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The Effect of Health Insurance Coverage on the Use of Medical Services

In **The Effect of Health Insurance Coverage on the Use of Medical Services** (NBER Working Paper No. 15823), co-authors **Michael Anderson, Carlos Dobkin, and Tal Gross** exploit the abrupt change in third party coverage that occurs between ages 18 and 19—the result of young adults “aging out” of their parents’ insurance plans—to estimate the effect of health insurance coverage on the use of medical services. The authors find that “aging out” results in an abrupt 5 to 8 percentage point reduction in the probability of having health insurance, and that not having health insurance leads to a 40 percent reduction in emergency room visits and a 61 percent reduction in inpatient hospital admissions.

This study examines data on hospital emergency room use and inpatient visits from hospital censuses in Arizona, California, Iowa, New Jersey, New York, Texas, and Wisconsin between 1990 and 2007. These data are augmented

by information from the National Health Interview Survey (NHIS) and the Medical Expenditure Panel Survey (MEPS).

“A 10 percent decrease in the third party coverage rate is associated with a 4 percent decrease in emergency room visits.”

The NHIS data suggest that the proportion of the total population that is uninsured increases by 4.6 percentage points at age 19, while the emergency room and hospital inpatient data imply that the proportion uninsured visiting those venues increases by 8.1 and 2.7 percentage points respectively at age 19.

Overall, the authors find that a 10 percentage point decrease in the insurance coverage rate is associated with a 4 percent decrease in emergency room visits. The net decrease in emergency room visits by 19-year olds suggests that newly uninsured patients do not substitute emergency room care for primary care in significant numbers.

Hospital admissions through the emergency room also drop by 1 to 2 percent at age 19. Direct inpatient admissions, which are

more likely to be elective, fall by 6.7 percent for men and 6 percent for women (excluding pregnant women, almost all of whom are covered by either private insurance or Medicaid). The reductions occur at both non-profit and for-profit hospitals, but are particularly large at for-profit hospitals. There is no reduction in admissions to public hospitals. The authors estimate that if the United States adopted universal health insurance coverage and there were sufficient capacity, there would likely be an increase in hospital stays of roughly 3.8 million per year and in emergency room visits of approximately 13.1 million per year.

— Linda Gorman

The Impact of Non-Linear Electricity Pricing

With rising energy costs and a growing awareness of the threat of climate change, some policymakers believe that retail energy prices will have to rise to reflect the true cost of energy consumption. At the same time there is concern that higher energy prices, particularly in the electric utility sector, will disproportionately affect the poor.

Increasing-block pricing (IBP) for electricity — which is also known as inverted-block pricing, increasing-tier pricing, or lifeline rates — is seen as one way to ensure that nearly every household can afford a basic quantity of electricity while raising additional revenue from wealthier electricity consumers. One recent survey of 61 U.S. utilities found that about one-third of them use IBP for residential customers, and many more utilities and regulators are currently considering adopting IBP.

California's regulated utilities initially adopted IBP in the 1980s. After the California electricity crisis of 2000–2001, three investor-owned utilities needed to raise substantial revenues, but regulators and state legislators were concerned about the impact of rate increases on lower-income households. The regulators adopted a five-tier retail IBP structure where the prices on the first two tiers were virtu-

ally frozen at pre-crisis levels and incremental revenue needs were to be met by raising prices on tiers 3, 4, and 5. These changes led to much greater variation

“The current [inverted block pricing] rate structure cuts the electricity bills of households in the lowest income bracket by about 12 percent, but a targeted low-income program may offer as much assistance while distorting prices less.”

in the prices faced by different households within the IBP structure. By 2008, the price on the highest block — that is, the marginal price for about 6-to-9 percent of all residential customers — was between 80 and 300 percent higher than the price on the lowest block, depending on the utility.

In **The Redistributive Impact of Non-linear Electricity Pricing** (NBER Working Paper No. 15822), author **Severin Borenstein** studies the effect of California's IBP regime, combining household-level utility billing data with census data on income distribution by area. He finds that the current rate structure redistributes income to lower-income groups, cutting the electricity bills of households in the lowest income bracket by about 12 percent (about \$5 per month). But Borenstein also finds that the redistribution from IBP comes at a significant cost linked to distorted prices, with many custom-

ers facing marginal prices that are much higher or lower than the marginal cost of providing electricity. As a result, some customers may consume much more

electricity than would be optimal and others much less.

Borenstein compares the impact of IBP to the California Alternate Rates for Energy (CARE) program, which offers a different and lower electricity rate structure to qualified low-income households. He concludes that means-tested programs, such as CARE, can help low-income households as effectively as IBP while causing less inefficiency from price distortions. He also notes, however, that more of the revenues under IBP come from the very wealthiest households than under the CARE program, so IBP may be a more progressive means of redistribution.

Finally, Borenstein shows that a common approach to studying (or controlling for) income distribution effects by using *median* household income within a census block group may substantially understate the potential redistributive effects of programs like IBP or CARE.

— Lester Picker

Evidence on the Effects of Nurses' Strikes

Hospitals in the U.S. were excluded from collective bargaining laws for three decades longer than other sectors because of fears that strikes by nurses might imperil patients' health. Today, while unionization has been declining in general, it is growing rapidly in hospitals, with the number of unionized workers rising from 679,000 in 1990 to nearly one million in 2008. In **Do Strikes Kill? Evidence from New York State** (NBER Working Paper No. 15855), co-authors **Jonathan Gruber** and **Samuel Kleiner** carefully examine the effects of nursing strikes on patient care and outcomes.

The researchers match data on nurses' strikes in New York State from 1984 to 2004 to data on hospital discharges, including information on treatment intensity, patient mortality, and hospital readmission. They conclude that nurses' strikes were costly to hospital patients: in-hospital mortality increased by 19.4 percent and hospital readmissions increased by 6.5 percent for patients admitted during a strike.

Among their sample of 38,228 such patients, an estimated 138 more individuals died than would have without a strike, and 344 more patients were readmitted

“In-hospital mortality increased by 19.4 percent and hospital readmissions increased by 6.5 percent for patients admitted during a strike.”

to the hospital than if there had been no strike. “Hospitals functioning during nurses' strikes do so at a lower quality of patient care,” they write.

Still, at hospitals experiencing strikes, the measures of treatment intensity — that is, the length of hospital stay and the number of procedures performed during the patient's stay — show no significant differences between striking and non-striking periods. Patients appear to receive the same intensity of care during union work stoppages as during normal hospital operations. Thus, the poor outcomes associated with strikes suggest that they might reduce hospital productivity.

These poor health outcomes increased for both emergency and

non-emergency hospital patients, even as admissions of both groups decreased by about 28 percent at hospitals with strikes. The poor health outcomes were not appar-

ent either before or after the strike in the striking hospitals, suggesting that they are attributable to the strike itself. And, the poor health outcomes do not appear to do be due to different types of patients being admitted during strike periods, because patients admitted during a strike are very similar to those admitted during other periods.

Hiring replacement workers apparently does not help: hospitals that hired replacement workers performed no better during strikes than those that did not hire substitute employees. In each case, patients with conditions that required intensive nursing were more likely to fare worse in the presence of nurses' strikes.

— Sarah H. Wright

Do Americans Consume Too Little Natural Gas?

In **Do Americans Consume Too Little Natural Gas? An**

Empirical Test of Marginal Cost Pricing (NBER Working Paper

No. 15885), co-authors **Lucas Davis** and **Erich Muehlegger**

measure the extent to which prices exceeded marginal costs from 1991-2007 in the U.S. natural gas distribution market. They find large departures from marginal cost pricing in all 50 states, with residential and commercial customers facing average markups of over 40 percent.

While industrial customers face prices that are close to marginal cost (2.5 percent markup), most residential and commercial customers face prices closer to average cost (40 percent markup), with most revenues coming from per-unit charges, rather than through fixed monthly fees. Based on conservative estimates of the price elasticity of demand, these distortions impose annual welfare losses of \$2.7 billion compared to marginal cost pricing, roughly 3 percent of total market

value. The current system with low fixed fees and high per unit

“While industrial customers face prices that are close to marginal cost (2.5 percent markup), most residential and commercial customers face prices closer to average cost (40 percent markup).”

prices implies that there are an inefficiently large number of natural gas customers, each consuming too little natural gas.

High markups have important implications for environmental policy. The average markup for residential and commercial customers is equivalent to a tax of over \$55/ton of carbon dioxide. In part, the preference for low fixed fees and high per-unit markups may reflect efforts by regulated companies to maximize the total number of customers and thus the total rate base. It could also be related to dis-

tributional considerations: low fixed fees will attract small cus-

tomers while potentially leading some large consumers to switch to other energy sources, depending on the distribution of customers of different sizes and the ease with which they can substitute across fuels. Attempts to increase fixed fees typically face substantial political opposition, because they would result in increased expenditures for low-income groups and small businesses, both of whom are more price-sensitive than high-income households.

— Claire Brunel

Consequences of Entrepreneurial Finance

Angel investment groups are an important and growing source of entrepreneurial finance. These groups — which are typically semi-formal networks of high-net-worth individuals — meet regularly to hear aspiring entrepreneurs pitch their business plans before deciding whether to invest in such ventures. In **The Consequences of Entrepreneurial Finance: a Regression Discontinuity**

Analysis (NBER Working Paper No. 15831) co-authors **William Kerr, Josh Lerner,** and

breakpoints in the funding process to separate the role of matching (that is, good entrepreneurs

“Some of the ‘softer’ features of entrepreneurial financing, such as angels’ mentoring and networks of business contacts, may have helped the new ventures the most.”

Antoinette Schoar analyze the role of these “angel” entrepreneurial financiers in the success and growth of new ventures. Their approach also exploits

pairing with good investors) from the value provided by the angel investors.

The authors use data from 2001 to 2006 provided by two

angel investment groups: Tech Coast Angels of southern California and Boston-based Common Angels. They first analyze the distribution of over 4,000 ventures that approached these two groups to show the tremendous variation in start-up quality. Over 90 percent of the ventures fail to elicit significant support from the angels, and the probability of receiving funding in this group was basically zero. On the other hand, a small fraction of ventures receive overwhelming support from all of the angels involved.

The authors then focus on 130 ventures that were just

around funding thresholds, based upon the interest scores expressed by members. These borderline cases are the most interesting to the authors because the ventures are very comparable on observable quality dimensions at the time of the pitch. Thus, funding is related to idiosyncratic factors more than anything else. Looking forward, though, those ventures that were just above the funding border were 27 percent more likely to survive for at least four years than firms that narrowly missed the threshold for funding. Also, improvements of 30 to 50 percent were evident in ven-

ture growth, as measured by web traffic.

On the other hand, the authors find ambiguous results for whether angel financing helps ventures access other forms of entrepreneurial finance, like venture capital. Thus access to additional financing may be a by-product of the angel-led growth process, but may not be generally as important. Kerr, Lerner, and Schoar conclude that some of the “softer” features of entrepreneurial financing, such as angels’ mentoring and networks of business contacts, may have helped the new ventures the most.
—Frank Byrt

The Effect of Endowment Shocks on University Operations

Endowments have become increasingly important funding sources for America’s doctoral universities over the past twenty years. In **Why I Lost My Secretary: the Effect of Endowment Shocks on University Operations** (NBER Working Paper No. 15861), co-authors **Jeffrey Brown, Stephen Dimmock, Jun-Koo Kang, and Scott Weisbenner** find that although endowment payout policies are designed to help insulate universities from the ups and downs of the economy — typically by using a multi-year moving average to determine the endowment’s payout to the university — universities tend to reduce endowment

payout rates more than expected when markets plunge.

Since the 1970s, university endowments have grown much

While the growth of endowments generated income for universities, it also made schools more vulnerable to big market downturns.

“Universities with endowment portfolios invested in hedge funds, private equity, and other relatively illiquid vehicles, tend to make larger faculty and secretarial cuts [in market downturns] than schools with more liquid, traditional portfolios.”

faster than university expenditures as schools moved from bonds to stocks and, later, from stocks to alternative assets, such as hedge funds, private equity, and venture capital. From 1986 to 2008, the median endowment grew 9.8 percent, whereas the median university budget grew only 5.5 percent.

This study shows that when an economic shock causes an endowment to lose the equivalent of 10 percent of the school’s budget, the university typically cuts the tenured faculty, through some combination of restricted hiring, attrition, and dismissals, by 5.1 percent that year and by another

6.6 percent the following year. The authors emphasize that these cuts are relative to what the university would have done in the absence of a shock. Thus, some of these cuts are not absolute reductions but rather smaller-than-expected increases in funding or hiring. Such cuts are far more likely among less selective schools than more-selective universities, the authors find. The less-selective schools then bump up the pay of non-tenured faculty to carry the higher teaching load.

The composition of the university's endowment portfolio is also important. The more it invests in less liquid instruments, which can be difficult to sell in severe market plunges, the more it is likely to make cuts, such as in faculty and staff. Universities with endowment portfolios invested in hedge funds, private equity, and other relatively illiquid vehicles, tend to make larger faculty and secretarial cuts than schools with more liquid, traditional portfolios.

Most universities cut support and maintenance workers after a shock. More selective schools cut financial aid to students the year after the shock, with the size of their incoming freshman class also reduced. Less selective schools don't do this. Also, if a rival university has a big negative endowment shock, the school tends to increase its faculty hiring the following year. "This effect operates independently of the university's own endowment shock, and is consistent with a view of universities competing for academic talent," the authors write.

This study focuses on some 200 U.S. universities offering doctoral degrees from 1986 to 2008, a period that includes one particularly notable downturn: the 2000–2002 bursting of the dot-com bubble, when the value-weighted stock market fell 30 percent and the median university endowment lost 10 percent, with a quarter of schools losing 14 percent or more.

The authors also discuss the universities' initial response to the financial crisis in 2008–9. The *NACUBO-Commonfund Study of Endowments* for the 2009 academic year finds that 43 percent of endowments raised their spending rate while 25 percent lowered it. Although the increase would seem to contradict the authors' findings at first blush, the authors point out that the use of a three-year moving-average rule coupled with the recent downturn in endowment values should actually lead almost all endowments to have increased their spending rate.

"Taken as a whole, these results provide strong evidence that endowment shocks and endowment investment decisions have an important and significant impact on the real operations of the universities that these endowments are meant to support," the authors write.

— Laurent Belsie

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