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## On the Payoff to Attending an Elite College

In today's high-tech economy, just about everybody has gotten the message that it pays to get a college degree. What is less clear to many parents and their college-bound youngsters is whether it makes economic sense to attend an elite school with a total four-year price tag big enough to buy a nice suburban house in many parts of the country. Does the earnings return from a diploma stamped on it justify the higher expense, or is the reputation of the college aristocracy vastly overblown, at least when it comes to subsequent income? It's a question that more and more economists are researching, while many parents and policymakers would like to know the answer.

Yet researchers have long found it difficult to tease out the labor market effects of college quality versus other characteristics that employers reward. The problem is that students who attend selective schools are likely to have higher earnings potential regardless of where they attend college for the very same reasons that they were admitted to the more selective schools in the first place. In a recent NBER Working Paper, **Stacy Berg Dale** and **Alan Krueger** try two novel approaches to solving this

problem. In **Estimating the Payoff to Attending a More Selective College: An Application of Selection on Observable and Unobservables** (NBER Working Paper No. 7322), they use data from the College and Beyond Survey to match 6,335 students who were accepted and rejected by a comparable set of colleges in 1976. They then compare labor market outcomes in 1995 among

but attended less selective colleges," the researchers write. They also find that the average SAT score of the schools students applied to but did not attend is a much stronger predictor of students' subsequent income than the average SAT score of the school students actually attended. They call this finding the "Spielberg Model" because the famed movie producer applied to USC and UCLA

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students who had the same menu of choices, but among whom some attended more selective schools than others. They also use this data set and the National Longitudinal Survey of the High School Class of 1972 to estimate the impact on students' subsequent earnings of the average SAT scores of all the schools they applied to as well as the average SAT score of the school they attended.

They find that school selectivity, measured by the average SAT score of the students at a school, doesn't pay off in a higher income over time. "Students who attended more selective colleges do not earn more than other students who were accepted and rejected by comparable schools

film schools only to be rejected, and attended Cal State Long Beach. Evidently, students' motivation, ambition, and desire to learn have a much stronger effect on their subsequent success than the average academic ability of their classmates.

Still, they do find that some aspects of colleges are related to students' subsequent economic success, even after adjusting for the abilities of the students upon applying to college. For example, students who attend colleges with higher average tuition costs or spending per student tend to earn higher incomes later on. The internal real rate of return on college tuition for students who went to college in the late 1970s was a startlingly

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high 16 to 18 percent. But with college costs up sharply since then, returns have probably come down to a more normal range. The authors speculate that tuition may affect future earnings because schools with higher tuitions offer more resources or higher quality products to their students.

Finally, the results of this study suggest that no matter what measurement of college quality is used, the income gains from attending an elite college are highest for students from a disadvantaged background. "School admission and financial aid policies that have as a goal attracting students from more disadvantaged family

backgrounds may raise national income, as these students appear to benefit most from attending a more elite college," they say. Their results are bound to play a role in the national debate over financial aid and affirmative action policies at the nation's premier schools.

—Christopher Farrell

## The Market for Catastrophe Risk

**D**uring the era of frequent city-wide fires, many fire insurance companies failed when all of their insured houses went up in smoke at the same time. Although today's catastrophic losses are more likely to result from a category 5 hurricane along the Florida coast, the risk of failure from the simultaneous loss of an entire class of insured objects continues to bedevil modern insurance companies.

Insurance companies buy reinsurance to protect themselves from catastrophic losses. In exchange for a set premium, a company offering reinsurance might promise to pay for 90

percent of losses within the next year that exceed \$450 million and are less than \$600 million. native to traditional reinsurance programs. After examining the structure of USAA's reinsurance program, Froot concludes that, contrary to theoretical predictions, USAA's reinsurance program protects it from smaller losses and leaves it relatively uncovered in the event of the largest ones. Also flying in the face of theory is the fact that USAA paid premiums that were, according to the author's calculations, "9.1 times the actuarially fair premium."

This raises two questions. The first is whether the USAA reinsurance profile matches that of the market as a whole. Froot's analysis of reinsurance transaction data from the largest U.S. catastrophic risk reinsurer for 1970 to

to supply it greater market power, perhaps enabling them to command higher than expected premiums.

Government intervention in insurance markets is another potential source of market imperfection. Insurance commissioners are elected officials in 12 states, and to the extent that states use regulatory barriers to keep insurance costs down, "insurers must underwrite the catastrophic component of risk at prices that are well below" profitability. Insurance companies make ends meet by not insuring against catastrophic risk, with the result that policyholders and taxpayers (through state guarantee funds) self-insure whether they know it or not. Government also distorts the market with post-disaster aid that eliminates the incentive to buy insurance in the first place.

Transactions costs, moral hazard, and adverse selection also inhibit the reinsurance market's ability to spread risk. In fact, rather than act solely as a mechanism for shifting risk, it may function as a form of prepaid financing. "Often an explicit reinsurance contract contains an implicit agreement that reinsurers will charge more in the aftermath of a claim and that the cedent will continue to buy reinsurance from the same underwriter."

In an era that securitizes everything from home mortgages to high risk credit card payments, Froot concludes, evidence from the reinsurance market shows that "securitization is not automatically the lowest-cost way to transfer risk" although using bonds to underwrite catastrophic reinsurance may "lower, but not eliminate" the costs imposed by market imperfections and the barriers that keep capital out of the reinsurance market.

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percent of any losses within the next year that exceed \$450 million and are less than \$600 million.

In **The Market for Catastrophe Risk: A Clinical Examination** (NBER Working Paper No.7286), author **Kenneth Froot** examines the theory that risk adverse firms would be more likely to insure against large losses and that the premiums for such insurance would be close to the value of the expected loss from catastrophes. He considers USAA, one of the 10 largest automobile and home insurers in the United States. It has large numbers of policyholders in California and Florida. After hurricane Andrew created the largest catastrophic loss in the United States in 30 years, USAA began developing a bond based alter-

1998 suggests both that other companies also self-insure against the largest catastrophic losses and that they pay higher prices than one would expect in order to insure themselves against the smaller ones.

The second question is whether reinsurance market imperfections might explain the differences between theory and observed insurer behavior. Froot considers three broad possibilities. The first is the possibility that reinsurance markets suffer from a shortage of capital, particularly after a catastrophic event occurs. He finds support for this in the higher premiums charged insurance companies with greater exposure to hurricane losses after hurricane Andrew. Scarce capital would also give reinsurance firms able

Still, the fact that “managers of insurance companies purchase reinsurance

at far above the fair price” shows that they must believe that “risk manage-

ment adds value.”

—Linda Gorman

## Reducing Accidents is Key to Lower Child Mortality

Over the past three decades, child mortality has declined sharply in the United States. For children between the ages of one and four, the rate of death dropped 57 percent between 1960 and 1990. The death rate for children aged five to 14 fell 48 percent during that period. One reason for the decline is revolutionary developments in medicine. But a growing share of the accelerating reduction in child mortality since 1970 stems neither from medical advances nor from immunization campaigns, notes NBER researcher **Sherry Glied**. Rather, it arises from a sharp drop in deaths from unintentional injury or accident. Among children under five, deaths from these causes dropped from 44 per 100,000 children in 1960 to 18.6 per 100,000 in 1990. Among children five to nine, the mortality rate from injury or accidents fell from 19.6 to 9.8 per 100,000.

Many different factors contributed to this decline in accidental injury, Glied explains. “The late 1960s and early 1970s were the heyday of the U.S. consumer protection movement,” she notes. Washington’s Consumer Product Safety Commission produced a range of mandatory and voluntary standards to increase the safety of products that children might contact. All states passed legislation between 1977 and 1984 requiring children to be in a child safety seat when in a car. In some areas, homeowners were required to fence in swimming pools to avoid drowning deaths. Building laws required smoke detectors. In the mid-1960s, a New York City Department of Health study found that on average 30 to 50 children under five were dying per year, mostly in Manhattan and the Bronx, when they fell out of apartment building windows; a campaign followed to encourage and eventually require land-

lords to install window guards, and the annual number of such deaths fell to four by 1980.

Some improvements may have followed fear of litigation, as tort lawyers swung into action alleging that defective products led to injury. Others are a consequence of medical advances, as the availability and quality of trauma care for children in hospital emergency rooms improved.

Many improvements are a consequence of a change in family behavior. Older children are less likely to walk to school than was the case 20 years ago, perhaps helping reduce pedestrian accidents. Manufacturers developed a host of child-proofing products as different causes of injury became better known.

What ties these changes together is the increased availability of information on how to protect children, en-

plain “relatively little” of the significant decline in child mortality. She reckons that improvements in the information on child safety given parents (some derived from regulations) are “a more probable cause” of the decline. When publicly-funded epidemiologists and statisticians identify frequent causes of injury and that information becomes widely available, parents rapidly make use of their new knowledge to assure the safety of their children. Those measures offset the fact that more mothers are working and fewer are married in the 1990s, and thus have less time to watch their children personally, than in the 1960s. Parents’ time has become a less important factor in producing health, Glied writes.

Glied puts a value on the economic savings to society of this plunge in death rates. She estimates the number

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“Between 1960 and 1990 the death rate for children aged five to 14 fell 48 percent...a growing share of the accelerating reduction in child mortality arises from a sharp drop in deaths from unintentional injury or accident.”

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abling parents to look after their children’s safety more effectively. All parents can now read mandatory safety labels on products and must take other steps required by regulations. In addition, parents, especially those who are well-educated, have more information today to help them best use their time and money to protect their children. For example, the amount of safety information in Dr. Benjamin Spock’s popular manual of baby and child care increased from three pages to 13 pages between 1957 and 1992. This advantage of education may have contributed to growing inequality between the mortality rate for children of more-educated parents and that for children of less-educated parents.

Examining all these factors, Glied concludes that governmental regulations, though not unimportant, ex-

of lives saved and then uses a conservative estimate that a single child’s life is worth \$100,000 per life year, or about \$3 million in total present value. (Lawyers use similar calculations in lawsuits involving the death of children.) Glied then calculates that the total value of savings to society from the lower accidental death rate for the under-five group of children amounts to between \$8 billion and \$16 billion each year. That is \$430 to \$870 per living child per year. In an economic sense only, that represents the value for parents of the new measures they are taking to ensure the safety of their children. For the older group of children, the total savings amount to between \$7 billion and \$9 billion each year, or \$280 to \$360 per living child per year.

—David R. Francis

## Impacts of the Indonesian Economic Crisis: Price Changes and the Poor

In January 1998, Indonesia was rocked by a major financial crisis. Between December 1996 and January 1998, the Rupiah plummeted from 2400 to the dollar to 16,000 to the dollar. The price index for food rose as much in January 1998 as it had for the six prior months combined. As a

the very poor appear to be the most vulnerable to price increases. This runs counter to some arguments which suggest that the very poor are so destitute that they are in effect insulated from international economic shocks. Among the very poor in Indonesia, the urban poor fared worst. Rural poor were able to buffer the price increases with household

lated household specific cost-of-living increases. These household specific cost-of-living indexes were then correlated with whether the household was rural or urban, where the household lived, household size, and income. Among the stronger findings are that the urban households were affected more adversely than the rural ones and that the increase in the cost of living was smaller the richer a household was. The authors urge using their findings with restraint, though, since other crises—such as huge forest fires and a persistent drought—affected the Indonesian economy at the same time and may have independently resulted in price increases. Nonetheless, the authors paint a picture in which the very poor, and especially the urban poor, in Indonesia faced disproportionately large price increases for the baskets of products consumed.

“Urban households were affected more adversely than the rural ones and the increase in the cost of living was smaller the richer a household was.”

result of this financial crisis, prices for a wide range of goods increased dramatically. In **Impacts of the Indonesian Economic Crisis: Price Changes and the Poor** (NBER Working Paper No. 7194), authors **James Levinsohn, Jed Friedman, and Steven Berry** ask whether those price increases disproportionately affected poor households.

In this case, the authors find that

agricultural production. The authors stress the differences among price increases; price changes for narrowly defined products varied tremendously depending on where in Indonesia a household lived.

For their analysis, the authors matched Indonesian data on price changes with data on household consumption from a nationally representative source. From that, they calcu-

—Lester A. Picker

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