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*IN THIS ISSUE*



# How School Administrators Cheat the Accountability Rules

Schools in dozens of states face accountability measures based on aggregate student performance on standardized tests. The consequences of poor performance in these accountability systems include giving parents increased choice of schools, either within the public sector or through vouchers for private schools; reconstitution of the school; or closure, in the event of persistent identified failure of a school to improve. Just as some students respond to high-stakes exams by cheating, some school administrators "game the system" when faced with serious consequences if it seems likely that their students will not perform adequately in special testing programs.

On January 8, 2002, President George W. Bush signed into law the reauthorization of the Elementary and Secondary Education Act, also known as the No Child Left Behind Act of 2001 (NCLB). The centerpiece of this legislation involves implementing a system of school accountability. States must design systems of school report cards based on the fraction of students demonstrating proficiency in reading and mathematics.

If students do not make adequate yearly progress, then schools and districts face consequences, including mandatory public school choice and the possibility of school restructuring. In addition, states risk the loss of federal administrative dollars as federal funds are redirected elsewhere. Another risk is that, if the schools are graded lower by the government, the district will become less attractive to potential and current residents and that will hurt prices in the housing market.

In **Accountability, Ability and Disability: Gaming the System** (NBER Working Paper No. 9307), Research Associate **David Figlio** and co-author **Lawrence Getzler** study the effect of the introduction of the Florida Comprehensive Assessment Test (FCAT) in 1996 in six large counties in Florida that are not identified in the paper. Examining highly detailed data from a panel of as many as 4.1 million students, the authors find that the schools did "game the system" by reshaping the test pool. Schools reclassified students as disabled, putting them into "special education" programs exempt from the state tests, and therefore ineligible to contribute to the school's aggregate test scores. Following introduction of the testing regime, schools reclassified low income and previously low performing students as disabled at significantly higher rates. Moreover, these behaviors were concentrated among the low-income schools most likely to be on the margin of failing the state's accountability system.

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Figlio and Getzler conclude that the introduction of the FCAT test is associated with an increase in the likelihood that a student will be classified as disabled by 5.6 percentage points. Altogether, 8.9 percent of the sample of students is identified as having a test-excludable disability. So the tests resulted in more than a 50 percent higher rate of disability classification in these six counties. Moreover, schools are more likely to switch low-performing students from a test-included category to a test-excluded disability following the introduction of the testing regime. Those schools with a higher rate of poverty, indicated by how many students are eligible for free lunches, tend to be more aggressive in reclassifying previously low-performing students as disabled, apparently hoping to avoid being classified as a failing school.

The reclassification of students as disabled "profoundly affects the student's individual educational experience," the authors note. It also reduces the accuracy in the grades or classifications given to schools based on the accountability exams, and thereby reduces the potential effectiveness of a public policy aimed at improving the educational system. Some students may end up in special education but would be better off in traditional classes. The trend also has an impact on total school costs, since special education on average costs 1.9 times as much per student as regular education.

Under the new federal NCLB Act, all students, including those with disabilities, will be included in the accountability testing system. Students must meet or exceed the state's proficient level of academic achievement by the end of the school year 2013-14, with intermediate goals along the way. Nonetheless, there will remain incentives to game the system, the authors state. For one thing, NCLB does permit giving those students with disabilities additional time to take the tests. Also, since schools will be required to have the same minimum percentage of students meeting proficiency, or at least to decrease the percentage of non-proficient students by 10 percent annually, they will continue to have an incentive to place relatively high-achieving students, say those with mild dyslexia, into the disability category to improve the probability of attaining adequate yearly progress.

— David R. Francis

# The Effect of Heavy Vehicles on Traffic Safety

In recent years Americans have been buying increasingly heavy vehicles, creating what NBER Research Associate **Michelle J. White** calls an "arms race" on America's roads. Between 1980 and 1998, sales of heavier vehicles, primarily light trucks, SUVs, and vans, more than tripled, from approximately 2 million to 7 million per year. As a proportion of all registered vehicles, their numbers increased from 21 percent to 37 percent.

In **The "Arms Race" on American Roads: The Effect of Heavy Vehicles on Traffic Safety and the Failure of Liability Rules** (NBER Working Paper No. 9302), White divides the cost of accidents into internal benefits versus external costs. She finds that while drivers view large vehicles as a way to better protect their occupants (internal benefits), in the event of an accident those same larger vehicles pose a greater danger to occupants of smaller vehicles and to pedestrians and bicyclists (external costs). When drivers replace cars with light trucks, 3700 additional crashes per year involving fatalities of smaller vehicle occupants, pedestrians, and bicyclists occur, while only 1400 crashes involving fatalities of light truck occupants are avoided. This produces a ratio of negative external effects to positive internal effects of 2.5 to 1.

White argues that none of the existing traffic laws or highway safety institutions force drivers of heavy vehicles to be held responsible for the negative external effects of their ownership. Tort liability, for example, could fall more heavily on owners of heavy than light vehicles. That would both cause drivers of heavy vehicles to use additional care to avoid accidents and discourage them from driving heavy vehicles in the first place. However, liability for automobile damage is generally based only on negligence, irrespective of vehicle weight class. In addition, many states use no-fault systems rather than negligence rules to determine liability. The current system does not penalize drivers of heavy vehicles at all for causing disproportionate deaths and damage.

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The flaw in the tort liability system is paralleled in liability insurance premiums. Drivers of heavier vehicles do not necessarily pay higher rates than drivers of light vehicles. A similar flaw is found in state traffic rules, which apply the same standard of driving behavior and apply the same penalties on all drivers, regardless of the potential of drivers of heavier vehicles to cause more serious damage and injury.

White describes reforms that would mitigate the negative effects of driving heavier vehicles, including lower speed limits and more stringent driving rules for heavier vehicles, requiring that all vehicle owners in all states buy liability insurance, raising the minimum required levels of liability insurance coverage, and replacing no-fault liability systems for motor vehicle accidents with fault-based systems.

— Les Picker

# Why Economic Downturns Have Favorable Effects on Mortality

In **Healthy Living in Hard Times** (NBER Working Paper No. 9468), author **Christopher Ruhm** examines how the "lifestyle behaviors" of smoking, weight gain, and exercise are affected by economic conditions. Smoking, the most preventable cause of disease in the United States, leads to roughly 430,000 premature deaths a year by increasing cancer, coronary heart disease, stroke, and respiratory illness. Obesity, the second leading cause of preventable death, is a major risk factor for hypertension, type-2 diabetes, coronary heart disease, stroke, gallbladder disease, and respiratory problems, causing an estimated 300,000 deaths a year. Regular exercise, however, is cited by the U.S. Department of Health and Human Services as a behavior that has a positive effect on overall health by lowering heart disease, diabetes, colon cancer, and osteoporosis. Exercise also increases muscle and bone mass, a key component for weight loss, and makes a person feel better overall.

Recent studies show that mortality decreases when the economy dampens, and Ruhm theorizes that lifestyle behaviors may account for the cyclical variations. In a 2000 study based on data from a 20-year period for all 50 states, he found that a 1 percent rise in unemployment reduced the total death rate by 0.5 percent. Three other studies have shown similar results: a fall in total fatalities during economic downturns for 50 Spanish provinces, 16 German states, and 23 OECD countries.

Ruhm tests his theory using data from the 1987-2000 Behavioral Risk Factor Surveillance System (BRFSS), an annual telephone survey administered by the Centers for Disease Control and Prevention. Almost 1.5 million people across the United States were interviewed over the 14-year period. The provided information on smoking, weight, and physical activity, as well as on demographic characteristics such as: age, sex, education, marital status, race, and ethnicity.

Ruhm classified people as current smokers if they smoked some days, or every day. A special category was reserved for individuals who smoked 40 or more cigarettes a day. Individuals were classified as overweight, obese, and severely obese if their body mass index (BMI) was at least 25, 30, or 35. People were termed regular exercisers if they participated in physical activity for at least 20 minutes three or more times a week. Physically inactive individuals were those who did not take part in any physical activity outside of their regular job. The data reveal startling lifestyle behavior statistics. Almost one-fourth of those surveyed smoke, with 2 percent of the population smoking 40 or more cigarettes a day. The majority of adults surveyed, 54 percent, are overweight with 5 percent of the survey population severely obese. A total of 42 percent of the population do exercise regularly, but 29 percent engage in no leisure physical activity.

Ruhm links economic conditions — as proxied by the average state unemployment rate over the three preceding months, from the Bureau of Labor Statistics' Local Area Unemployment Statistics (LAUS) database — to lifestyle and demographic data. He also controls for seasonal variation, such as a decline in physical activity when the weather gets cold. Ruhm finds that during temporary downturns, smoking and weight decline, while exercise rises. Specifically, the drop in tobacco use is stronger for heavy smokers, the fall in body weight is larger in the severely obese, and exercise increases most among those who were completely inactive. A 1-point rise in unemployment reduces the estimated prevalence of smoking, severe obesity, physical inactivity, and multiple health risks by 0.6, 1.4, 1.5, and 1.8 percentage points, respectively. The 1-point increase in unemployment is predicted to decrease severe obesity among males, blacks, and Hispanics by 2.0, 3.1, and 4.3 percent, compared to 1 percent for both whites and females. But the pattern is reversed for cigarette smoking, showing a 1 percent increase in unemployment decreasing smoking among females by 0.8 percent, while males and blacks drop just 0.3 percent, suggesting that other mechanisms may account for the effects on smoking.

Ruhm tests two possible scenarios, free time and falling incomes, as reasons why individuals might adopt healthier lifestyles when the economy weakens. His data predict that working one fewer hour per week causes a slight (.011 percentage point) reduction in smoking but larger declines in severe obesity, physical activity, and multiple health risks (of .17, .31, and .044 points, respectfully). The author interprets these results as evidence that greater availability of non-work time may provide one reason for the healthier behaviors. According to the author, stronger effects for body weight and exercise than for smoking are reasonable, since longer work hours make it more difficult for people to participate in activities such as exercising and preparing home cooked meals, but cigarette smoking may reflect changes in job stress or in complementary behaviors such as drinking.

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Finally, Ruhm notes that the results raise interesting questions about the poorly understood interactions between lifestyle behaviors. It makes sense, for example, that exercise increases when the economy declines because people have more free time; this effect might be reinforced if people are not working as hard on the job and thus are not so physically and mentally exhausted when they leave the office. Other indirect effects, such as changes in sleep, that accompany fluctuating work hours and affect health also could be a factor.

— Marie Bussing-Burks

## Wage Compression Limits Quality of Public Sector Workers

The financial rewards offered by the public sector may be inadequate to attract and retain highly skilled and highly motivated workers, according to a recent study by NBER Research Associate **George Borjas**. This is not because the level of average wages lags the private sector, a common benchmark used for measuring the economic incentive to take public and private sector jobs. In **The Wage Structure and the Sorting of Workers into the Public Sector** (NBER Working Paper No. 9313), Borjas focuses on wage dispersion within the public and private sectors and shows that the relative compression of public sector wage schedules over the past 20 years is an important determinant of its ability to attract high-skill workers.

While the wage structure has been stable in the public sector, higher wage inequality in the private sector has increased the potential rewards for high-skill workers. The fact that wages for the different skill groups changed at very different rates in the public and private sectors during the 1980s and 1990s implies that the economic incentives that induce people to enter or leave a sector also changed over the period. Using data from the U.S. Census and the Current Population Survey, Borjas shows that the relative skills of the "marginal" people who moved across sectors responded to the changes in relative wage dispersion. In particular, it became increasingly difficult to attract and retain high-skill workers in public sector jobs.

In 1960, the public sector employed about 16 percent of the U.S. workforce. This rose to a peak of 20 percent in the 1970s, and by 2000 had fallen back to 16 percent. Much of this decline can be explained by falling employment in the local government sector.

Women are more likely to be employed in the private sector than men, but the trends are the same. The share of workers in the public sector peaked at 17 percent for men and 22 percent for women in the mid-1970s. By 2000, 14 percent of men and 19 percent of women were public sector employees. In general the gap between private and public sector wages for a typical male employee was stable over the period, while it declined substantially for women.

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Borjas shows that the wage distribution in the public sector has been relatively stable over the past 20 years, while wage dispersion in the private sector has increased. Looking at the ratio of the standard deviation of log weekly wages between the public and private sector, he shows that this ratio was 0.9 in 1971 and declined to .75 by the late 1990s. The debate about the causes of the rise in private sector wage dispersion centers around the role of skill-biased technical change, the increased globalization of the economy, immigration, and declining union membership

Borjas shows that the wage differential between people who had just quit the public sector and workers who were about to enter that sector is strongly and negatively correlated with the relative dispersion of incomes in the public sector. As the wage structure in the public sector became relatively more compressed, the public sector found it harder to hire and to hang onto high-skill workers. Studies of wages in the public and private sectors tend to focus on the earnings gap of the average worker between the two sectors. But, the substantial widening of wage inequality in the private sector and the relatively more stable wage distribution in the public implied that high-skill workers became increasingly more likely to end up in the private sector.

Studies that focus solely on the earnings gap between the typical worker in the public sector and its statistical counterpart in the private sector, Borjas concludes, provide only a partial picture. Relative wage dispersion — the shape of the wage structure — is an important factor in determining the public sector's ability to attract and retain high-skill workers. This analysis suggests that future policy discussions of public sector wages should pay more attention to the relative dispersion of income opportunities offered to government workers.

— Andrew Balls

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