

April 2014

IN THIS ISSUE

- Effective Tax Rates of Multinational Firms
- Incentives, Selection, and Teacher Performance
- Who Pays for Public Employee Health Care Costs?
- Income Changes over the Business Cycle: Was the Great Recession Different?
- Comparing Managerial Control and Performance Pay
- Is Voting Habit-Forming?

Effective Tax Rates of Multinational Firms

For decades, scholars and policymakers have debated whether tax rates in the home country of a multinational firm affect the firm's effective tax rate (ETR), or whether opportunities for extensive international tax planning break this link. In **The Impact of Headquarter and Subsidiary Locations on Multinationals' Effective Tax Rates** (NBER Working Paper No. 19621), **Kevin Markle** and **Douglas Shackelford** find that a multinational company's headquarters location is a critical factor in determining its total tax burden. Multinational companies based in higher-taxed Japan and the United States, for instance, continue to pay substantially higher worldwide taxes than their counterparts headquartered in lower-taxed nations.

Using financial data from Orbis and Compustat, the authors examine the ETRs for

“... a multinational company's headquarters location is a critical factor in determining its total tax burden.”

9,022 multinationals from 87 countries from 2006 to 2011. They study the ETRs that are reported on the companies' financial statements. They control for differences in the industry mix of the firms that are based in different nations and other factors that could skew the cross-country differences in ETRs. They find that the ETRs of multinationals vary greatly despite extensive international tax planning and sometimes elaborate schemes to minimize taxes. The location of a company's headquarters does affect its tax bur-

den. Multinational companies in Japan had the highest ETRs, 8.5 percentage points higher,

on average, than multinationals in the United States which faced the second highest ETR in the world. The U.S. rate was slightly higher than the ETRs in France and Germany. The lowest ETRs were paid by multinationals from the Middle East, where ETRs were only one-third those in Japan and in “tax haven” countries. Other low-ETR countries include Singapore, Switzerland, and Taiwan.

The authors also find that the ETRs of multinationals remained relatively stable from 2006 through 2011, with Japan and

the United States consistently ranking high in their ETRs and other lower-tax havens and countries ranking low. They observe that “[t]his stands in contrast to

studies of earlier periods that had documented a steady worldwide decline in ETRs.”

The study examines the consequences of establishing a pres-

ence in a country on a firm’s ETR. The authors find that a company’s ETR usually declines slightly when it enters a tax haven for the first time.

— Jay Fitzgerald

Incentives, Selection, and Teacher Performance

While the effects of teacher quality on student development, achievement, and later outcomes have been widely studied, there is no agreement on how to systematically drive improvements in the quality of teachers. Teacher salaries are traditionally based only on experience and credentials. However, these traits may not have consistent links to teacher quality. In a push toward “pay for performance,” teacher compensation is increasingly measured by teacher performance evaluations, such as the IMPACT policy that was introduced in District of Columbia public schools in 2009. In **Incentives, Selection, and Teacher Performance: Evidence from IMPACT** (NBER Working Paper No. 19529), **Thomas Dee** and **James Wyckoff** examine the effects of the IMPACT program on the retention of high- and low-performing teachers and on the subsequent performance of teachers who were retained.

The IMPACT program established several explicit mea-

asures of teacher performance with a particular emphasis on structured classroom observa-

“...dismissal threats increased the voluntary attrition of low-performing teachers and improved the performance of those who decided to remain.”

tions of teachers’ instructional practices. Overall measured performance implied both large financial incentives for high-performing teachers as well as the threat of dismissal for persistently low-performing teachers.

The IMPACT program used thresholds to determine the effect of measured performance on both pay and dismissal, so the authors were able to compare the retention and performance outcomes among teachers whose prior-year performance scores placed them just below or just above the threshold values for receiving a permanent increase in base salary or a dismissal threat. They argue that teachers who score just above or just below such a threshold are quite similar and that the large disparities in the consequences of their

scores provide an opportunity to study the incentive effects of the IMPACT program.

The results indicate that dismissal threats increased the voluntary attrition of low-performing teachers and improved the performance of those who decided to remain. Moreover, financial incentives further improved the performance of high-performing teachers. Interestingly, most of the action comes in the second year of the program, when it was clearer that the program was politically durable. In the second year, the dismissal threat increased the attrition of low-performing teachers by 11 percentage points, an increase of over 50 percent. The performance gains among remaining teachers were equivalent to moving a teacher from the 10th to the 15th percentile of the performance distribution.

— Claire Brunel

Who Pays for Public Employee Health Care Costs?

When the cost of health insurance for public sector workers rises, is the higher charge reflected in higher taxes, in lower wages or other benefits for the employees, or in some combination of the two? In **Who Pays for Public Employee Health Costs?** (NBER Working Paper No. 19574) **Jeffrey Clemens** and **David Cutler** find that about 15 percent of the cost of recent benefit growth was paid by school district employees through reductions in wages and salaries. They find that in tough economic times, a larger share of the cost increase is borne by the workers themselves through cutbacks in other compensation.

One in seven workers is employed by a state or local government. These employers spent \$70 billion (in 2012 dollars) on health insurance in 2001, and \$117 billion in 2010, for an increase of \$130 per capita. In the private sector, businesses may pass such costs back to workers in the form of increased cost sharing for health insurance, less

coverage, lower contributions to employee benefits, or smaller wage increases, or they may

“... the compensation of school district employees tended to rise, on net, by 85 cents for each dollar increase in benefit costs.”

increase prices for their products. But where wages and benefits are covered by union contracts—as is the case for many state and local employees—the opportunity for shifting costs to workers is often limited.

To understand how governments have responded, the authors analyze data on school district budgets and the benefit costs associated with their employees over the period between 2001 and 2012. They find that benefit-driven increases in employee compensation were largely financed by resource transfers from higher levels of government, often in the form of transfers for which the states and districts had some discretion in reporting. One-third of the relevant dollars, for exam-

ple, are associated with “categorical aid” for students with special needs. The analysts conclude

that the compensation of school district employees tended to rise, on net, by 85 cents for each dollar increase in benefit costs.

Clemens and Cutler also compare the costs of employee health plans for state government employees to the average cost of private employer-provided health plans. They conclude that state governments raised premium requirements relatively more for more generous plans, which were typically in states with prominent public unions, than did private employers. Coupled with a slowdown in premium growth, this change suggests that state governments achieved significant savings relative to trends in the private sector.

— Matt Nesvisky

Income Changes over the Business Cycle: Was the Great Recession Different?

To a much greater degree than in the three previous economic downturns, the fall in

median income during and after the Great Recession was accounted for by rising job-

lessness rather than by falling wages, according to **Accounting for Income Changes over the**

Great Recession (2007–2010) Relative to Previous Recessions: The Importance of Taxes and Transfers (NBER Working Paper No. 19699). Moreover, the study’s authors, **Jeff Larrimore, Richard Burkhauser, and Philip Armour**, find that timely federal tax cuts combined with increases in food stamps and other in-kind transfers normally not captured in Census Bureau income statistics, greatly cushioned the blow of falling incomes, limiting what would have been a 7.0 percent decline in median incomes over the 2007–10 period to a 4.1 percent decline. In contrast, tax increases in the sharp recession of 1979–82 compounded the worsening economic conditions, turning a 5.8 percent decline in median income into a 6.6 percent drop.

The authors show that this helps explain the surprising finding that when government taxes and in-kind transfers are added to the income normally captured by the Census Bureau, the actual decline in median income was smaller during the Great Recession than during the recession of 1979–82. They note that “previous decomposition studies have not included the role of either tax policies or in-kind transfers, [so] they will greatly understate the increasing role that government policies have played in mitigating median post-tax household income declines and understate the resources that were available to the bottom half of the distribution of Americans over the Great Recession.”

This importance of government tax credits and in-kind transfer income is most pro-

“... timely federal tax cuts, combined with increases in food stamps and other in-kind transfers... greatly cushioned the blow of falling incomes...”

nounced when looking at the bottom quintile of the income distribution. A measure of income that only includes market income (wages, rents, dividends, etc.) and in-cash government income (unemployment insurance, Social Security benefits, etc.) — what the authors call “pre-tax” income — fell by 12.3 percent for households in the bottom quintile. But after accounting for government tax policies and in-kind transfers like food stamps (SNAP), mean “post-tax” income declined only 4.1 percent. During the 1979–82 period, in contrast, the nearly 14 percent decline in mean pre-tax income for the bottom quintile was hardly affected by after-tax and in-kind transfers.

The post-tax effects on the mean income of households in the top quintile were more subtle but still positive. The authors find a 4.2 percent decline in pre-tax income, compared with a 3.1 percent decline in post-tax income. In 1979–82, for the top quintile, pre-tax income fell 1.4 percent and post-tax income declined by 2.8 percent.

One of the starkest contrasts between 1979–82 and 2007–10 involves the earnings of male workers who were heads of households. Mean earnings

of full-time workers dropped 3.9 percent in the earlier period; they actually rose 0.9 percent

in the later period. The biggest single difference in the government’s response to the two sharp recessions was tax policy. In the high inflation era of 1979–82, tax brackets were more progressive than in the later period and they weren’t indexed for inflation. Households were therefore pushed into higher brackets (so-called bracket creep) and paid more taxes even when their real incomes weren’t rising. But the Great Recession spawned tax rebates and cuts under the Economic Stimulus Act of 2008 and the American Recovery and Reinvestment Act of 2009; these boosted median post-tax income by 2.0 percentage points.

Almost as important as tax changes to mitigating the 2007–10 downturn were public transfers, especially increases in unemployment benefits, workers’ compensation, veterans’ benefits, and food stamps. Adjusting for changes in household size, mean public transfers per person rose 24.8 percent from 2007 to 2010, more than twice the increase from 1979 to 1982, and boosted post-tax median income by 1.7 percentage points.

— Laurent Belsie

Comparing Managerial Control and Performance Pay

Employers have long used performance pay and managerial controls as ways to boost employee productivity while also trying to avoid shirking and other problematic behavior (moral hazard) of workers. **Reducing Moral Hazard in Employment Relationships: Experimental Evidence on Managerial Control and Performance Pay** (NBER Working Paper No. 19645), by **Kirabo Jackson** and **Henry Schneider**, reports the findings from a field experiment that compared managerial controls and performance pay at an auto repair firm. The authors find that carefully crafted and monitored managerial controls over mechanics led to a 20 percent increase in revenue. The results also suggest that a balanced combination of managerial controls and performance pay had the greatest effect in raising productivity and reducing moral hazard.

The authors explain that performance pay has often received attention from employers, public policymakers, and economists as a means of providing incentives to improve employee performance and behavior. Most Fortune 1000 companies use some form of performance pay to compensate employees and there are increasing calls to adopt performance pay at schools and hospitals. But previous studies have shown that performance pay alone does not always generate the hoped-for outcomes if firms don't effectively

observe and supervise workers. This study explores whether managerial controls and performance

“...carefully crafted and monitored managerial controls over mechanics led to a 20 percent increase in revenue.”

pay can complement each other in boosting productivity and reducing undesirable worker actions.

The authors worked with a U.S. auto repair chain to design a field experiment with 11 shops in one metropolitan area. The firm provided data on all customers, cars, repairs, and employee pay and hours, and other data covering the 2003–13 period. The authors and management then developed a comprehensive checklist of items on a car that mechanics were required to inspect to determine what repairs might be needed, even if a car was brought in for only an oil change or another simple procedure. Managers closely monitored mechanics to make sure the checklist inspections were handled properly, and the final checklists were routinely collected and maintained by the firm. Some of these same mechanics, many of whom were already compensated by a combination of base pay and commissions, also received commission increases, and the authors tested to see if that led to a higher invoice count and different behavior.

There was an increase in the amount of added repairs and revenue by mechanics under both regimes. The pre-repair checklist inspections led to a 20 percent

increase in revenue, a mean increase of \$42 per car visit, while a 1 percentage point boost in

commission pay for the mechanic led to a mean \$29 increase per visit. The managerial-control effect was equivalent to that of a 10 percent increase in the commission rate, suggesting that managerial controls are viable alternatives to performance pay in raising employee productivity and reducing moral hazard. The effect of adopting managerial controls was larger among mechanics who received higher commission rates than among those with lower rates, indicating that managerial controls and performance pay complement each other.

While managerial controls led to increased revenue attributable to more repairs conducted on cars and more work performed per week, mechanics who received boosts in their commission rates often increased revenue to the firm by substituting higher-revenue repairs for lower-revenue ones, without a corresponding increase in work hours or in the number of repairs conducted. The authors raise the possibility that this shift reflected mechanics exploiting their knowledge and informational advantage relative to customers and was not in the customers' best interest.

—Jay Fitzgerald

Is Voting Habit-Forming?

Economists and political scientists have observed that a citizen who votes today is more likely to vote in the future, but determining whether that is the result of unobserved individual attributes, or the effect of voting per se, is difficult. In **Estimating Habit Formation in Voting** (NBER Working Paper No. 19721), **Thomas Fujiwara, Kyle Meng, and Tom Vogl** conclude that voters are creatures of habit. They estimate that a 1 percentage point decrease in past voter turnout (measured as a share of eligible voters) lowers current turnout by 0.7 to 0.9 percentage points.

To investigate whether voting is habit-forming, the authors match daily weather data to U.S. county-level presidential election returns and population data for all elections between 1952 and 2012. They find that rain on the previous election day lowers current

voter turnout. Precipitation has no effect on turnout if it occurs two weeks before or after election day. When it rains on election day

“...rain on the previous election day lowers current voter turnout.”

the depressing effect on turnout is larger if it also rained on the previous election day. The findings can be illustrated by considering the effect of 1 inch of precipitation on election day — an outcome that is in the 98th percentile of the election day precipitation distribution. If the previous election day was free of precipitation, then 1 inch of precipitation on the current election day reduces turnout by 1.4 percentage points. If there was a similar amount of precipitation on the previous election day, then the reduction in current turnout averages 1.6 percentage points.

The effect of precipitation on turnout is roughly linear, with 1 millimeter of rain (0.039 inch) decreasing voter turnout by 0.07

percent. Although election day precipitation has roughly the same effect on voters from different parties, it depresses turnout more in less densely populated areas.

The authors conclude that their findings are best explained by the view that getting into the habit of voting depends more upon people's perceived rewards from the act of voting itself than on any benefit people expect to obtain from influencing election outcomes. Changes in voters' costs of voting and their beliefs that they might cast a deciding vote do not seem to explain the results.

— Linda Gorman

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:

James M. Poterba— President and Chief Executive Officer

Kathleen B. Cooper— Chairman

Martin B. Zimmerman— Vice Chairman

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 repro-

duced freely with appropriate attribution of source. Please provide the NBER's Public Information Department with copies of anything reproduced.

Individual copies of the NBER Working Papers summarized here (and others) are available free of charge to Corporate Associates and to the affiliates of other organizations, such as universities and colleges, with subscriptions. For all others, there is a charge of \$5.00 per downloaded paper or \$10.00 per hard copy paper. Outside of the United States, add \$10.00 per order for postage and handling. Advance payment is required on all orders. To order, call the Publications Department at (617) 868-3900 or visit www.nber.org/papers. Please have the Working Paper Number(s) ready.

Subscriptions to the full NBER Working Paper series include all 1000 or more papers issued each year. Subscriptions are free to Corporate Associates. For others within the United States,

the standard rate for a full subscription is \$8700; for academic libraries and faculty members, \$7000. Higher rates apply for foreign orders. The on-line standard rate for a full subscription is \$2100 and the on-line academic rate is \$975.

Partial Working Paper subscriptions, delineated by program, are also available. For further information, see our Web site, or please write: National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398.

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), or by sending email to subs@nber.org. Print copies of the Digest are only mailed to subscribers in the U.S. and Canada; those in other nations may request electronic subscriptions at www.nber.org/drsunsubscribe/.