The NBER Digest

NATIONAL BUREAU OF ECONOMIC RESEARCH

February 2015


*INSIDE THIS ISSUE*



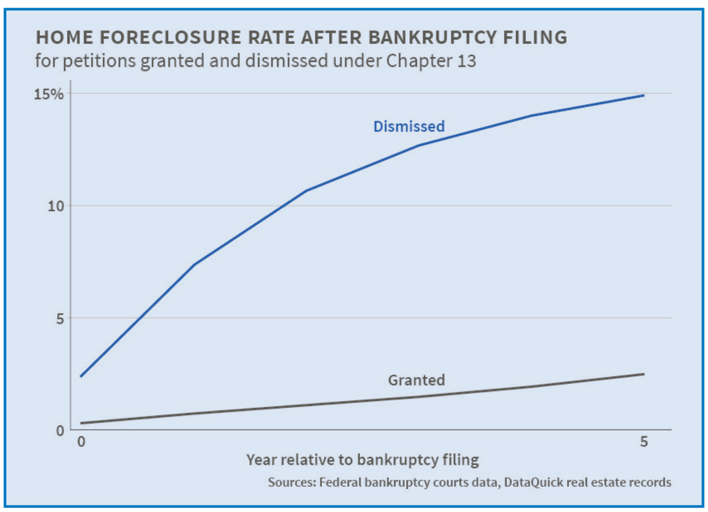
## Measuring the Effects of Consumer Bankruptcy Protection

In recent years, nearly one in ten American households has filed for bankruptcy, and yet it has long been unclear whether bankruptcy protection actually benefits debtors. In **Debt Relief and Debtor Outcomes: Measuring the Effects of Consumer Bankruptcy Protection** (NBER Working Paper No. 20520), **Will Dobbie** and **Jae Song** use a new dataset linking 500,000 bankruptcy filings to tax records from the Social Security Administration and foreclosure records to estimate the effect of bankruptcy on subsequent earnings, mortality, and home foreclosure. Their study focuses on the Chapter 13 form of bankruptcy, which allows individual debtors to keep most of their assets in exchange for a partial repayment of debt.

The researchers also consider the key role of the assigned bankruptcy judge, who decides all matters connected to a bankruptcy request, including whether or not to dismiss the filing. Dobbie and Song use differences in the probability that a judge dismisses a filing to estimate the causal impact of bankruptcy protection. They also note that more lenient judges may confirm repayment plans that are more generous to debtors or that are less feasible.

People whose petitions were approved had higher earnings, lower mortality rates, more employment, and fewer home foreclosures.

Using differences in judges' leniency as a variable for bankruptcy protection, Dobbie and Song find that Chapter 13 bankruptcy protection does in fact benefit debtors. Over the first five post-filing years, debtors who receive Chapter 13 protection report annual earnings that exceed the earnings of those who do not receive protection by $5,562, or 25.1 percent of their earnings in the pre-filing period. The difference in employment rates is 6.8 percentage points, and five-year mortality is 1.2 percentage points lower — a 30 percent differential — for those who receive protection. The difference in the five-year home foreclosure rates is 19.1 percentage points. The analysts note that the estimated impacts come from deterioration of outcomes among dismissed filers, not gains by filers who are granted protection. Filers who are granted protection have similar pre- and post-filing earnings. In contrast, dismissed filers experience large and persistent drops in earnings.




Dobbie and Song say their evidence is consistent with the hypothesis that the results are driven by increased incentive to work and increased economic stability following the receipt of bankruptcy protection. They add that these results are significant in view of the continuing debate surrounding the use of debt relief and mortgage modification to stimulate the economy. Dobbie and Song suggest moreover that the restrictions on bankruptcy filing introduced by the 2005 Bankruptcy Abuse Prevention and Consumer Protection Act may have important adverse consequences on debtors.

—Matt Nesvisky

## How Higher Ed and Immigration Policies Affect the Level of Foreign IT Workers

Between 1993 and 2010, the share of foreign-born workers holding information technology (IT) jobs in the United States doubled — from 15.5 percent to 31.5 percent of the IT workforce. U.S. higher education and immigration policies were key factors behind this rise, according to **Finishing Degrees and Finding Jobs: U.S. Higher Education and the Flow of Foreign IT Workers** (NBER Working Paper No. 20505).

Workers in India, China, and other countries where IT jobs don't pay as well as in the U.S. realize a substantial return if they get work in the U.S. Student visas allow workers to enter the U.S., obtain a degree, and then transition to a work visa. This can be an attractive alternative to obtaining scarce temporary work visas.

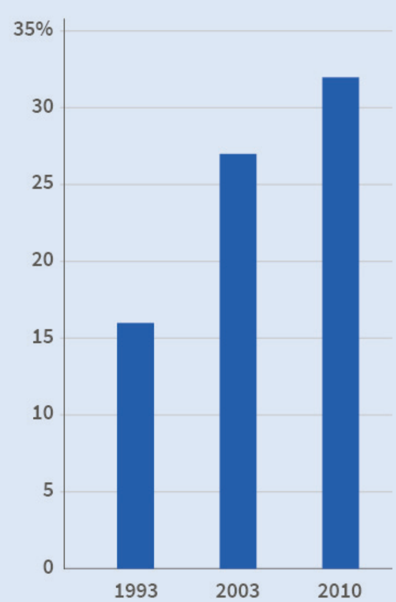
Authors **John Bound**, **Murat Demirci**, **Gaurav Khanna**, and **Sarah Turner** conclude that "demand among foreign students for U.S. higher education is high not because of the relative value of the degree itself, but because studying in the U.S. is a pathway to employment in the U.S., effectively lowering search costs, increasing networking opportunities, and providing a more easily interpretable skill set." They further note that "U.S. employers may prefer U.S.-trained workers because choosing workers from domestic institutions reduces their search and recruitment costs and the uncertainty in skill assessment."

While the number of H-1B work visas is capped, there is no restriction on issuance of student visas. An additional benefit of the student visa is the Optional Practical Training (OPT) program, which allows foreign students at U.S. universities to work and gain better access to the labor market.

Student visas allow workers to enter the U.S., obtain a degree, and transition to a work visa, an alternative to trying to obtain scarce temporary work visas.

The researchers find that 15.7 percent of all IT workers in the US were born abroad, entered the country on student visas, and then transitioned to work visas allowing them to stay. That share rises to 26.4 percent for workers under 35, who were likely to be affected by the tighter U.S. regulations on work visas instituted by the H-1B program in the last decade. Excluding those who came to the U.S. as youngsters on permanent visas, the share of foreign IT workers getting their highest degree from U.S. institutions is even higher. Furthermore, foreign students are more likely to be studying science and engineering than other fields. Their enrollment in computer science degrees closely follows U.S. labor market cycles.

IT WORKERS, FOREIGN-BORN




Sample: workers 25 years and older with at least a bachelor's degree

Source: National Survey of College Graduates

The authors consider two explanations for why foreign students come to study in the U.S. — limited education options at home and improved employment chances in the U.S. They find important support for the latter explanation, at least in cases where wages are substantially higher in the U.S. and enrollment rates vary with U.S. labor market conditions. Thus, for foreign workers wanting to relocate to the U.S., increases in work-visa restrictions might boost their incentive to pursue higher education in the U.S., especially for science and engineering (S&E) degrees which can command high salaries.

"Given the high returns in the U.S. labor market for S&E degrees, students from India and China are willing to pay for education in the U.S. and increasingly have the means," the authors conclude. "In turn, U.S. educational institutions value foreign students at least in part for tuition revenues." This explains, at least in part, why U.S. colleges and universities are expanding their sub-doctoral degree programs.

The authors identify a number of factors that may influence the future flow of high-skill workers to the U.S. These include restrictions on student visas, the cost of higher education, whether U.S. universities can expand their graduate offerings, particularly science and engineering master's programs, the expansion of universities abroad, and the pay level for high-skilled jobs in the U.S.

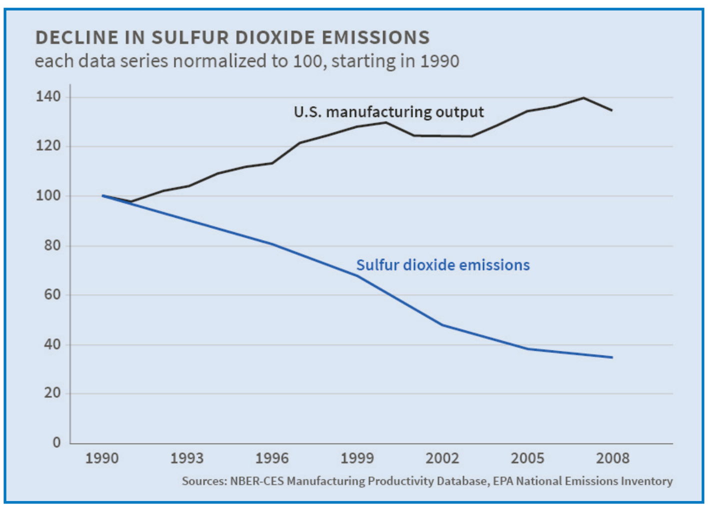
— Laurent Belsie

## Explaining the Clean-up of U.S. Manufacturing, 1990 to 2008

From 1990 to 2008, U.S. and E.U. manufacturing output grew while pollution emitted by manufacturers fell. One explanation for this trend is that developed countries have been offshoring pollution-intensive parts of their manufacturing sectors. Another is that manufacturing has shifted toward the use of cleaner production processes — the "technique effect." This suggests that by using cleaner fuels, less energy-intensive processes, recycling, and pollution-control technologies, the U.S. and Europe now can produce the same volume of goods as before in a less pollution-intensive manner. While the latter explanation has gained traction over time, direct measurements of the technique effect have been missing.

In **A Direct Estimate of the Technique Effect: Changes in the Pollution Intensity of U.S. Manufacturing 1990–2008** (NBER Working Paper No. 20399), **Arik Levinson** uses data on changes in the pollution intensity of 400 U.S. manufacturing industries over time to estimate the technique effect. He creates an index of technological change that compares actual pollution levels to what pollution levels would have been if pollution intensities were allowed to change over time but manufacturing output and the mix of goods produced had remained fixed at 1990 levels. This approach represents a substantial difference from previous studies that measured the technique effect indirectly as a residual, the component of the reduction in the pollution-to-output ratio that remained after other explanations that could be quantified had been taken into account.

Direct measurement of the technique effect shows that improvements in production techniques account for almost all of the decline in emissions.



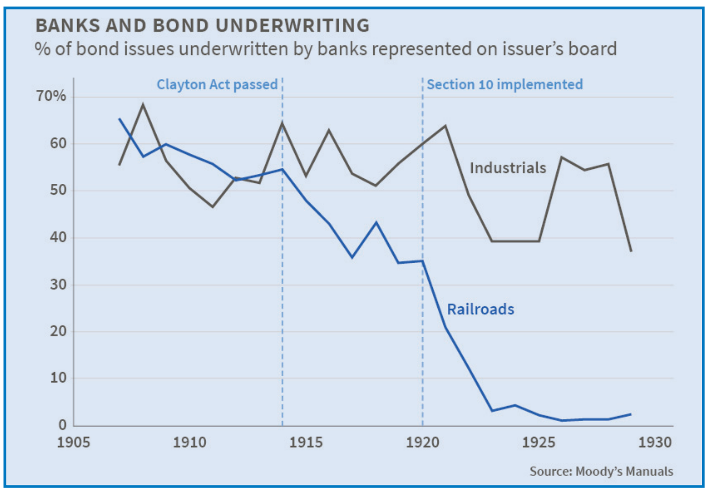

Levinson's results show that the index drops nearly as fast as actual emissions, implying that nearly all of the cleanup of U.S. manufacturing can be explained by technological changes within industries, rather than shifting output among industries. While prior studies, using indirect approaches, suggested that the technique effect accounted for around 88 percent of the U.S. cleanup, Levinson's direct calculations place the figure at around 92 percent. The findings therefore corroborate the previous studies as to the importance of the technique effect.

The results also indicate that the manufacturing industries that experienced the largest declines in their pollution-to-output ratios expanded as a share of the total manufacturing sector. Levinson notes that this pattern suggests that if the cleanup was the result of environmental regulation, then these regulations did not lead to the offshoring of polluting industries but rather to emission reductions on an industry-by-industry basis. Second, he notes that it may be possible to replicate the U.S. cleanup in other nations since the same techniques that were adopted in the U.S. could be available elsewhere.

— Claire Brunel

# Investment Banks as Corporate Monitors in the Early 20th Century

To facilitate access to external finance, firms often establish relationships with financial intermediaries such as commercial banks. These relationships allow firms to mitigate financial frictions by enabling the intermediary to gain access to information and monitor management. On the other hand, close relationships with financial intermediaries may also be costly for firms if the intermediaries are able to use their positions to charge firms higher interest rates or fees. In **Investment Banks as Corporate Monitors in the Early 20th Century United States** (NBER Working Paper No. 20544), **Carola Frydman** and **Eric Hilt** provide empirical evidence of the extent to which financial relationships help or hurt companies by analyzing the effects of a provision of the Clayton Antitrust Act of 1914.



BANKS AND BOND UNDERWRITING

% of bond issues underwritten by banks represented on issuer's board

> Barring underwriters from boards penalized railroads by denying them access to lower-cost financing for larger investments and led to lower market valuations.

In the early 20th century, close affiliations between American public companies and investment banks were common, particularly among railroads, which were the largest and most widely held corporations. On average, railroads had 41 percent of their securities underwritten by institutions represented on their boards. But in response to concerns that investment bankers were abusing their positions for their own benefit, Section 10 of the Clayton Act, which went into effect in 1921, prohibited investment bankers from serving on the boards of railroads for which they underwrote securities. The authors use newly collected panel data on public companies from 1905 to 1929 for their empirical tests.

Drawing on theoretical insights about corporate finance in the presence of asymmetric information, the authors predict that following the implementation of Section 10, firms that would have chosen to have a relationship with an underwriter-monitor would experience an increase in the cost of external finance, and a decline in market value, investment, and borrowing, as a result of the regulation. In line with these predictions, the empirical results indicate that the regulation limited bankers' roles as monitors and undermined the railroads' ability to finance valuable investment opportunities. Investment rates declined by 28 percent following the implementation of Section 10, suggesting that railroad investment decisions were quite sensitive to the availability and cost of external financing. Valuations and leverage also experienced declines but in a more modest range, between 2 and 5 percent. Average interest rates increased around 4 percent.

In order to verify that the Clayton Act was in fact responsible for these changes, the authors perform the same empirical analysis on industrial firms, which were not subject to the law. They find no effects on industrial firms with close relationships with their securities underwriters following the imposition of Section 10.

Therefore, although the goal of the Act was to prevent financiers from overcharging railroads and their investors through self-dealing, the regulation in fact harmed the firms it was intended to help. Indeed, the benefits from monitoring and facilitating access to credit outweighed the costs for those railroads. Prohibiting close financial relationships penalized firms by denying them access to lower-cost financing for larger investments, and led to lower market valuations.

These results highlight the possibility of unintended consequences from financial regulation. Although this analysis is restricted to railroads, the benefits of close relationships between companies and their financiers might have been even higher for industrial firms which had less-established reputations, less collateral, and poorer disclosure of financial information than railroads. While it is less common for major American corporations to have bankers on their boards today, the findings are relevant for countries around the world with more limited protections of investors or strong asymmetries of information between insiders and outsiders.

—Claire Brunel

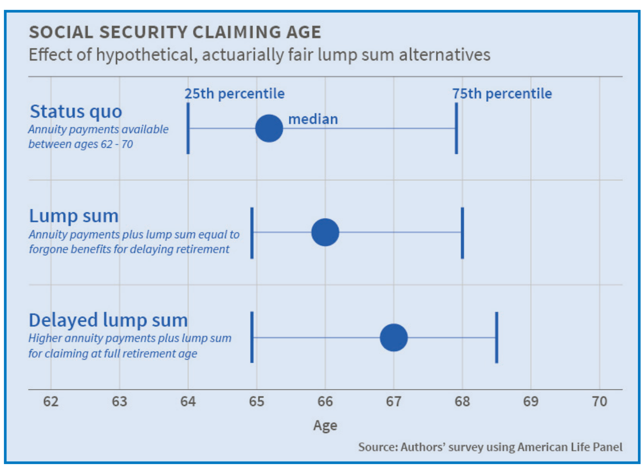
# The Timing of Pension Payouts and Social Security Claiming

As the U.S. population ages and people spend more years in retirement, the issue of when to begin collecting payouts from retirement plans, and in what form to take them, has attracted growing attention from both retirees and policymakers. Two NBER working papers tackle this financially thorny issue, one looking at private retirement plans and the other at the public Social Security program. These studies explore how changes to distribution and vesting rules could affect retirees as well as the federal budget.

In **Do Required Minimum Distributions Matter? The Effect of the 2009 Holiday On Retirement Plan Distributions** (NBER Working Paper No. 20464), authors **Jeffrey R. Brown, James Poterba,** and **David Richardson** examine the one-time "holiday" suspension of "Required Minimum Distribution" (RMD) rules. In early 2009, Congress passed legislation that allowed private savings-plan participants to skip required payouts from their retirement plans for that year, in part to allow them to begin rebuilding their nest eggs after losses in account values that were triggered by falling asset prices during the financial crisis. Specifically, the authors looked at the actions of tens of thousands of 403(b) retirement-plan participants at TIAA-CREF, a large retirement-services provider that has historically primarily served employees at colleges, universities, and other nonprofit institutions. They also surveyed thousands of plan participants to gauge their motives for decisions related to the one-year suspension of otherwise mandatory distribution rules for tax-qualified savings plans.

The authors found that about one-third of participants who were taking required distributions in 2008 chose to suspend their payouts in 2009. This group appears to take distributions only because of the federal government's mandatory RMD rules. But the response was not uniform among participants. Younger and wealthier savings-plan participants were more likely to suspend distributions, figuring they didn't need the money for immediate consumption needs and preferring instead to let their investments grow tax-free. Twenty-five percent of those with savings plan balances of less than $50,000 suspended distributions, while the suspension rate was 40 percent for those with accounts valued at $250,000 or more.

Studies indicate Americans can be encouraged to work longer and delay Social Security claiming.




In **Will They Take the Money and Work? An Empirical Analysis of People's Willingness to Delay Claiming Social Security Benefits for a Lump Sum** (NBER Working Paper No. 20614), authors **Raimond Maurer, Olivia S. Mitchell, Ralph Rogalla,** and **Tatjana Schimetschek** explore whether lump sum payments to potential Social Security recipients might induce them to begin drawing regular monthly payouts at a later age and to work additional years.

The authors surveyed participants in the RAND American Life Panel data, and focus their analysis on the 2,400 respondents between the ages of 40 and 70. They presented the survey participants with various financial scenarios and attempted to gauge how they might react to different financial incentives, including getting actuarially fair lump sum payments if they delayed claims for monthly Social Security checks when they hit various program retirement ages. Currently, delayed claiming leads to an increase in lifetime annuity benefits when the claimant begins to receive benefits.

The authors found that many people would voluntarily work longer if they were offered actuarially fair lump sum amounts as an incentive to forgo collecting retirement annuities for a period of time. People would voluntarily claim about half a year later if the lump sum were paid for claiming any time after the earliest retirement age of 62, and about two-thirds of a year later if the lump sum were paid for those claiming after their full retirement age of 65. Those who would normally claim benefits at 62, the earliest age at which they could receive Social Security, were mostly likely to respond to lump sum payment incentives.

The findings of both studies may inform policy discussions about how the structure of both private and public retirement programs affect private saving for retirement and the length of working careers.

—Jay Fitzgerald

# The Impact on School Performance of No Child Left Behind Program Sanctions

Title I is a federal program that provides funding to local school districts in the United States. The funds are supposed to be used to improve the academic achievement of students from low-income families. Under the No Child Left Behind Act of 2001, school districts receiving this funding are required to track student performance. If a school's performance falls below a state-defined threshold on statewide achievement exams, the school is subject to a series of sanctions. The sanctions range from placement on a watch list for the first year of failure to "restructuring," which involves replacement of a school's administration and staff.

In **The Impact of No Child Left Behind's Accountability Sanctions on School Performance: Regression Discontinuity Evidence From North Carolina** (NBER Working Paper No. 20511), **Thomas Ahn** and **Jacob Vigdor** find that school restructuring improves student performance at all levels. They conclude that "school management or leadership problems constitute the single greatest obstacle to improved student performance" and speculate that other incentives for improvement fail to have observable positive effects because "school leaders who cannot formulate strategies to improve performance cannot be expected to react constructively to incentives to do so."

Their results are based on student and school-level data for grades three through eight for the school years 2002–03 through 2008–09 provided by the North Carolina Educational Research Data Center. The data comprise 8,000 school-by-year observations and 1.7 million individual-level computations of test score changes. The effect of sanctions on test score gains was evaluated by looking at the change in students' standardized test scores in the year after a sanction was imposed. Changes were examined both for students who attended the school in question for consecutive years and for students who remained enrolled in any North Carolina school. Controls were added for race, English proficiency, and eligibility for free or reduced-price lunches.

The evidence suggests that both the least- and the most-severe sanctions improved student performance. Schools that were put on a watch list after their first year of failure posted improved reading and math scores for students near the accountability threshold and for students with below-average initial test scores. The scores of the best-performing students were unaffected. The authors suggest that being put on a watch list gave offending schools an incentive to focus resources on poorly performing students near the accountability threshold.

> A study of poorly-performing North Carolina schools shows that replacing administration and staff improves student test score performance at all levels.

Intermediate sanctions, those imposed after a year or more of inadequate performance, included requirements for extra tutoring for poor students, for allowing students to transfer to other schools, and for development of a restructuring plan. There was no evidence that any of these efforts improved test scores. School restructuring, the ultimate penalty, improved student achievement at all levels.

The authors caution against interpreting their results as suggesting that "a No Child Left Behind-style sanction regime is an effective way to identify schools in need of leadership change." Rather, they hope that more research on the nature of effective school leadership and management will produce targeted strategies that achieve similar results in a much shorter period of time.

—Linda Gorman

NBER



*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.*



*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 $9000; for academic libraries and faculty members, $7200. Higher rates apply for foreign orders. The on-line standard rate for a full subscription is $2160 and the on-line academic rate is $1000.*

***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/drsubscribe/.*