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IN THIS ISSUE

How People Choose Their College Helps to Explain Increasing Income Inequality Among College-Educated Workers

In the last three decades, the incomes and wages of college-educated Americans have become more dispersed. In fact, inequality in their incomes has risen faster than income inequality among Americans overall. In **Explaining Rising Income and Wage Inequality Among the College-Educated** (NBER Working Paper No. 6873), **Caroline Hoxby** and **Bridget Terry** break down the increase in income inequality among college-educated people into three components, two of which are conventional and one of which is new, and ask how much each factor has contributed.

The first component is the increasing diversity of college-goers' socioeconomic backgrounds. Compared to the past, today's college students are diverse in terms of their race, ethnicity, nativity (whether they are immigrants), and parents' income. The second component is a rise in the return to aptitude, where aptitude includes both innate ability and academic achievement. The return to aptitude is not observed, but especially high increases in income among workers with high measured aptitude leads researchers like Hoxby and Terry to conclude that the return has risen. The third component, unique to Hoxby and Terry's work, is the change in the market structure of college education. Instead of choosing a nearby college or a relative's college (popular methods of choosing a college in the past), today's students choose colleges based on the match between their own aptitude and the colleges' educational resources and student bodies. High aptitude students are now more likely to end up surrounded by fellow high aptitude students and are more likely to be matched to demanding, costly educational programs. In short, aptitude differentials are falling within each college and are rising between colleges.

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Hoxby and Terry suggest that increased "student sorting" of this type has occurred because information costs and mobility costs have decreased. (Hoxby discusses this in NBER Working Paper No. 6323.) It is easier than before to get information about colleges' student bodies, the

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programs they offer, and sources of financial aid. Students can travel to a distant college at a lower cost, communicate with a distant home and friends for less money, and enjoy the same media and culture wherever they are.

Adding up the three factors, Hoxby and Terry estimate that about 15 percent of the growth in income and wage inequality among recipients of baccalaureate degrees is attributable to the increased diversity of their backgrounds. About 25 percent is explained by a rise in the return to aptitude and another 30 percent by changes in the market for higher education which have intensified student sorting. They note that previous researchers have exaggerated the importance of an increase in the return to aptitude because they did not take account of the changes in the market for higher education. The remaining 30 percent of the increase in inequality is hard to explain with the observed factors, though.

—David R. Francis

Proposed Social Security Reforms Have Little Effect on Income Distribution

Higher earners, on average, live longer than poor people. Thus, Social Security in its present form is not as progressive as is commonly thought: the benefits formula is progressive, but because higher earners live longer, they collect more benefits. Relatedly, the reforms to shore up Social Security's finances by cutting benefits and raising taxes—considered by the 1994–6 Advisory Council on Social Security—are not as "regressive" as they may at first appear. Indeed, according to an NBER Working Paper by **Julia Coronado, Don Fullerton,** and **Thomas Glass,** eliminating the provision for dropping certain low earning years from the Social Security benefit calculation, increasing the retirement age, decreasing benefits directly, and raising the payroll tax actually have very little effect on income redistribution within the U.S. pension system.

"Income-differentiated mortality reduces the progressivity in the Social Security system by more than half."

In **Distributional Impacts of Proposed Changes to the Social Security System** (NBER Working Paper No. 6989), the authors first identify high and low income groups in a sample of 1082 household heads and 696 secondary earners. Then, using data from 1968–89, they estimate lifetime incomes for these individuals, group them into income quintiles, and simulate their earnings histories.

The researchers then calculate that under the current system, those in the bottom quintile pay lifetime taxes of $64,700 and can expect to receive lifetime benefits of $125,700. Those in the top quintile pay taxes of $141,400 and receive benefits of $187,000. Using a benchmark discount rate of 2 percent, the authors find that at age 22, those in the bottom 20 percent face a net loss of $1,300, equal to 0.17 percent of the discounted lifetime endowment. The top quintile faces a present value loss of $30,100, which represents 1.33 percent of the present value of lifetime income (a difference between the two groups of 1.16 percent).

However, low income individuals have higher than average mortality rates, and so collect fewer years of benefits. For example, the poorest 20 percent of non-white females in the sample have a mortality rate which is 186 percent of the average for that group. Those in the top 20 percent of the income scale have a mortality rate that is equal to 44 percent of the average for that group.

Taking account of income-differentiated mortality, the authors show that the tax rate is 0.6 percent for the lowest quintile and 1.01 percent for those in the top quintile. This is a difference of only 0.41 percent (compared to the 1.16 percent estimated by ignoring mortality effects). The researchers conclude that income-differentiated mortality reduces the progressivity in the Social Security system by more than half. If the discount rate is increased to 4 percent, so that regressive payroll taxes are more important relative to progressive benefits, then the lifetime tax rate inherent in the Social Security system is regressive and close to 3 percent for all income groups.

The authors then assess four proposed Social Security reforms. Eliminating the drop-year provision reverses a measure designed to increase benefits for individuals with high lifetime variability of income. The researchers show that this measure reduces benefits in all income groups. Without income-differentiated mortality, the decline in net benefits is fairly flat across all groups, so this is a regressive measure. Introducing income-differentiated mortality means the impact is slightly less regressive.

Increasing the retirement age (already enacted legislation will increase the retirement age from 65 to 67 by 2020) is also regressive because individuals continue to pay the regressive tax for longer and receive the progressive benefit for a shorter

period. Again, income-related mortality reduces the regressive nature of the reform because the present value loss in net benefits is greater for high income groups.

Decreasing the overall benefit level is regressive, because a cut will represent a bigger share of lifetime income for lower income groups. Again, introducing income-differentiated mortality makes it less regressive, because richer people live longer.

However, in the case of increasing the payroll tax—a regressive measure—mortality assumptions matter less here, because the taxes are paid earlier in life when mortality rates are lower for all groups.

—Andrew Balls

Do Higher Cigarette Prices Encourage Youth to Use Marijuana?

One of the most fiercely debated issues in the controversy over restricting youth access to tobacco products is whether such deterrence will steer them towards use of illicit drugs, including marijuana. Opponents of cigarette price increases have repeatedly made the argument that such increases would lead youth to substitute marijuana for tobacco. In contrast, substance abuse experts have long suspected cigarettes are a "gateway drug," encouraging the young smoker to experiment with beer, marijuana, and other illegal substances.

In **Do Higher Cigarette Prices Encourage Youth to Use Marijuana?** (NBER Working Paper No. 6939)—the first national study of the economic effects of pricing on alcohol, tobacco, and drug use on youth—authors **Frank Chaloupka, Rosalie Pacula, Matthew Farrelly, Lloyd Johnston, Patrick O'Malley,** and **Jeremy Bray** find that higher cigarette prices will not increase marijuana use. In fact, the authors' data suggests that higher cigarette prices will both reduce youth smoking and lower the frequency of marijuana use among youthful users. Higher prices also would likely lower the probability of young people using marijuana at all. The authors find that a 10 percent increase in the price of cigarettes would reduce the probability of using marijuana by between 3.4 and 7.3 percent and would decrease the average level of use by regular users by between 3.6 and 8.4 percent.

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The authors' data come from the 1992 through 1994 Monitoring the Future Surveys of the Institute for Social Research at the University of Michigan. These annual surveys measure perceptions of, attitudes towards, and use of alcohol, tobacco, and other drugs among youth in grades 8, 10, and 12.

These findings are consistent with other studies that conclude that substance use among young people commonly progresses from tobacco to other substances. This implies that policies that reduce youth smoking might also reduce youth alcohol, marijuana and other illicit drug use. Similarly, this study is consistent with findings from the Centers for Disease Control and Prevention (CDCP) that suggest some youthful marijuana users also use tobacco to enhance their marijuana high, once again implying that there are links between the two which might be severed for these youth if the cost of tobacco products was increased significantly. This study also reinforces CDCP findings in which young people state they would not substitute marijuana use if cigarette prices should rise dramatically.

—Lester A. Picker

Herd Mentality Takes Over in Market Crisis

In **Foreign Portfolio Investors Before and During a Crisis** (NBER Working Paper No. 6968), **Woochan Kim** and **Shang-Jin Wei** analyze foreign investors' stock positions before and during the Korean economic crisis of 1997–8 and observe that in the midst of the turmoil, there was a convergence in behavior among all types of foreign investors—institutional and individual, resident and non-resident—that wasn't there before the trouble started. Kim and Wei note that when the crisis hit, almost all investors tended to sell stocks whose prices were plummeting and buy those whose prices were rising, a pattern known as "positive feedback trading."

The authors observe that before the crisis, foreign institutional traders who resided in Korea tended to sell

their "recently best performing stocks and buy the recently worse performing stocks." But when faced with economic instability, they started doing the opposite: namely, what everybody else was doing. Meanwhile, the crisis re-enforced the tendency of non-resident institutional investors to "aggressively" sell recent losers.

> "Herd behavior among all institutional investors increased significantly during the Korean economic crisis."

Overall, Kim and Wei find that herd behavior among all institutional investors increased significantly during the Korean economic crisis. As for individual investors, the authors find that the herd instinct before the crisis hit was already stronger than among institutional investors—this did not change that much when the economy soured. Also, when the authors compare residents to non-residents from both categories—institutional and individual—they find that the urge to herd was generally stronger among non-residents.

As Kim and Wei point out, studying the extent to which investors "mimic each other's behavior" instead of studying market fundamentals can shed light on how investor decisions can unnecessarily exacerbate an economic crisis. They also note that it can be relevant for the discussion on the desirability of capital controls.

Of course, herd behavior might not be such a bad thing if, in fact, it could be explained as all investors shrewdly utilizing useful information and pursuing the same winning strategy. But Kim and Wei find that the herd appears to have been running in the wrong direction. According to their evidence, investors would have made more money if they had bought stocks that had recently tanked and sold those that were on the up-tick. "The recent past losers outperform the recent winners, in a statistically significant and quantitatively large way, over one-month, two-month and so on, all the way to five month horizons," the authors state. "Again, a contrarian strategy (buying recent losers, selling recent winners) rather than a positive feedback one would have been more profitable."

One final note: Kim's and Wei's study also re-affirms the *Wall Street Journal*'s extraordinary influence on the decisions of investors outside Korea. The authors report that non-resident institutional investors buying Korean stocks tend to focus their herding behavior on "19 stocks regularly reported in the *Wall Street Journal*" more than any other stocks, including those of the top five Korean conglomerates.

—Matthew Davis

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