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School Choice Improves Student Achievement

In **School Choice and School Productivity (Or, Could School Choice be a Tide That Lifts All Boats?)**, NBER Working Paper No. 8873, author **Caroline Hoxby** calculates that average school productivity — that is, student achievement per dollar spent — was about 65 percent higher in 1970-1 than in 1998-9. If U.S. schools were only able to return to their 1970-1 level of productivity, the average U.S. student would be "scoring at an advanced level where fewer than ten percent of students now score," she writes. The dramatic decline in the productivity of American schools frustrates school reforms and imperils the traditional source of U.S. comparative advantage: skilled labor that supports advanced industries.

In this paper, Hoxby asks why school productivity is so low and whether increased school choice (the ability to choose between public schools within an area, or between public and private schools) might raise it. The question is an important one because many debates on school choice focus on students who might be "winners" and "losers." But, if school choice raises the productivity of schools, it will "lift all boats": that is, improve schools for all students. Recent productivity losses of American schools are so large that regaining a mere fraction (as little as a quarter) of recently lost productivity would "lift all boats."

Using scores from the National Assessment of Educational Progress (NAEP) as the measure of output (achievement) and real per-pupil spending on elementary and secondary education as the input, she examines the school productivity collapse. Hoxby considers whether changing family backgrounds can explain the collapse in schools' productivity. She finds that they cannot: while minority students now constitute a larger fraction of the U.S. student population and they tend to score worse on the NAEP, this phenomenon is overwhelmed by the fact that current students have parents who are better educated and have higher family incomes.

She also considers whether schools have faced rising costs because wages for females in professional jobs that are alternatives to teaching have been rising. She finds that, even if schools had had to give teachers the same wage increases as the most elite female professionals (medical doctors, lawyers) in order to keep teaching quality constant, the decline in school productivity would still be about 55 percent since 1970-1. In other words, Hoxby concludes, "School conduct, and not student characteristics or female career opportunities, is the main source of the decline in school productivity."

Hoxby examines the effect of choice on school productivity by looking at three recent reforms that have introduced choice into areas that previously had little: vouchers in Milwaukee, charter schools in Michigan, and charter schools in Arizona. She looks at the productivity of public schools that faced increased competition as a result of these reforms, not just at the productivity of the voucher or charter schools themselves. For instance, she compares the productivity of Milwaukee's public schools before and after the voucher program provided competition. As a control group for these schools, she uses urban public schools in Wisconsin that are located outside Milwaukee (and are thus immune from voucher competition) but that serve students similar to those of Milwaukee. She finds that Milwaukee's public schools raised their productivity quickly and dramatically in response to competition and that the Milwaukee schools that faced the most competition raised their productivity the most. Productivity rose because the schools achieved more while spending the same amount (as opposed to holding achievement steady while reducing spending). In fact, in the Milwaukee schools facing substantial competition, achievement rose by as much as 4.7 national percentile points faster per year than in control schools. Such gains are virtually unprecedented for an American school reform.

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For Michigan and Arizona, Hoxby finds that even a very modest amount of charter school competition (the possibility of losing 6 percent of their students) makes public schools raise their productivity by a statistically significant amount. Greater charter school competition raises productivity even more. As with Milwaukee's voucher competition, the charter school competition impels productivity to rise through achievement gains at a steady level of spending.

Hoxby also reviews evidence on the effects of competition among traditional public school districts, noting that metropolitan areas with maximum school choice between school districts have "eighth grade reading scores that are 3.8 percentile points higher, tenth grade math scores that are 3.1 national percentile points higher, and twelfth grade reading scores that are 5.8 national percentile points higher." The productivity gains are more impressive than these achievement scores indicate because per pupil spending is also 7.6 percent lower in such metropolitan areas.

Finally, Hoxby reviews evidence that indicates that private school competition raises public school productivity through achievement gains (at a steady level of per-pupil spending). For instance: "A public school in a metropolitan area with moderately high [relative level of] private school choice has eighth grade reading scores that are 2.7 national percentile points higher, eighth grade math scores that are 2.5 national percentile points higher, twelfth grade reading scores that are 3.4 national percentile points higher, and twelfth grade math scores that are 3.7 national percentile points higher."

Hoxby concludes with some simple calculations that demonstrate that the productivity gains from school choice could easily swamp any other effects of choice. For instance, let's say that a Milwaukee student started with the best available peers in that city and (as a result of choice) ended up with the worst available peers. Let's also say that peers had an extraordinarily strong effect so that the student's achievement fell one-for-one with that of his peer group, as it deteriorated. Even in this extraordinarily pessimistic scenario, the effect of choice on Milwaukee productivity is so great that the student would be better off after only four years under the voucher reform.

— Linda Gorman

Global Links Raise Asian Countries' Productivity

In East Asia, particularly among the least-developed countries, companies that compete in export markets and firms with foreign ownership exhibit much higher levels of productivity than other enterprises, an indication of the benefits that can accrue to relatively poor countries as they integrate into global markets. This is the central finding of new research by **Mary Hallward-Driemeier**, **Giuseppe Iarossi**, and **Kenneth Sokoloff**, who consider the effects of greater openness on East Asian economies in **Exports and Manufacturing Productivity in East Asia: A Comparative Analysis of Firm-Level Data** (NBER Working Paper No. 8894).

Their analysis of detailed data from some 2700 manufacturing enterprises in five East Asian countries (Indonesia, Korea, Malaysia, the Philippines, and Thailand) reveals "substantial advantages in productivity associated with firms that are, in various senses, more 'open' to the rest of the world." Specifically, this includes companies with significant foreign ownership, outside auditors, and "those that choose to focus on the export market."

For example, the study finds that in four of the five countries (the data for Malaysia were inconclusive) "firms in which foreigners have a substantial ownership share have markedly higher productivity than those that are domestically owned." The authors note that their conclusion supports a long-standing hypothesis that foreign ownership often brings with it "a greater ability or incentive" to implement new management or technological changes that improve productivity.

Hallward-Driemeier, Iarossi, and Sokoloff are particularly interested in whether the decision to participate in export markets prompts gains in productivity. Other studies have contended that it's not the export opportunity that drives companies to improve productivity. Rather, they have argued that the connection one notices between productivity and exports is merely a by-product of the fact that more efficient companies fare better in global markets.

But Hallward-Driemeier, Iarossi, and Sokoloff uncover a much stronger link in which the lure of valuable export opportunities becomes the key motivation to become more productive. Utilizing information on what firms were doing during their first year of operations, they find "firms that explicitly target export markets consistently make different decisions regarding investment, training, technology, and selection of inputs and thus raise their productivity."

The authors discover that the enhanced productivity associated with these factors is particularly striking in the least-developed economies, such as Indonesia and the Philippines, countries that only recently have begun to develop a broad industrial base capable of competing in export markets. They note that in these countries the productivity gains made by export-focused enterprises stand-out because markets segmented by conditions such as differentiated products and high internal transportation costs have allowed companies that make less productive use of very similar inputs to continue in operation. "When local or regional markets are not well integrated, a circumstance typical of less-developed countries, inefficient firms can survive because they are insulated from competition with more efficient enterprises," the authors state. They observe that the magnitude of the productivity advantage of firms that were established as

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exporters over those that focused on domestic markets was inversely related to the level of development: highest in Indonesia and the Philippines, next highest in Thailand, small but significant in Malaysia, and virtually nil in much more developed South Korea (where domestic markets are "quite integrated" with global markets).

The study concludes that, for policymakers, be they in the United States or East Asia, "the message would be that it is the least developed economies that have the most to gain from measures that would broaden the markets they face." The authors believe their conclusions "provide support for the notion" that expanding export opportunities for less-developed countries, such as through reductions in the trade barriers they face, "would lead more entrepreneurs to focus on the export market, and thus to increases in overall manufacturing productivity."

— Matthew Davis

Alcohol and Drug Use Linked to Suicidal Behavior

Each year more American young people die from suicide than from all other leading natural causes of death combined. In 1997, a sobering 13 percent of deaths among 15 to 24 year olds were the result of suicide. Survey data suggest that between 12 and 25 percent of school age youth consider suicide or make plans to commit suicide. Furthermore, the rate of youth suicide is on an upward path, tripling between 1950 and 1990.

Previous research documents a strong link between drug and alcohol abuse and suicidal behavior. But according to **Sara Markowitz**, **Pinka Chatterji**, **Robert Kaestner**, and **Dhaval Dave** writing in **Substance Use and Suicidal Behaviors Among Young Adults** (NBER Working Paper No. 8810), that research does not establish that substance abuse has a causal role in youth's suicide thoughts or actions. Substance abuse can cause social isolation, low self esteem, loss of work or school, estrangement from family and friends — all events that can build a core of stresses that may lead to suicidal tendencies. Substance abuse also can increase impulsiveness and decrease inhibitions, making one more likely to act on suicidal tendencies. But the earlier studies did not adequately explore the effects of other major influences on suicidal behavior, namely depression and other psychiatric problems, nor the idea that suicidal tendencies actually may spur the drinking and drug abuse.

In this paper, the authors conjecture that if substance use causes suicidal behavior, then policies designed to reduce the consumption of alcohol and illegal drugs may succeed in reducing suicidal behaviors. The researchers attempt to uncover the role of alcohol and drug consumption in determining suicidal thoughts and attempts among college age students. Data for their study come from the University of Southern Illinois's Core Institute, which conducts annual surveys of college students, focusing on drinking and drug use. The survey covered approximately 30,000 students in 1991 at both private and public colleges across the United States. The analysis was limited to respondents between the ages of 17 and 24.

"Suicidal behavior among college students is lower where the price of beer is higher."

Students were asked how often in the past year they "seriously thought about suicide" or "seriously tried to commit suicide" because of alcohol or drug use. Students were also asked about the number of drinks they consumed in a week, if they were binge drinkers (categorized as five or more drinks in a sitting in the past two weeks), and if they used marijuana or any illegal drugs in the past year. Extensive socioeconomic and demographic information was gathered: gender, age, college class year, grade point average, race, marital status, employment status, campus living arrangement, and parental history of alcohol and drug problems. The Core survey did not measure psychiatric disorders, the most important link between substance abuse and suicidal tendencies. However, the study includes information about students' smoking, which has been shown to be a correlate of psychiatric disorders and other substance use.

The results show that students who drink or use drugs are much more likely to have suicidal tendencies than those who do not use substances. For example, 8.15 percent of binge drinkers have thought about committing suicide and 2.34 percent report attempting suicide. Similar comparisons hold for students who drink at all, who use marijuana, and who use other illegal drugs. Only 2.34 percent of non-drinkers have thought about committing suicide with only .78 percent attempting suicide. Markowitz and her co-authors contend, "It is important to note that these results establish a correlation between substance use and suicidal behaviors, but do not address the issue of causality."

The authors also estimate a model that relies on factors that are believed to be correlated with substance use but not suicidal behaviors (such as the price of beer and living arrangements) to test the nature of this association. The results are consistent with a causal relationship from alcohol and illicit drug consumption to suicidal behaviors. Many of the student characteristics are also important determinants of suicidal behaviors. Being older and having a higher grade point average both reduce the probability of suicidal thoughts and attempts, while being female increases these probabilities. Part-time students are more likely to engage in suicidal thoughts and attempts. Being married lowers the probability of suicidal thoughts, while being divorced increases both thoughts and attempts.

Using a similar model that centers on the beer price, the authors find that suicidal behavior among college students is lower where the price of beer is higher. Furthermore, students living on campus are found to be more likely to engage in suicidal behaviors because of their higher drug and alcohol use than those living off campus.

In conclusion, the authors suggest that alcohol and drug use increases the likelihood of suicidal thoughts and attempts. Therefore, policies designed to prevent substance abuse may also prevent suicidal behaviors among college students. According to the authors, "This research is a first step towards expanding policymakers' ability to prevent suicidal behaviors, and their tragic consequences, among college students."

— Marie Bussing-Burks

The Disturbing "Rise" of Global Income Inequity

It is widely assumed that the rate of income inequality and poverty in the world is increasing dramatically, in large part because of globalization. For example, the 1999 issue of the United Nation's Human Development Report states that the income of the richest 20 percent of the world's population was 30 times that of the poorest 20 percent in 1960 and 74 times that of the poorest group in 1977.

Writing in **The Disturbing "Rise" of Global Income Inequality** (NBER Working Paper No. 8904), however, economist **Xavier Sala-i-Martin** finds no evidence of a dramatic or disturbing rise in income inequality during the globalization period. On the contrary, he finds that income disparities during the last two decades have declined substantially. The world as a whole is becoming richer and the large group of people close to the poverty line has been shrinking since 1970, giving rise to a large middle class. The $1/day poverty rate has fallen from 20 percent of the world's population to 5 percent over the last 25 years and the $2/day poverty rate has fallen from 44 percent of the world's population to 18 percent. There were between 300 and 500 million fewer poor people in 1998 than there were in the 1970s.

> "The $1/day poverty rate has fallen from 20 percent of the world's population to 5 percent over the last 25 years and the $2/day poverty rate has fallen from 44 percent of the world's population to 18 percent."

The author uses aggregate GDP data and within-country income shares to assign a level of income to each person and to determine within-country and across-country income disparities (differences). Within-country income disparities have increased slightly since 1970, but not nearly enough to offset the substantial reduction in across-country disparities. Sala-i-Martin finds that across-country reductions in income inequality can largely, but not entirely, be explained by the significant growth rate in incomes of China's citizens. With 1.2 billion people, collectively accounting for one-sixth of the world's population, their increased incomes raise the world's income bringing it closer to the levels of the rich, and thus narrowing across-country income disparities.

Sala-i-Martin predicts that if Africa remains economically stagnant and all other countries, including China and India, keep growing at rates similar to the ones they experienced during the last two decades, then world income inequalities will resume their long-term upward trend some time during the next 20 years.

— Les Picker

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