The NBER Digest
NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.

September 1994

UI Benefit Levels Influence Whether the Unemployed Collect

Does the amount of unemployment insurance (UI) you can collect influence whether or not you file for benefits? Yes, according to a new study for the NBER by **Patricia Anderson** and **Bruce Meyer.** In **Unemployent Insurance Benefits and Takeup Rates** (*NBER Working Paper No. 4787*), they find a clear link between the generosity of the UI program and the propensity to file for benefits. However, the length of time that the UI benefits last does not appear to affect whether a person files, they conclude.

Anderson and Meyer estimate that the increased propensity to file for UI in response to a 10 percent increase in benefits ranges from 5 to 8 percent. They also find that most of the decline in the receipt of UI benefits among the unemployed in the 1980s can be explained by the fact that UI benefits became subject to income tax during this period.

Finally, the authors find that those who expect short spells of unemployment are less likely to file for UI. Thus, "if the decision to file for UI is affected by benefit levels and the expected duration of unemployment, it will bias estimates of the effects of UI on unemployment duration," they conclude.

"Most of the decline in the receipt of UI benefits among the unemployed in the 1980s can be explained by the fact that UI benefits became subject to income tax during this period."

The data used in this study were collected in the late 1970s and early 1980s from the UI systems of six states. They consist of quarterly wage records for a large sample of the states' covered workers, and UI claims records.

Family and Child Characteristics, but Not Schools, Influence Math Achievement

"The 1992 eighth-grade mathematics test of the National Assessment of Educational Progress [NAEP] reveals a low average level of achievement, wide variation across states, and a large difference in average scores of white and black students," **Victor Fuchs** and **Diane Reklis** report in a new NBER study. Their careful analysis then shows that "the characteristics of children (such as readiness to learn in kindergarten) and of the households in which they live (such as mother's education) have much larger effects on NAEP test scores than do variables (such as the student/teacher ratio) that measure school characteristics." Further, black–white differences in the characteristics of children and their households explain much of the racial differences in NAEP test scores, they find.

In **Mathematical Achievement in Eighth Grade: Interstate and Racial Differences** (*NBER Working Paper No. 4784*), Fuchs and Reklis explain that, beyond average NAEP scores being low, there is nearly a 40 point gap (about 15 percent) between the lowest and highest state's score. Further, the highest average state score for blacks is below the lowest average state score for whites.

"The most consistent predictors of interstate differences in mathematical achievement are the percent of children who enter kindergarten ready to learn and the percent of mothers who dropped out of high school."

The most important determinant of NAEP scores, the authors find, is "readiness to learn in kindergarten." A measure of that characteristic comes from a new series developed by the Carnegie Foundation for the Advancement of Teaching, based on kindergarten teachers' responses in 1990 to questions about students' "physical well-being, social confidence, emotional maturity, language richness, general knowledge, and moral awareness."

Readiness to learn in kindergarten, in turn, is influenced positively by the level of the mother's education and negatively by living in a single-adult household. In households with two adults, if both work at least 20 hours per week, there is a slightly negative effect on a child's readiness to learn; if one adult works less than 20 hours and the other more, there's a slight positive effect on readiness to learn. There is also a large racial difference in readiness to learn in kindergarten, attributable primarily to the percentage of black children living with only one adult, and to the higher education levels of white mothers.

In sum, Fuchs and Reklis find, the most consistent predictors of interstate differences in mathematical achievement are the percent of children who enter kindergarten ready to learn and the percent of mothers who dropped out of high school. If both parents work in paid jobs, there is a positive effect on math achievement. Most of the racial differences in achievement also can be explained by readiness to learn in kindergarten, mother's education, and poverty. In fact, the only school-related variable of significance, Fuchs and Reklis find, is the share of school revenues supplied by the state, which has a small negative effect on achievement.

Fuchs and Reklis also examine a number of factors that turn out not to affect math test scores: percent of children moving within the past year, living in a large city, or living with two unmarried adults; percent of children whose mothers received prenatal care; the median household income per person, and the percent of poor children in Head Start; school expenditures per student; the percent of children aged 9 to 13 in private school; and the percent of children aged 3 to 4 in preschool.

Minimum Wage Affects Schooling and Employment

According to an NBER study by **David Neumark** and **William Wascher**, recent research on

the effect of the minimum wage on teenagers may have ignored the interaction between schooling and employment. In **Minimum Wage Effects on Employment and School Enrollment** (*NBER Working Paper No. 4679*), the authors consider that school enrollment and employment may be determined jointly. They find that the minimum wage reduces the school enrollment rate of teenagers and increases the proportion of teens who are both out of school and without a job.

This is consistent with the following scenario: an increase in the minimum wage makes it more attractive for teens to quit school and look for a job. But since employers now must pay more for workers, they seek out only the best qualified and hardest working teens. Thus, teenagers with low levels of skills, or productivity, are "left out in the cold": out of school and not employed.

"The minimum wage reduces the school enrollment rate of teenagers and increases the proportion of teens who are both out of school and without a job."

Neumark and Wascher use data from all 50 states and the District of Columbia for 1977–89. They have information on federal and state minimum wage levels, coverage by federal minimum wage statutes, state averages of wage rates, unemployment rates, employment rates, school enrollment rates, the age composition of the state population, and statutory schooling requirements and educational quality.

Taxes Influence the Type and Number of Fringe Benefits

The U.S. tax code encourages employers to provide their employees with fringe benefits by making the cost of those benefits deductible from the employers' taxes but not taxable to employees. Whether these tax incentives are effective is of significance now because of the debate over health care financing, which includes proposals to either expand or curtail the existing tax advantages of health insurance.

In **Taxes and Fringe Benefits Offered by Employers** (*NBER Working Paper No. 4764*), **William Gentry** and **Eric Peress** find that higher income tax rates increase the provision of fringe benefits. Employees find it financially beneficial to obtain tax-free benefits instead of straight wages, and thus they pressure employers for those benefits. This increase in benefits is both economically and statistically significant for blue collar workers, while the results are less clear for white collar workers, a smaller, more diverse group of employees.

Changes in taxes have a similar effect on less common benefits, such as vision care coverage and dental insurance. A one percentage point reduction in the marginal income tax rate reduces the percentage of blue collar workers who are offered medical insurance by 1.8 percentage points, dental insurance by 1.2 percentage points, insurance coverage for glasses or other vision-related remedies by 1.5 percentage points, and drug and alcohol abuse treatment by 0.6 percentage points. In addition, a one percentage point increase in the tax rate increases the percentage of blue collar workers with employer-financed life insurance by 1.2 percentage points, and those with employer-financed pensions by 1.3 percentage points.

"Higher income tax rates increase the provision of fringe benefits."

Higher income taxes also induce some substitution away from contributory benefit plans with explicit cost sharing by employees toward noncontributory plans that are financed entirely by employers. This shift reduces the tax burden on employees because they pay no income taxes on the employer's contribution to insurance coverage. On average across the nation, 43 percent of employers pay the entire health insurance premium; employers pay 85 percent of all health insurance premiums for covered workers.

Gentry and Peress conclude that increasing the tax incentives would raise the number of insured American workers. Moreover, they argue that once enrolled in an employer-provided insurance plan, workers would have an incentive to demand increasingly generous plans. This extra insurance could come in the form of lower deductibles, lower copayments, or coverage for more medical procedures.

Gentry and Peress note that many of the current proposals in the health care debate are geared at limiting or capping the tax advantages of fringe benefits. The goal of these proposals is to maintain a tax subsidy for basic medical insurance without subsidizing excessive fringe benefits. This study indicates that these limits, such as a cap on the amount that employers can deduct for fringe benefits per employee, could curtail the offering of more exotic fringe benefits without greatly influencing how many people are offered basic coverage. An alternative policy—eliminating the special tax treatment of all fringe benefits—might reduce the proportion of people receiving basic coverage, the authors conclude.

For this study, the authors first obtained data on fringe benefits offered by employers in a number of regions of the United States. These regionally aggregated data then were compared with the tax levels in the relevant states. Since tax levels vary from state to state, this approach provided a means for learning whether differences in tax rates actually stimulated the amount and nature of fringe benefits. This regional dataset has certain advantages over national, firm-specific, or individual data that have been used in other studies of this same question. Gentry and Peress adjust the data to account for the education level and age structure of the population, the number of government workers, and the fraction of workers who belong to unions in the various regions and cities. DRF

The Alternative Minimum Tax Changes Incentives for Multinational Corporations

In 1986, in response to concerns that some firms that reported accounting "book" profits paid no federal corporate tax, the federal government instituted an alternative minimum tax (AMT) on corporations. Under this law, a corporation must compute its tax liability under both the regular tax rates and the AMT rules, and pay the higher of the two computed tax liabilities.

A new NBER study finds that the AMT rules have effects on multinational corporations that may not have been intended when the law was passed. In **The Alternative Minimum Tax and the Behavior of Multinational Corporations** (*NBER Working Paper No. 4783*), **Andrew Lyon** and **Gerald Silverstein** show that the AMT increases the taxation of domestic investment, while it tends to reduce the taxation of investment abroad. The AMT also gives multinationals an opportunity to repatriate their foreign earnings at a lower cost in taxes.

Without an AMT, multinational corporations would have a substantially greater incentive to invest in the United States, rather than abroad. For an aggregate category of equipment, Lyon and Silverstein calculate that between 1990 and 1992, a multinational corporation would have faced a marginal effective income tax rate of 26.8 percent if the equipment were located in the United States; for the same investment in equipment located abroad, the company would have faced a 38.3 percent effective income tax rate under the regular tax rules.

"The AMT increases the taxation of domestic investment, while it tends to reduce the taxation of investment abroad."

The AMT changes these relative investment incentives significantly. Under the AMT, a firm still claims the same depreciation deduction for foreign-use property, but income from that investment can be taxed at only 20 percent, rather than the 34 or 35 percent under the regular corporate tax system. The authors write, "The AMT rules thus create an unambiguous reduction in the relative price of investment in foreign-use equipment to domestic-use equipment." For a firm with an initial five-year period of AMT liability, for example, the AMT rules raise the tax rate on domestic investment from 26.8 percent in the earlier example to 32.5 percent. At the same

time, the rules reduce the tax rate on the foreign investment from 38.3 percent to 36.8 percent. The AMT has a similar effect on tax rates on investments in structures. So, although the tax system still gives a larger incentive to investing in the United States rather than abroad, the AMT substantially narrows this difference in incentives.

Lyon and Silverstein also demonstrate that the AMT offers firms the opportunity to repatriate their earnings from abroad at a low cost. In exploring six possible cases, they find that in four of them, the cost of repatriating earnings is below what it would be if the AMT did not exist; in one case, the AMT has no effect. Thus, in only one case does the AMT increase the cost of repatriating earnings, and it does so only slightly.

Lyon and Silverstein, using Internal Revenue Service data on multinational corporations, find that more than half of all foreign-source income in 1990 was earned by corporations subject to the AMT. The authors conclude that the investment incentives and repatriation incentives together suggest that ". . . the AMT provides an opportunity for firms to repatriate income from foreign locations with poor reinvestment opportunities and reinvest the funds abroad in different foreign locations with better opportunities. . . ."

DRH

Does Discounted Cash Flow Predict Market Value?

One of the standard assumptions of modern economics and finance is that the market value of a company or investment can be estimated reliably by calculating the discounted value of its expected future cash flows. There has been little empirical evidence, however, to prove the point. But in a new NBER study, **Steven Kaplan** and **Richard Ruback** look at a sample of recent highly leveraged transactions and find a strong relationship between the market value of the deals and the discounted value of their corresponding cash flow forecasts.

In **The Valuation of Cash Flow Forecasts: An Empirical Analysis** (*NBER Working Paper No. 4724*), Kaplan and Ruback analyze data for 51 management buyouts and leveraged recapitalizations completed between 1980 and 1989. Each had a total transaction value of more than $100 million. Since these deals are initiated by company insiders who potentially stand to benefit at the expense of outside, public shareholders, they are subject to special Securities and Exchange Commission rules. The insiders must state whether the transaction is fair and provide supporting data that usually include cash flow forecasts.

"The median estimates of discounted cash flows are within 10 percent of the actual transaction values for the deals."

The authors compare the transaction values of the deals to estimates of the present value of the relevant cash flows. In making the estimates, they use the insiders' forecasts to estimate the cash flows that will accrue to all capital providers, including different classes of debt and equity. They estimate a terminal value for the deal when the cash flow information ends. They then value the cash flows using three different discount-rate models. Each of the approaches works well. The median estimates of discounted cash flows are within 10 percent of the actual transaction values for the deals.

Kaplan and Ruback compare the performance of their methods to other types of estimates that are commonly used on Wall Street. These "comparable approaches" estimate values for deals by comparing them to companies in similar industries and to companies involved in similar transactions. The authors find that the discounted cash flow methods, individually, perform at least as well as the comparable methods. They also find that using the discounted cash flow methods in tandem with the comparable methods is always better than using the comparable methods alone. Kaplan and Ruback note that the success of their discounted cash flow valuations is impressive because the extremely leveraged capital structures and major changes in organizational forms associated with buyouts and recapitalizations expose the companies involved to greater-than-average uncertainty.

The discounted cash flow valuation methods

that the authors test are generally similar to the basic techniques taught in business schools. The fact that the resulting valuations are approximately equal to the actual transaction values, they conclude, suggests that the basic approach to valuation is both useful and reliable. RN

NBER

The National Bureau of Economic Research is a private nonprofit research organization founded in 1920 and devoted to objective quantitative analysis of the American economy. Its officers are:

President and Chief Executive Officer—Martin Feldstein
Executive Director—Geoffrey Carliner
Director of Finance and Administration—Sam Parker

Chairman—Paul W. McCracken
Vice Chairman—John H. Biggs
Treasurer—Gerald A. Polansky

Contributions to the National Bureau are tax deductible. Inquiries concerning the contributions may be addressed to Martin Feldstein, President, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398.

The **NBER Digest** *summarizes selected Working Papers recently produced as part of the Bureau's program of research. Working Papers are intended to make preliminary research results available to economists in the hope of encouraging discussion and suggestions for revision. The* **Digest** *is issued for similar informational purposes and to stimulate discussion of Working Papers before their final publication. Neither the Working Papers nor the* **Digest** *has been reviewed by the Board of Directors of the NBER.*

The **Digest** *is not copyrighted and may be reproduced freely with appropriate attribution of source. Please provide the NBER's Public Information Department with copies of anything reproduced.*

Preparation of the **Digest** *is under the supervision of Donna Zerwitz, Director of Public Information. The articles indicated by DRF, DRH, and RN were prepared with the assistance of David R. Francis, David R. Henderson, and Rob Norton, respectively.*

A complete list of NBER Working Papers and Reprints can be accessed on the Internet by using our gopher at nber.harvard.edu. Abstracts of all current NBER Working Papers appear in the **NBER Reporter.** *Individual copies of the NBER Working Papers summarized here (and others) are available free of charge to Corporate Associates.* ***For all others, there is a charge of $5.00 per paper requested. (Outside of the United States, add $10.00 per order for postage and handling.) Advance payment is required on all orders. MasterCard and Visa are accepted. Please do not send cash.***

Subscriptions *to the full NBER Working Paper series include all 300 or more papers published each year. Subscriptions are free to Corporate Associates. For others within the United States, the standard rate for a full subscription is $1300; for academic libraries and faculty members, $650. Higher rates apply for foreign orders.*

Partial Working Paper subscriptions, *delineated by program, are also available. For further information or to order, please write: National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398. Or call the Publications Department at (617) 868-3900. Please have the Working Paper Number(s) ready.*

Requests for **Digest** *subscriptions, changes of address, and cancellations should be sent to* **Digest***, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398. Please include the current mailing label.*