previous draft of this paper.

¹⁰ Although this last conclusion is not based on the Blues' regular business, it provides general evidence for the contention that the Blues are not minimizing costs.

¹¹ Another variable that should be considered when discussing fee increases is the mechanism by which they are set. It could be hypothesized that with a usual-customary-reasonable system (UCR), where reimbursement is based on physicians' submitted charges, the fee levels would be higher than with a fixed fee schedule. Some of the effect of physician control of the board could result from this difference. No empirical work has, as yet, tested this hypothesis.

¹² Although it has been shown that an increase in the co-insurance rate decreases the demand for care (see, for example, Phelps and Newhouse, 1972) there has been no analysis of this effect on the quality of care received. However, it can be hypothesized that (1) when needed, people will seek care, and (2) providers would most likely eliminate the "extras," such as tests performed or additional days of hospital care that may not be essential. Eliminating such services would probably not affect the patient's health status.

TECHNICAL NOTE

Hypothetical Individual Tax Return

| | | Amount Spent Out-of-Pocket |
|----------------------------------|----------|-------------------------------|
| Adjusted Gross Income | \$25,000 | |
| Medical Expenses | \$ 4,000 | \$ 4,000 |
| Medicine and Drugs | \$ 450 | <u> - 250</u> deductible |
| Self-Paid Insurance Premiums | \$ 350 | \$ 3,750 |
| Employer-Paid Insurance Premiums | \$ 250 | <u> × .25</u> |
| Deductible on Insurance Policy | \$ 250 | = \$937.50 |
| Coinsurance Rate | 25% | <u> + 250.00</u> deduction |
| | | \$ 1,187.50 |

Medical Deduction on Form 1040

Medical and Dental Expenses (not paid by insurance or otherwise)

| | |
|---|-------------|
| 1. One-half (but not more than \$150) of insurance premiums you paid for medical care | \$ 150.00 |
| 2. Medicine and drugs | \$ 450.00 |
| 3. Enter 1% of Form 1040, line 31 (AGI) | \$ 250.00 |
| 4. Subtract line 3 from line 2 | \$ 200.00 |
| 5. Balance of insurance premiums for medical care not entered on line 1 | \$ 200.00 |
| 6. Other medical and dental expenses | \$ 1,187.50 |
| 7. Total (add lines 4 through 6) | \$ 1,587.50 |
| 8. Enter 3% of Form 1040, line 31 (AGI) | \$ 750.00 |
| 9. Subtract line 8 from line 7 | \$ 837.50 |
| 10. Total medical and dental expenses (add lines 1 and 9) | \$ 987.50 |

Tax Discount

| | Above Example | No Insurance Deduction | No Insurance Deduction and Employer Contribution Treated as Taxable Income |
|---------------------------|---------------|------------------------|--|
| Taxable Income | \$24,012.50 | \$24,362.50 | \$24,612.50 |
| Tax* | \$ 4,011.00 | \$ 4,109.00 | \$ 4,179.00 |
| Tax Discount on Insurance | \$ 168.00 | \$ 70.00 | 0 |

*Married couple, filing a joint return

References

- Arnould, Richard and David Eisenstadt, "The Effects of Provider Control of Blue Shield Plans: Regulatory Options," Working Paper, February 1980.
- Aaron, Henry A., *Shelter and Subsidies: Who Benefits From Federal Housing Policies?* Washington: The Brookings Institution, 1972.
- Blair, Roger D. and Ronald J. Vogel, *Health Insurance Administrative Costs: An Economic Analysis*, Lexington, Toronto and London: D. C. Heath and Company, 1975.
- Blair, Roger D., Paul Ginsburg and Ronald J. Vogel, "Blue Cross-Blue Shield Administrative Costs: A Study of Non-Profit Health Insurers," *Economic Inquiry*, June, 1975.
- Blue Cross and Blue Shield National Association, *Blue Cross-Blue Shield Fact Book*, Chicago, Illinois, 1963-1978.
- Cantwell, James, "Prices and Consumer Information: The Case of Insured Medical Markets," presented at the Western Economics Association Annual Conference, June 1979.
- Carroll, Marjorie Smith, "Private Health Insurance Plans in 1976: An Evaluation," *Social Security Bulletin*, September 1978.
- Congressional Budget Office, *Five Year Budget Projections and Alternative Budgetary Strategies for Fiscal Years 1980-1984, Supplemental Report on Tax Expenditures*, Washington: U.S. Government Printing Office, June 1979.
- Congressional Budget Office, *Controlling Rising Hospital Costs*, Washington: U.S. Government Printing Office, September 1979.
- Eisenstadt, David and Thomas E. Kennedy, "Control and Behavior of Non-Profit Firms: The Case of Blue Shield," Working Paper, December 1979.
- Feldstein, Martin S., *The Rising Cost of Hospital Care*, Washington: Information Resources Press, 1971.
- Feldstein, Martin S. and Elizabeth Allison, "Tax Subsidies of Private Health Insurance: Distribution, Revenue Loss and Effects," in *The Economics of Federal Subsidy Programs*, Joint Economic Committee, Part 8-Selected Subsidies, Washington: U.S. Government Printing Office, 1974.
- Feldstein, Martin S., and Bernard Friedman, "Tax Subsidies, The Rational Demand for Insurance and the Health Care Crisis," *Journal of Public Economics*, Vol. 7, April 1977, pp. 155-178.
- Frech, H. E., "Market Power in Health Insurance, Effects on Insurance and Medical Markets," *Journal of Industrial Economics*, September 1979.
- Frech, H. E., "The Property Rights Theory of the Firm: Empirical Results from a Natural Experiment," *Journal of Political Economy*, Vol. 84, 1976.
- Frech, H. E., *The Regulation of Health Insurance*, unpublished Ph.D. dissertation, UCLA, 1974.
- Gibson, Robert M., and Charles R. Fisher, "National Health Expenditures, Fiscal Year 1977," *Social Security Bulletin*, Vol. 41, July 1978, pp. 3-20.
- Gibson, Robert M., "National Health Expenditures, 1978," *Health Care Financing Review*, Vol. 1, Summer 1979, pp. 1-36.
- Greenspan, Nancy T. and Ronald J. Vogel, "An Econometric Analysis of the Effects of Regulation on the Private Health Insurance Market," paper presented at the Ninety-Second Annual Meeting of the American Economic Association, December 27-30, 1979, and submitted for publication.
- Gutman, Peter M. "The Subterranean Economy," *Taxing and Spending*, Vol. II, April 1979.
- Hadley, Jack and Robert Lee, *Physicians' Price and Output*, April 1978, DHEW, HCFA Contract No. 600-76-0054.
- Internal Revenue Service, *Statistics of Income: Individual Income Tax Returns*, 1978, Pub. No. 79 (4-79), (Washington: U.S. Government Printing Office, 1978).
- Law, Sylvia, *Blue Cross, What Went Wrong*, (New Haven: Yale University Press, 1974).
- Musgrave, Richard A., *The Theory of Public Finance*, (New York: McGraw-Hill, 1959).
- National Association of Life Underwriters, *Survey of the Extent of Regulation and Taxation of Blue Cross-Blue Shield Plans*, 1978.
- Newhouse, Joseph P. and Charles E. Phelps, "New Estimates of Price and Income Elasticities," in Richard Rosett, ed., *The Role of Health Insurance in the Health Services Sector*, (New York: National Bureau of Economic Research, 1976).
- Paringer, Lynn, "The Medicare Assignment Rates of Physicians: Their Responses to Changes in Reimbursement Policy," March 1979, DHEW, HCFA Contract No. 600-76-0054.
- Phelps, Charles E. and Joseph P. Newhouse, "The Effects of Coinsurance on the Demand for Physician Services," *Social Security Bulletin*, 35, June 1972.
- Rivlin, Alice M., "The Effect of the Tax Laws on Health Insurance and Medical Costs," Statement by the Director of the Congressional Budget Office before the Subcommittee on Oversight, Committee on Ways and Means, and the Task Force on Tax Expenditures, Committee on the Budget, U.S. House of Representatives, July 9, 1979.
- Rosett, Richard N., and Lien-fu-Huang, "The Effect of Health Insurance on the Demand for Medical Care," *Journal of Political Economy*, March 1973, pp. 281-305.
- Sloan, Frank A., "Physician Fee Inflation: Evidence from the Late 1960's," in *The Role of Health Insurance in the Health Services Sector*, R. N. Rosett (ed.) (New York: National Bureau of Economic Research, 1976) pp. 321-354.
- Sloan, Frank, Jerry Cromwell and Janet B. Mitchell, *A Study of Administrative Costs in Physicians' Offices and Medicaid Participation*, June 1977, DHEW, SSA Contract No. 600-75-0212.
- Source Book of Health Insurance*, Health Insurance Institute, New York, 1962-1974.
- Steinwald, Bruce and Frank A. Sloan, "Determinants of Physician Fees," *Journal of Business*, October 1974.
- Steuerle, Eugene and Ronald Hoffman, "Tax Expenditures for Health Care," U.S. Department of the Treasury, Office of Tax Analysis, OTA Paper No. 38, April 1979.
- Vogel, Ronald J., "The Effects of Taxation on the Differential Efficiency of Nonprofit Health Insurance," *Economic Inquiry*, October 1977.
- Vogel, Ronald J., "The Tax Treatment of Health Insurance Premiums as a Cause of Overinsurance," in Mark V. Pauly, ed., *National Health Insurance: What Now, What Later, What Never*, (Washington: American Enterprise Institute for Public Policy Research, 1980).