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## New Evidence on the Effects of Credit Card Regulations

In 2009, Congress passed the Credit Card Accountability, Responsibility, and Disclosure (CARD) Act, which was designed to protect credit card users from hidden or ill-understood borrowing costs. In **Regulating Consumer Financial Products: Evidence from Credit Cards** (NBER Working Paper No. 19484), **Sumit Agarwal, Souphala Chomsisengphet, Neale Mahoney, and Johannes Stroebe** investigate how the law affected consumers. They analyze data from over 150 million credit card accounts administered by the eight largest U.S. banks. These data were collected from the Credit Card Metrics dataset of the Office of the Comptroller of the Currency (OCC) and provide account-level information on contract terms, use, and payments at the monthly level from January

2008 to December 2012. The dataset is detailed enough to allow the authors to observe

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fees and to isolate how the law may have affected detailed provisions such as over-limit and late penalties.

The researchers focus on two key aspects of the CARD Act: regulatory limits on the ability of banks to charge certain types of credit card fees, and attempts to affect consumers’ repayment behavior by installing requirements that credit card bills provide clear information on the costs of making only the minimum payment. They find that regulations to limit fees had clear effects: over-limit fees dropped from an annual-

ized 1 percent of average daily balances to zero in February 2010. Late fees dropped by 0.5

percentage points in February 2010 and another 0.5 percentage points in August 2010, for a combined decline of 1 percentage point on a base of 2 percentage points. Across all implementation phases, the authors estimate that the CARD Act reduced overall fee costs by an annualized 2.8 percent of borrowing volume. With an outstanding credit card volume of \$744 billion in the first quarter of 2010, this translates into annual savings for credit card users of \$20.8 billion per year. The decline in fees was the largest for borrowers with

low FICO scores, from whom the companies had traditionally collected sizable interest and fees. For borrowers with FICO scores below 620, overall fee revenue dropped by more than half after enactment of the CARD Act, from 23 percent to

about 9 percent of their average daily balance.

The authors also analyze the law's requirement that banks reveal the interest savings from paying off balances within 36 months rather than making only minimum payments. They

find that this "nudge" boosted the number of account holders making the 36-month payments by 0.5 percentage points, with a similar decrease in the number of account holders paying less than this amount.

— Matt Nesvisky

## Retiree Health Insurance and Early Retirement in the Public Sector

Public sector employment in the United States is often characterized as having lower salary levels than private sector employment, in return for which employees enjoy higher job security, greater access to defined benefit pensions, and retiree health insurance that is available at a relatively young retirement age. In **The Role of Retiree Health Insurance in the Early Retirement of Public Sector Employees** (NBER Working Paper No. 19563), **John Shoven** and **Sita Slavov** investigate whether access to retiree health benefits raises the likelihood that public employees retire before age 65, the age of eligibility for Medicare insurance coverage.

They find that state and local government employees aged 60 to 64 are 5.1 percentage points more likely to stop working if they have retiree health benefits than if they do not. For those without such benefits, the probability is 18.4 percent; for those with coverage, it is 23.5 percent.

Private sector employees aged 60 to 64 with retiree health benefits are 3.3 percentage points more likely to retire early than their counterparts who have no

had *higher* average earnings, in contrast to some claims, and were more likely to be female, have a college degree, and be non-white. They were more likely to have

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"...state and local government employees aged 60 to 64 are 5.1 percentage points more likely to stop working if they have retiree health benefits than if they do not."

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such benefits. The availability of retiree health benefits does not appear to affect the probability of retirement for federal civilian or military employees at any of the ages studied.

The authors study data from the 1992, 1998, and 2004 waves of the Health and Retirement Study (HRS). Their sample is restricted to people who had five or more years of service in their current job. The HRS provides an unusually rich set of control variables that might affect retirement decisions.

Public sector employees were more likely to have higher pension wealth and lower total non-pension assets than their private-sector counterparts. They also

employer-provided health insurance, retiree health insurance, and a defined benefit pension than private sector employees.

The authors note that the Affordable Care Act, which was enacted in 2009, may alter the relative attractiveness of jobs in the private sector and in state and local government. The new health benefit exchanges offer guaranteed-issue subsidized health insurance policies for Americans of any age, weakening the connection between employment and health insurance. This may substantially reduce the value of one of the historically important benefits of state and local government employment.

— Linda Gorman

## Do Fixed Patent Terms Distort Innovation?

Patents award innovators a fixed period of market exclusivity, usually 20 years. However, in industries such as the pharmaceutical industry, firms file patents at the time of invention rather than at the time of first sale, so effective patent terms vary depending on the delay between invention and commercialization. When the delay is substantial as a result of lengthy clinical trials, the effective patent term can sometimes be quite short. In the extreme, inventions that would take longer than 20 years to commercialize receive effectively no patent protection.

In **Do Fixed Patent Terms Distort Innovation? Evidence from Cancer Clinical Trials** (NBER Working Paper No. 19430), authors **Eric Budish, Benjamin Roin, and Heidi Williams** explore how the delay between innovation and commer-

cialization affects R&D incentives in the pharmaceutical industry.

Using a newly constructed dataset on cancer clinical trial investments since 1970, the authors' empirical work takes

five-year survival rates, for which the effective duration of patent protection is shorter. A ten percentage point increase in the five-year survival rate for a given diagnosis is associated with an 8.7

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“... there is less R&D investment in drugs that target patient groups with longer commercialization lags, as proxied by higher ... survival rates, for which the effective duration of patent protection is shorter.”

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advantage of the fact that the length of a clinical trial is directly related to the survival time of the patient. Clinical trials are shorter — and hence effective patent terms longer — for drugs targeting late-stage cancer patients relative to drugs targeting early-stage cancer patients or cancer prevention. The authors find that there is less R&D investment in drugs that target patient groups with longer commercialization lags, as proxied by higher

percent decrease in R&D investment. Based on this and various sources of complementary evidence, the authors conclude that because of the distortions in R&D allocation that result from differential effective patent terms, current R&D spending does not yield as many potential life-years saved as it might if there were longer effective terms for R&D on early-stage cancer and cancer prevention.

— Claire Brunel

## Price Sensitivity of College Application Decisions

A small change in the cost of sending test scores to colleges can have a large impact on the number of schools to which students apply and consequently, students may end up attending more selective colleges, according to **Small Differences that**

**Matter: Mistakes in Applying to College** (NBER Working Paper No. 19480) by **Amanda Pallais**.

For years, students taking the ACT, a standard college-entrance exam, were allowed to send test scores to three colleges for free. In the fall of 1997, the

ACT raised this number to four. The share of test-takers sending four reports soared from 3 percent for the class of 1996 to 74 percent for the class of 2000.

Pallais finds that allowing students to send a fourth score report to colleges for free not

only led them to apply to more colleges, but it also widened the range of colleges that students considered and increased the likelihood that students would attend a more selective college. Most of the widening—about 60 percent—occurred on the upside, as students sent their extra score to a more selective college than their other picks. Particularly for low-income students, defined as those with family incomes of less than \$40,000 per year, sending an extra application resulted in students' attendance at colleges of higher average selectivity.

The study reports that on average, the low-income ACT-takers in the class of 1998 attended colleges where the average ACT scores of incoming students were 0.26 ACT points higher than the schools attended by the previous year's crop of test takers. In contrast, middle- and high-income students attended slightly less selec-

tive colleges after the fourth test score report became free. The author writes that “[t]his esti-

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“... allowing students to send a fourth score report to colleges for free not only led them to apply to more colleges, but it also ... increased the likelihood that students would attend a more selective college.”

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mate is relatively small (about one fourth of the effect for low-income students), but suggests that some higher-income students may have been crowded out of selective colleges by lower-income students.”

Attending more selective colleges could substantially increase low-income students' earnings. Drawing on a variety of parameter estimates from previous studies, the author estimates that even the small rise in college selectivity generated by this policy change could mean an increase of \$10,000 in earnings over a low-income student's lifetime.

The study notes that ACT

test takers didn't have to wait for the test rules to change to send scores to a fourth school.

They could have paid an extra \$6 to do so before 1997. Given that the benefits of sending an additional score report for low-income students seems much greater than this cost, why didn't many students spend the extra \$6? “[M]any students use rules of thumb to determine which colleges to apply to,” the author writes. “[S]tudents may interpret the ACT providing three (or four) free score reports as a signal that sending three (or four) applications is recommended and use that signal as a rule of thumb about how many colleges to apply to.”

— Laurent Belsie

## How “Sticky” are Investments in Defined Contribution Pension Plans?

Mutual fund holdings in employer-sponsored defined contribution (DC) plans are an important and growing segment of today's financial markets. Assets in DC plans increased from \$1.7 trillion in 1995 to \$5.1 trillion in 2012, and at the

end of this period DC plans constituted 22 percent of total U.S. mutual fund assets and 27 percent of U.S. equity fund assets. Such holdings are expected to remain significant because of the increasing number of Americans moving toward retirement and

the transition of corporations and public entities toward the use of defined contribution plans rather than defined benefit plans.

In **Defined Contribution Pension Plans: Sticky or Discerning Money?** (NBER

Working Paper No. 19569), **Clemens Sialm, Laura Starks,** and **Hanjiang Zhang** analyze the behavior of plan sponsors and participants. They explore whether DC pension plan investments constitute a source of “sticky” money for mutual funds, in the sense that once contributions flow into a given fund they are very unlikely to be redirected to another fund.

The authors observe that DC plan fund flows are driven both by the menu choices offered by plan sponsors and by the decisions of individual plan participants. Contrary to the widely held belief that DC plan assets are sticky because of plan participants’ inertia, the authors report that the DC money is more volatile and exhibits more flow-performance sensitivity than non-DC money invested at mutual funds. There is less autocorrelation from one year to the

next in where DC funds are invested than in non-DC investments. Using a sample of plan

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“... [defined contribution] DC money is more volatile and exhibits more flow-performance sensitivity than non-DC money invested at mutual funds.”

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sponsor data, the authors find that this flow-performance sensitivity is driven by the actions of plan sponsors in dropping poorly performing funds from their menus and adding well-performing funds. This process of changing the menu of investment choices for plan participants has the effect of moving participants’ assets, even if the participants initiate relatively few transactions on their own. The differences in flow patterns between DC and non-DC investors that the authors document suggest that mutual fund management companies can diversify the net flows into their

funds by offering the funds to both DC and non-DC investors. The authors also examine

whether DC plan sponsors and their participants are more discerning in fund selections than non-DC investors, in the sense that such flows can predict funds’ long-term future return performance. While non-DC fund flows predict future performance negatively, the authors find that DC fund flows have no predictive power for future fund returns. They conclude that plan sponsors prevent their participants, on average, from pursuing whatever investment strategies lead non-DC investors to negatively predict future fund performance.

— Les Picker

## How Firms Prevent the Revelation of Bad News

A number of laws and regulations govern the timing and type of information disclosed by public companies, as part of an overall effort to create a level playing field for institutional and individual investors. In **Playing Favorites: How Firms Prevent the Revelation of Bad News** (NBER Working Paper No. 19429), authors

**Lauren Cohen, Dong Lou,** and **Christopher Malloy** examine one way companies can discourage the disclosure of negative information in spite of these regulations: by managing or “casting” their earnings conference calls.

The study examines how firms can cast their earnings conference calls by disproportion-

ately calling on bullish analysts and thereby avoiding the release of negative information that they would like to avoid publicizing. The authors compile conference call transcripts, analyst coverage reports and recommendations, quarterly financial data and earnings restatements from firms, stock prices, and other information for the years

2003 through 2011. Reviews of individual company data and conference call transcripts sometimes reveal clear examples of casting; in one case, a firm called exclusively on analysts with bullish recommendations on the firm's stock. Though not every instance of casting is so overt, the authors show that many firms appear to cast conference calls and often only release negative news months after these calls.

The authors find that firms that engage in conference call casting experience higher short-term returns, but later suffer negative returns when adverse news is released, compared to

their counterparts that do not correspondingly manage their calls. The authors estimate that a long-short portfolio that would go long on non-casting calls and short on companies

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“...firms that engage in conference call casting experience higher short-term returns, but later suffer negative returns when adverse news is released...”

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that cast their calls would earn abnormal returns of between 91 and 101 basis points per month. They find no evidence of return reversal in the future, suggesting that the negative information that was not revealed on the calls that were cast was important for fundamental firm value.

Firms in the data sample were more likely to cast their calls when they barely met or exceeded earnings expectations or when they were about to issue equity, which could have

generated incentives to keep share prices high to maximize proceeds from the stock sale. Casting also appears to be more likely at firms that are covered by fewer analysts, have fewer institutional owners, and are more volatile.

— Jay Fitzgerald

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