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INTRODUCTION

The NBER Tax Policy and the Economy conference, which has been held each fall for the last twelve years, is a specialized conference that seeks to communicate new research findings in the areas of taxation and government spending to interested policymakers in industry, government, and academia. The last year witnessed a substantial federal tax reform and ongoing debate about shifting responsibilities for welfare and other programs from the federal government to the states. There is also an emerging interest in entitlement reform, with both near-term and long-term issues receiving significant policy analysis. All of these issues provide excellent opportunities to introduce current research results into the policy debate on taxation and government expenditures.

This year's *Tax Policy and the Economy* publication is unusual. It is nearly twice the size of past publications, and it includes nine papers rather than the usual five. The first five papers were presented at the usual Washington conference. The last four papers, which together constitute a symposium on the asset-price effects of fundamental tax reform, were presented at an informal NBER meeting in January 1997. Because these papers are directly related to one of the perennial issues in the economics of taxation, and because there is an ongoing policy debate on fundamental federal tax reform, it seemed natural to include these papers in this volume as well.

The nine papers gathered here exemplify research that combines a concern for central policy issues with an application of state-of-the-art research tools. Each paper addresses a concrete question in tax policy or the design of expenditure programs. Each paper presents empirical evidence or develops a theoretical model that is directly relevant to the issue at hand. Each paper provides an important set of background facts or models that will be of value to policy analysts and scholars alike.

The first paper, David Cutler's study of "Cost Shifting or Cost Cutting?: The Incidence of Reductions in Medicare Payments," explores a question

that is likely to attract substantial attention in the gathering debate over entitlement reform. David observes that several budget resolutions in the last fifteen years have included substantial reductions in Medicare provider payments. He then asks how these payment reductions have affected the med-ical services provided to Medicare beneficiaries and the prices charged to non-Medicare patients. His empirical findings suggest that the effect of Medicare cuts in the 1980s was different from the effect of similar cuts in the 1990s. In the earlier time period, reductions in the amount that Medicare would pay for services were largely offset by increases in the prices charged to non-Medicare providers. But in the last few years, the period following the rise of managed care and the heightened price sensitivity of non-Medicare payers, there is much less evidence that hospitals have responded to Medicare cuts by passing on costs to other payers. The implication of this study is the future reductions in Medicare payments may have a substantial effect on the operation of hospitals and the incomes of medical care, because cost-shifting options are likely to be limited.

The second paper, by Jerry Hausman, addresses an important but under-studied issue in the regulation-based taxes on telecommunication services. "Taxation by Telecommunication Regulation" estimates the deadweight burden associated with the Federal Communications Commission's (FCC's) choice of how to raise funds for a program of improved Internet access in public libraries. The FCC decided to tax interstate telephone service to finance this program, rather than increasing the subscriber line charge for telephone service. The efficiency cost of raising long-distance telephone rates is greater than the efficiency cost of raising the subscriber line charge, because the price elasticity of demand for long-distance service is much greater than the price elasticity of demand for telephone connections, and because the ratio of price to marginal cost is greater in the long-distance market than in the telephone connection market. Hausman's estimates suggest that the efficiency cost of the long-distance tax is greater than the revenue raised by this tax.

The third paper, "Tax Incentives for Higher Education," addresses the very timely question of how federal tax expenditures affect the number of individuals who enroll in higher education. Caroline Hoxby, the study's author, begins by describing the education-related provisions of the Taxpayer Relief Act of 1997: HOPE and the Lifetime Learning Credit. She places these provisions in the context of existing federal education-subsidy programs. The paper then draws on existing empirical research on the price elasticity of demand for two- and four-year college education to describe the likely impact of the new tax provisions. One of the

most important features of the analysis is the explicit consideration of the possibility that tax subsidies that reduce the student cost of higher education may induce colleges to raise tuition prices. Although it will be several years before it is possible to assess the actual effects of the recently-enacted education tax subsidies, this paper provides an important guide to the potential effects.

Jeffrey Liebman's paper on "The Impact of the Earned Income Tax Credit [EITC] on Incentives and Income Distribution," the fourth paper in the volume, delivers exactly what its title promises. Liebman provides a comprehensive summary of how the EITC has affected the distribution of post-tax incomes relative to pre-tax incomes. The paper provides a wealth of information on the identity of households that receive the EITC, and it summarizes how the EITC affects the after-tax budget set for these households. The paper also uses a unique data set matching tax returns to survey responses in the Current Population Survey to study the extent of noncompliance with the EITC. The expansion of the Earned Income Tax Credit has been one of the most striking changes in the federal tax code in the last two decades, and this paper provides a clear and readable summary of the impact of these expansions.

The fifth paper is Leora Friedberg's study of "The Social Security Earnings Test and Labor Supply of Older Men." The Social Security Earnings Test specifies the amount of labor income that a social security recipient can earn without any reduction in benefits. It also specifies the rate at which benefits are reduced for those individuals who do choose to continue working after they begin receiving social security. While a small previous literature has concluded that the earnings test has a very limited effect on the behavior of social security beneficiaries, Friedberg challenges this conclusion. She shows that a substantial number of social security beneficiaries earn slightly less labor income than the amount that would trigger the earnings test. Moreover, when the minimum threshold for the earnings test changes, there is clear evidence that the level of reported earnings also changes. Thus this paper concludes that the earnings test does in fact affect labor-supply decisions, and that it may have substantial efficiency costs.

The last four papers in the volume are directed at a common set of issues concerning the economic effects of replacing the current income-tax system with a consumption-based tax system. It is widely recognized that transitional issues are crucial in analyzing the distribution of "winners" and "losers" in any reform that shifts the tax base. Yet relatively few research studies have tried to describe the effect of fundamental tax reform on asset values, interest rates, and other variables that have a significant effect on the transitional effects of tax reform. The four papers

included in this volume represent an important contribution to understanding this set of research questions.

David Bradford's paper, "Transition to and Tax Rate Flexibility in a Cash-Flow-Type Tax," explores the problem of double taxation of "old saving" when a consumption tax is adopted. The central difficulty is that individuals who have saved under the income tax, assuming that they would be able to consume their accumulated principal without paying any tax, would be taxed at the time of consumption under most consumption taxes. Bradford sketches two methods of avoiding this double taxation under a consumption tax regime, and he points out more generally that the double-tax problem arises in a consumption tax regime any time the *rate* of consumption tax changes. The proposals developed here represent important potential building blocks for "transition relief" in future consumption tax proposals.

The second paper on fundamental tax reform, Martin Feldstein's "Would a Consumption Tax Reduce Interest Rates?" addresses one of the most important issues that affect the incidence of tax reform. While a number of earlier studies have argued that nominal pre-tax interest rates would decline substantially if the income tax were replaced with a consumption tax, Feldstein shows that this is not a foregone conclusion. Rather, he demonstrates that depending on the way personal saving responds to changes in the after-tax rate of return, and the relationship between debt and equity yields, it is possible for fundamental tax reform to raise interest rates. This paper underscores the fragility of some previous conclusions regarding the potential effect of tax reform home values, the level of the stock market, and other asset prices.

William Gentry and Glenn Hubbard's paper, "Fundamental Tax Reform and Corporate Financial Policy," presents an in-depth discussion of how a switch to consumption taxation would affect the tax planning environment for corporations. The authors emphasize that many potential income-tax reforms, as well as a switch to consumption taxation, would equalize the tax treatment of different types of capital income and eliminate the double taxation of corporate capital income through the corporation and the individual income taxes. They focus on the impact of such changes on the incentives for firms to use debt as opposed to equity securities, and on the design of complex financial securities. The authors conclude that there would be substantial efficiency gains from the homogeneous treatment of different financial transactions under either income or consumption tax reform.

The final paper in the tax reform symposium, "Transitional Issues in Fundamental Tax Reform: a Financial-Accounting Perspective," focuses on the importance of transition rules for business assets in any funda-

mental tax reform. Mel Schwarz, Peter Merrill, and Chris Edwards show that reform proposals that extinguish the value of existing depreciation deductions for past purchases of capital goods, or that eliminate the tax deductibility of interest payments at the corporate level, could have large effects on the prospective tax liability of some firms. More importantly, they show that there are substantial disparities across firms in the impact of fundamental tax reform. Along with the other papers in the symposium, this study shows that it is extremely important to analyze the incidence effects of particular fundamental tax reform proposals, with fully articulated transition rules, rather than simply to analyze abstract proposals for tax reform.

The nine papers in this volume represent important contributions to the ongoing public-policy dialogue on the design of tax and expenditure programs. They testify to the ongoing intellectual exchange between academic public-finance researchers and the policy-making community, and they suggest the broad array of topics on which academic research in public economics bears on policy debate.

ACKNOWLEDGMENTS

In planning and organizing the twelfth Tax Policy and the Economy meeting, I have incurred debts to many individuals. Martin Feldstein, President of the NBER, has been an active supporter of this conference since its beginning more than a decade ago. Deborah Mankiw and Liz Cary, who coordinate corporate and foundation relations at the NBER, have been very helpful in communicating information about the conference to interested potential participants. The NBER Conference Department, particularly Conference Director Kirsten Foss Davis and Rob Shannon, have organized the conference logistics with their usual efficiency and extraordinary good cheer. Donna Zerwitz coordinated media relations for the conference, and Elizabeth Gertsch oversaw the publication process.

I am also grateful to Lawrence Lindsey, a former NBER affiliate and Governor of the Federal Reserve Board, who delivered the luncheon address at our conference. His talk provided many important suggestions regarding potential directions for tax policymaking in the next few years, and it substantially enhanced this year's meeting.

Finally, I wish to thank each of the authors whose papers are included in this volume for striving to communicate their important research findings in a readable and clear fashion. I appreciate their efforts and willingness to participate in this very important opportunity for interchange between academics and policymakers.

CONTENTS

COST SHIFTING OR COST CUTTING?: THE INCIDENCE OF REDUCTIONS IN MEDICARE PAYMENTS

David M. Cutler
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EXECUTIVE SUMMARY

This paper examines how reductions in hospital payments by Medicare affect hospital operations. I look at two episodes of payment reductions: the late 1980s and the early 1990s. I find a large difference in the impact of payment reductions in these two time periods. In the 1980s, reduced Medicare payments were offset dollar for dollar by increased prices to private insurers. In the 1990s, however, payment reductions result in lower hospital profits, which must ultimately reduce hospital costs. Hospitals have responded to the payment reductions by reducing the number of beds and nurses, and sometimes by closing entirely, but not by reduced acquisition of high-tech equipment.

1. INTRODUCTION

Because Medicare is such a large part of the federal budget, federal deficit reduction measures necessarily look to Medicare for cost savings.

This paper was prepared for the National Bureau of Economic Research conference on Tax Policy and the Economy, November 1997. I am grateful to Dan Altman for outstanding research assistance, and to Jim Poterba and Doug Staiger for helpful comments. This research was supported by grants from the National Institutes on Aging, the Commonwealth Foundation, and the Robert Wood Johnson Foundation to the National Bureau of Economic Research.

In a series of deficit reduction measures in the mid-1980s, in the Omnibus Budget Reconciliation Act (OBRA) of 1990, in the OBRA of 1993, and again in the Balanced Budget Act of 1997, cuts in Medicare were an essential component of fiscal policy. In all of these cases, Medicare cuts were achieved primarily by paying providers less for the same services; changes in costs to beneficiaries have been minimal.

While cutting provider payments seems like a natural way to help balance the budget, there has been little work on the implications of these payment cuts. Are the cost savings from the public sector passed on to private insurers, in the form of higher charges for their patients? Or do cuts in Medicare translate into reduced hospital services? The public-policy implications of cutting Medicare depend critically on this answer. If cuts in Medicare just increase private insurance premiums, the cut is just a disguised tax increase to pay for Medicare. If Medicare cuts reduce service quality or care for the uninsured, however, the cuts could have very important effects on the medical system.

Research on the effect of Medicare payment reforms does not provide a clear answer to this question. On the one hand is evidence that the physical inputs hospitals provide are sensitive to reimbursement rates. Feder, Hadley, and Zuckerman (1987), for example, show that the implementation of the Prospective Payment System (PPS) reduced hospital inputs—particularly the length of hospital stays—substantially. Other studies, reviewed in Coelen and Gaumer (1991), reach a similar conclusion. On the other hand is the widespread belief that hospitals frequently shift costs from public to private payers when public reimbursement becomes less generous. Research from the late 1980s, for example, documented that at that time, Medicare payment was about 10 percent below hospital costs, and Medicaid payment was about 20 percent below costs, with private insurers paying about 30 percent above costs (Prospective Payment Assessment Commission, 1994). If such cost shifting were complete, it would eliminate the need for cost cutting in response to Medicare payment reductions.

Understanding the incidence of Medicare cuts is particularly important because of the growing role of managed care in the medical care system. Figure 1 shows the nature of private health insurance over the past two decades. In 1980, over 90 percent of the population was enrolled in unmanaged fee-for-service (FFS) insurance, with a small residual in a health maintenance organization (HMO). By 1992, most fee-for-service insurance was "managed" (generally with utilization review procedures), and total fee-for-service enrollment was only about one-half of private insurance. The remainder was group- and staff-model HMOs, along with preferred provider organizations (PPOs). By 1996, fee-for-service insurance

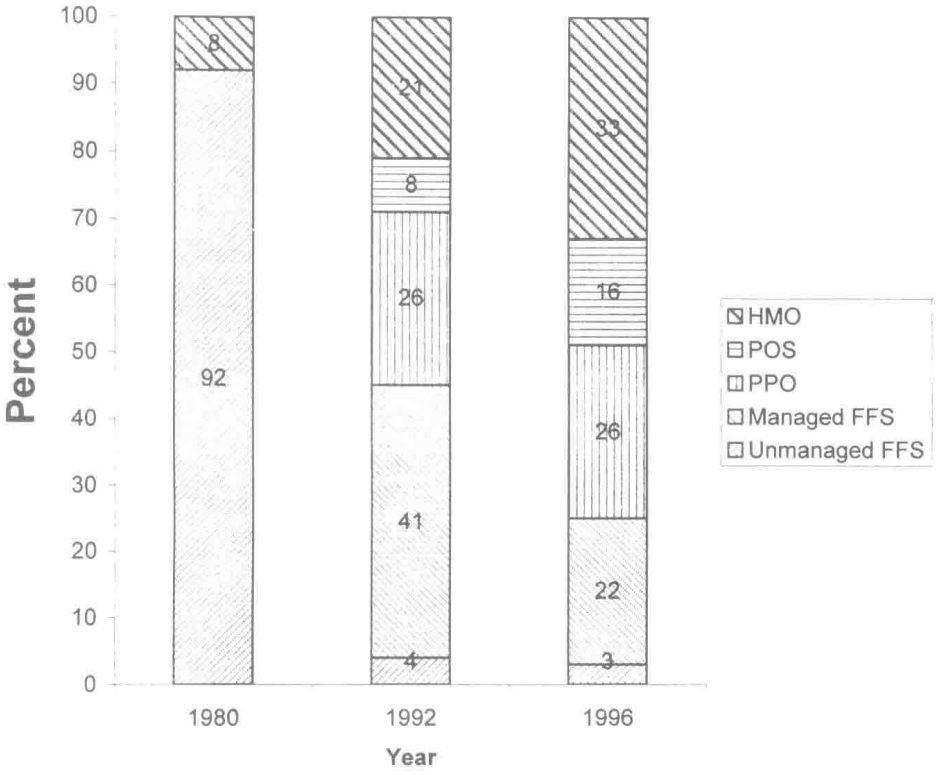

FIGURE 1. *Changes in Private-Health-Plan Enrollment*

was only 25 percent of the privately insured population, with HMOs—particularly those with an out-of-network (points-of-service) option—becoming the dominant insurance source of private insurance. By controlling where patients are admitted to hospitals and negotiating more strenuously with providers, managed-care insurers might prevent the type of cost shifting that traditional indemnity insurers could not. As managed care comes to dominate the medical care system, therefore, payment reductions may translate more immediately into cost reductions, with implications for both Medicare and non-Medicare patients.

In this paper, I examine empirically the economic implications of reduced Medicare payments to hospitals. I begin by forming a measure of the Medicare *bite* for each hospital—the reduction in Medicare payments resulting from policy actions. Medicare payment per hospital admission is based on the diagnosis-related group (DRG) system: each patient is placed in a single DRG, and the payment to the hospital is the product of the severity of that DRG and a conversion factor that translates DRG weights into dollars. Over time, the conversion factor was designed to

increase with the cost of medical inputs that hospitals purchase. But recent deficit reduction measures have reduced the increase in this update factor. The difference between the growth of the hospital market basket and the actual growth of Medicare payments, times the hospital's number of Medicare patients, is the measure of the Medicare bite.

I analyze the effect of Medicare payment reductions in two periods: the late 1980s (1985–1990), and the early 1990s (1990–1995). The Medicare bite in the late 1980s averaged $175 per patient in the hospital (both Medicare and non-Medicare patients), while in the early 1990s the bite averaged $121 per patient in the hospital.

I first examine whether these Medicare cuts were shifted onto private payers or whether they resulted in lower hospital costs. I find a striking difference between the effect of cuts in the 1980s and in the 1990s. In the 1980s, cuts in Medicare were entirely shifted to private payers; there does not appear to be any cost cutting resulting from the payment reduction. In the 1990s, however, there is much less cost shifting. Cuts appear to be met almost entirely from lower hospital costs, rather than by cost shifting. This is consistent with the growing role of managed care in private insurance. Indeed, I show that in the 1990s, cost shifting is less prevalent in areas of the country where managed care is higher than in areas where managed care is smaller.

I then examine which services are cut back when Medicare payments are reduced. I focus predominantly on the early 1990s, since that is the period where cost cutting is more substantial. I find that some hospitals responded to payment cuts by closing entirely, although the magnitude of this change was small. More commonly, hospitals responded by reducing the number of beds and reducing nursing personnel. I find no evidence that over this time period Medicare cuts reduced the diffusion of high-tech care or led hospitals to shut emergency rooms or trauma centers predominantly serving the poor.

The paper is structured as follows. I begin in the next section by describing the basics of Medicare payment and what it means to "cut" Medicare. The second section presents a simple model of cost shifting and cost cutting in response to reduced Medicare payments. In the third section, I consider whether Medicare cuts were shifted to private insurers or whether they resulted in lower hospital costs. The fourth section then examines how hospitals reduced costs. The last section concludes.

2. THE BASICS OF MEDICARE PAYMENT

To understand what "cutting Medicare" involves, it is necessary to go into some detail on Medicare pricing. The simplest example of Medicare

pricing is for hospital services; this is also the area where Medicare cuts are largest so the issue is most salient. In the empirical work below, I focus exclusively on reductions in payments to hospitals.

Since 1984, Medicare payments to hospitals have been made on a PPS basis. Each hospital admission is categorized into one of roughly 470 DRGs. The DRGs are assigned a relative weight, based on average costs of treating people in that DRG in previous years. The average weight is about 1. Payments to hospitals are a product of the DRG weight and a factor that converts weights into dollars:

$$\text{payment}_{i,h} = P_h \cdot \text{DRG weight}_i, \tag{1}$$

where i is the patient and h is the hospital. The conversion factor P_h varies somewhat across hospitals—for example, between rural and urban hospitals—but not by a great deal. The variation in payments within a DRG across hospitals is not very high.

Over time, the growth of the conversion factor, known as the PPS update, is designed to increase roughly in line with the "market basket" of goods and services that hospitals purchase.[1] But in an effort to save money, the government has periodically increased hospital payments by less than the market-basket increase.

Table 1 shows the nature of these changes. In virtually every year of the late 1980s, there were significant Medicare cuts. In part these cuts were designed to save money, and in part they offset initial hospital responses to the implementation of PPS. When PPS was implemented, hospitals quickly found out that they could receive additional payments if they "upcoded" their patients into more highly weighted DRGs. For example, hospitals were reimbursed greater amounts for patients with a complication and/or comorbidity than for patients without any complications, despite the fact that the treatment received might be the same. Thus, there was a concerted effort in many hospitals to record complications and comorbidities more carefully (Carter and Ginsburg, 1985). The result was that Medicare spending was much greater than anticipated, leading to corrective measures to reduce the update factor.

The most important Medicare payment changes in the 1980s were CO-

[1] The actual process is somewhat more complicated. A recommendation about update factors is made by the Prospective Payment Assessment Commission (ProPAC) and by the Health Care Financing Administration (HCFA), and is then approved by Congress. The expected growth of the market basket is the principal factor involved in the ProPAC and HCFA recommendations, although both groups also look at several other factors, including cost-increasing scientific and technological advances, how much DRG upcoding there has been, and whether to create "incentives" for hospital productivity improvements.