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## Expanded Medicaid Crowded Out Private Insurance

One popular option for health care reform in the United States is to make particular groups, such as children, eligible for public health insurance coverage. But will such public eligibility crowd out the private insurance coverage of these groups?

According to a new NBER study by **David Cutler** and **Jonathan Gruber**, the dramatic expansions of the Medicaid program during 1987-92 did exactly that. Over that period, Medicaid eligibility for children increased by 50 percent and eligibility for pregnant women doubled. Cutler and Gruber find that 50 to 75 percent of the associated increase in Medicaid coverage was accompanied by a reduction in private insurance coverage. This occurred mainly because employees less frequently took up insurance offered by their employers, although the employers themselves may have encouraged this by contributing less toward premiums. There is also some evidence that, since children would be covered by Medicaid, workers dropped coverage for their family and switched into individual policies.

In **Does Public Insurance Crowd Out Private Insurance?** (*NBER Working Paper No. 5082*), Cutler and Gruber explain that Medicaid eligibility for women and

children used to be tied to receipt of AFDC (Aid to Families with Dependent Children). However, this connection was gradually severed and by 1992, almost one-third of American children were eligible for full public health insurance coverage, and over 40 percent of women of childbearing age could receive public coverage for pregnancy-related expenses.

To examine the crowding out of private coverage, the authors relate the increase in Medicaid eligibility for each family to coverage under Medicaid and under private insurance. They conclude that the expansions increased Medicaid coverage of children by 1.5 million

persons but led to a decline in the private coverage of this group of about 0.7 million.

For women of childbearing age, there was a Medicaid increase of 0.8 million, but a reduction in private coverage of the same amount: the "crowdout" (of public by private insurance) for this group was 100 percent. Finally, coverage of other adults fell by an estimated 0.2 million. Direct coverage therefore increased by 2.3 million people, but was offset by a 1.7 million person decline in private coverage for a crowding out of 74 percent.

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In addition to direct Medicaid coverage, some currently uninsured women and children would be eligible for Medicaid if they need care, but do not sign up until they have an acute medical need. The authors estimate that 1.3 million persons were "conditionally covered" in this fashion. Adding these people to the 2.3 million who are directly covered leads to an effective increase in coverage of 3.6 million people. At this level, the reduction in private coverage is 47 percent of the increase in Medicaid coverage. Therefore, Cutler and Gruber estimate that the net crowdout of Medicaid is between 47 and 74 percent of the increase in coverage.

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## Does the Presence of Women on Faculty Affect Female Students' Majors?

Female college undergraduates are much less likely to major in science, mathematics, and engineering than their male colleagues. It is asserted frequently that the enrollment of female undergraduates in these fields can be increased by raising female representation on their faculties. The female teachers, it is assumed, will be "role models" for female students. Despite the

*per No. 4874*), **Brandice Canes** and **Harvey Rosen** track the numbers of female faculty and students across departments and over time in three different academic institutions. In general, they find no evidence that an increase in the number of females on a department's faculty leads to an increase in that department's share of female un-

dergraduate majors. However, this correlation tells nothing about whether undergraduates' choices of majors are influenced by the gender composition of the faculty.

The authors thus look at variations in the proportion of female faculty over time in the various departments to see if this has brought any change in the proportion of female students. They find no statistically significant correlation in any of the three schools. They then examine whether this finding continues to hold under several alternative statistical approaches. Does the presence of just one female faculty member in a department destroy the perception that only men can succeed in the field? Must the proportion of female faculty exceed some critical threshold in order to induce more female undergraduate enrollment? Does the department size, or a change in the number (as opposed to the proportion) of female faculty over time, have an effect? Finally, Canes and Rosen pool the data from all three schools. However, regardless of how the data are analyzed, the conclusion is the same: adding more female role models to the faculty has no statistically discernible effect on the gender composition of its undergraduate majors. DRF

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widespread acceptance of this view, there appears to have been no statistical research applied to test the assertion that the gender composition of an academic department affects the gender composition of its majors. Any evidence for the importance of role models in the psychological and sociological literature on education and career development comes from surveys that ask young women what factors determine their choice of careers.

In **Following in Her Footsteps? Women's Choices of College Majors and Faculty Gender Composition** (*NBER Working Pa-*

dergraduate majors.

Canes and Rosen collect data from three schools of different size and character: Princeton University, the University of Michigan at Ann Arbor, and Whittier College. These three institutions provided data on the gender of students and faculty between 1974 and 1988. Canes and Rosen note that female faculty and female undergraduates do tend to end up in the same departments. At Princeton, for instance, the proportion of female faculty in the chemistry department is tiny compared to that in romance languages and literature, and the same is true for female stu-

## Government Underestimated Behavioral Responses to Tax Changes in the Eighties

One of the continuing controversies about tax policy is whether and to what extent people change their behavior as a result of changes in the tax code. Some research-

ers have argued that the disincentive effects of increases in marginal tax rates in the United States in the 1980s and early 1990s caused revenues to rise less than had been

anticipated by policymakers. This question has continuing policy importance, given the persistence of large budget deficits and the likelihood that further changes will be

made in tax rates. Now a new NBER study by **Alan Auerbach** finds that taxpayers' behavioral responses may have contributed to errors in revenue forecasting.

In **Tax Projections and the Budget: Lessons from the 1980s** (*NBER Working Paper No. 5009*), Auerbach examines data from the Office of Management and Budget (OMB), including annual budget forecasts and estimates of policy changes for each fiscal year from 1982-93. The data also show the errors in revenue forecasts that resulted.

These forecast errors are divided into three mutually exclusive components: 1) policy errors, caused by inaccurate predictions of the policies that would be followed; 2) economic errors, resulting from inaccurate forecasts of macroeconomic variables such as GDP, interest rates, and inflation; and 3) "technical errors"—the residual forecast errors that OMB attributes neither to policy changes nor to

macroeconomic performance.

Auerbach's analysis focuses on these technical errors, since they might arise, in part, as a result of unexpected behavioral responses.

the period as a whole, as were individual income tax revenues. However, both corporate income taxes and excise taxes were substantially overpredicted. Behavioral responses to taxation, these results

"[R]evenue forecast errors are statistically related to the estimated revenues from recent tax increases, suggesting that the initial revenue estimates themselves were overstated. In the case of corporate taxes, behavioral responses account for one-third of the very large average overprediction."

His study compares the estimated revenue effects of legislation to the actual revenues. The three types of taxes that he studies—corporate income taxes, individual income taxes, and excise taxes—together account for some 60 percent of all revenues.

Auerbach finds that total revenues were slightly overforecast for

suggest, in part explain these systematic errors. That is, revenue forecast errors are statistically related to the estimated revenues from recent tax increases, suggesting that the initial revenue estimates themselves were overstated. In the case of corporate taxes, behavioral responses account for one-third of the very large average overprediction.

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## Taxes and Antismoking Measures Reduce Smoking Among College Students

The Clinton administration's Health Security Act of 1993 called for a 75 cent per pack increase in the federal tax on cigarettes. If the

by approximately 30 percent, and overall cigarette consumption by college students would have fallen by almost two-thirds, according to

the case following past cigarette tax hikes, the impact on consumption by college students might have been even greater.

Further, this tax measure would have resulted in substantial long-run improvements in health, they report in **Price, Tobacco Control Policies, and Smoking Among Young Adults** (*NBER Working Paper No. 5012*). The number of smokers aged 18 through 24 would have declined by more than 1.8 million. "Using the relatively conservative estimate that one in four smokers will die prematurely as the result of smoking-related illnesses, the 75-cent increase would

"[A] 10 percent increase in price would reduce smoking rates by these college students by 6 percent to 7 percent, and reduce cigarette consumption among smokers by 7 to 8 percent."

measure had succeeded and the tax been passed on fully to smokers, smoking rates among college students would have been reduced

a recent NBER study by **Frank Chaloupka** and **Henry Wechsler**. If cigarette prices had risen even more than the tax increase, as was

have reduced the number of premature deaths in this age cohort by over 450,000," Chaloupka and Wechsler write. Similar reductions in smoking and premature deaths related to smoking likely would occur among those under 18 years of age. But somewhat smaller reductions would occur among older smokers who are less sensitive to price changes.

For this analysis, the authors use data from a nationally representative sample of 17,592 students attending 140 U.S. four-year colleges and universities, conducted by Harvard College in 1993. The survey focused on binge drinking, but also collected information on cigarette smoking. The data suggest that a 10 percent increase in price would reduce smoking rates by these college students by 6 percent to 7 percent, and reduce cigarette consumption among smokers by 7 to 8 percent.

Thus Chaloupka and Wechsler conclude that increases in cigarette excise taxes "are a very effective means of reducing cigarette smoking among youths and young adults. Given that almost no smokers begin smoking after 20 years of age, discouraging smoking in this age group is likely to lead to permanent reductions in cigarette smoking among all age groups," they note. Evidence from three other studies indicates that the price responsiveness in the noncollege student group could be even greater than among college students.

These findings imply that a sustained increase in cigarette taxes initially will lead to large increases in revenues, since the smoking population is dominated by relatively older smokers. Eventually, though, the population will be comprised mostly of people whose initial smoking decisions were more sensitive to price, leading to

relatively larger reductions in the number of smokers. Consequently, the revenues eventually would decline. "Nevertheless," the authors note, "the long-run revenue maximizing level of the tax is well above its current level."

This study also indicates that other antismoking measures have an impact, although a smaller one. For example, relatively strict restrictions on smoking in public places discourage college students from smoking. In particular, state or local laws limiting smoking in restaurants significantly lower smoking rates among college students.

Some restrictions on public smoking also lower average cigarette consumption among smokers. But restrictions on smoking in retail stores or schools have little impact. And, limits on the availability of tobacco products to youths have little effect on the smoking habits of college students. DRF

## Competition from Private Schools Is Good for Public Schools

Arguments in favor of school choice depend on the idea that competition between schools improves the quality of education. However, there has been almost no empirical evidence on this subject. Now a new NBER study by **Caroline Minter Hoxby** confirms that greater private school competitiveness significantly raises the quality of public schools, as measured by the educational attainment, wages, and high school graduation rates of public school students. In addition, she finds some evidence that public schools react to greater competitiveness of private schools by paying higher teacher salaries.

In **Do Private Schools Provide Competition for Public Schools?** (*NBER Working Paper No. 4978*),

Hoxby points out that there are two components to the choice of private schooling: quality of the public schools, and availability of private schools. Because poor

ty with the increased demand for private schools in areas where public schools perform poorly.

Hoxby notes that religious schools account for nearly 9 out of

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"[G]reater private school competition improves the way that public schools operate, mostly by means that do not require higher spending."

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quality in the public schools raises the demand for private schools, one cannot simply compare how public school students do in areas with and without substantial private school enrollment. Such simple comparisons confuse the effect of greater private school availabili-

10 private school students in the United States. Since the religious composition of an area is largely a matter of historical accident, it is not likely to have an independent effect on the quality of the public schools. Thus the religious composition of an area is a good measure

of potential competition for public schools: it is strongly correlated with the costs of private schools, but not with other sources of demand for private schools (for example, poor underlying public school quality). Using only the variations in private school enrollment caused by differences in the religious composition of the local population, Hoxby distinguishes the pure effect of greater private school competition.

In 1994, religious private schools accounted for 85 percent of U.S. private school enrollment, with Catholic schools alone accounting for 68 percent of private school enrollment. Hoxby finds that a change in the Catholic population of a county—or in the combined Catholic, Lutheran, Jewish, and Episcopalian populations of a county—that translates into a 10

percentage point increase in the share of enrollment in private schools produces an extra 0.33 years of education on average for public high school students, 2 percent higher wages later in life, and a 2 percentile increase in standardized test scores. The same improvements would result from a \$500 decrease in Catholic school tuition, she estimates.

Increased availability of private schools increases public school teachers' salaries and decreases public school spending (and the number of public school students). But exclusive of these effects, the same 10 percentage point increase in the private school share of enrollment generates an additional 0.9 years of educational attainment, 6 percent higher wages, and a 7 percentile increase in standardized test scores for public school students.

Hoxby tests and eliminates a number of potential explanations for her findings, including the possibility that simply having a more religious or homogeneous population accounts for the improvement in public school students' outcomes. She also tests, but finds no evidence for, the explanation that private schools select less able students, so that public schools are left with better students in areas where private school enrollment is higher. The one remaining hypothesis consistent with all the results is that greater private school competition improves the way that public schools operate, mostly by means that do not require higher spending. Hoxby concludes that policies that increase the ability of private schools to compete with public schools will help all students—both public school and private school.

## Foreign Taxes Influence Local R and D

Many governments encourage businesses to develop and use new technologies within their borders, because they believe that using these new technologies will

enhance their national productivities. And in fact, evidence indicates that the economic benefits of research and development (R and D) do extend to local firms in addition to those undertaking the R and D.

“[R]oyalty tax rates have important effects on the R and D operations of foreign affiliates of U.S. multinationals.”

enhance their national productivities. And in fact, evidence indicates that the economic benefits of research and development (R and D) do extend to local firms in addition to those undertaking the R and D.

If multinational firms develop new technologies in their home countries and then use them in for-

foreign locations, they are required to pay royalties from their foreign affiliates to their domestic parent companies. These royalty payments are subject to taxation; high

royalty tax rates make it expensive for multinational corporations to transfer technology from parent companies to foreign affiliates.

In **Taxes, Technology Transfer, and the R and D Activities of Multinational Firms** (*NBER Working Paper No. 4932*), **James Hines** investigates the impact of royalty

taxes on the proclivity of multinational firms to undertake R and D in foreign locations. He confirms that foreign affiliates pay fewer royalties to parent companies when those royalties are taxed more heavily. By raising the cost of providing foreign affiliates with technology developed by parent companies, royalty taxes may influence R and D spending by foreign affiliates. But whether spending rises or falls—that is, whether affiliates perform more or less R and D—depends on how they react to the increased cost of parent-company technology. It is possible that foreign affiliates will react to higher royalty taxes by performing additional R and D to substitute for expensive technology imports from their parent firms.

Hines concludes that royalty tax rates do significantly influence spending on R and D. Correcting for national differences in technological development, he estimates that the R and D intensity of the operations of foreign affiliates of U.S. multinationals increases by 11

percent to 16 percent as royalty taxes double. This suggests that royalty tax rates have important effects on the R and D operations of foreign affiliates of U.S. multinationals, and that local R and D is a substitute for imported technology. Hines observes similar patterns in

the behavior of foreign firms investing in the United States.

These findings are based on an analysis of survey data for 1987 and 1989 collected by the U.S. Department of Commerce.

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