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Also: Short Abstracts of Recent NBER Working Papers — see page 5

NBER NATIONAL BUREAU OF ECONOMIC RESEARCH
BULLETIN ON AGING AND HEALTH

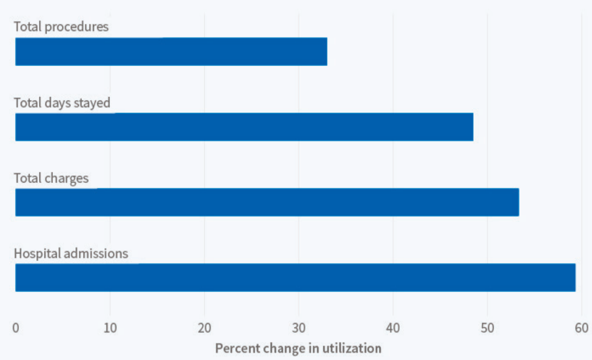
Is Medicare Advantage More Efficient than Traditional Medicare?

Medicare is the largest public insurance program in the U.S., with over 55 million elderly and disabled beneficiaries. Over time, this program has evolved to have a significant private component. The Medicare Advantage (MA) program offers beneficiaries the opportunity to enroll in a private health insurance plan (a HMO, PPO, or other coordinated plan) that is reimbursed by the federal government instead of traditional fee-for-service Medicare. In addition, beneficiaries who elect prescription drug coverage under Medicare Part D choose from a variety of private prescription drug insurance plans. More than 40 million Medicare beneficiaries have private insurance through MA or Part D plans.

An important motivation for the growing privatization of Medicare is the potential for private insurers to deliver health care services more efficiently than the government. Yet obtaining reliable evidence on this question is difficult. A key challenge is that individuals choose whether to enroll in MA or standard Medicare. Evidence suggests that MA beneficiaries are healthier than the Medicare population as a whole, so any differences in program expenditures may not necessarily reflect greater efficiency in the provision of care.

In their paper "**The Efficiency Consequences of Health Care Privatization: Evidence from Medicare Advantage Exits**" (**NBER Working Paper No.** 21650), researchers Mark Duggan, Jonathan Gruber, and Boris Vabson employ a novel strategy to explore this issue. The authors examine the change in health care utilization by MA beneficiaries after they switch to traditional Medicare because their private insurer has exited the market. By focusing on cases where there are no other MA providers in the county, the authors ensure that the change in MA status is unrelated to the individual's health or other characteristics.

CARE UTILIZATION AND MEDICARE ADVANTAGE
Large increases in utilization occurred in year after MA plan exit



Source: Authors' calculations using Centers for Medicare & Medicaid Services and New York State data

The authors use hospital discharge data from New York State linked to data on Medicare enrollment. This gives them the unique opportunity to track individual-level hospital utilization for those in MA and those switching between MA and traditional Medicare. During their sample period, 8 counties experience the exit of all MA insurers, affecting 3 percent of MA enrollees. The authors' empirical approach isolates the effect of MA exit, allowing for trends over time and differences across counties in hospital utilization.

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The central finding is that MA enrollees who are forced to switch to traditional Medicare due to MA exit experience an increase of 0.11 hospital admissions per capita, which represents a 60 percent increase relative to the mean of 0.18 admissions. This increase in hospitalizations is accompanied by a 48 percent increase in total days spent in the hospital, a 33 percent increase in the number of procedures, and a 53 percent increase in hospital charges.

If this increase represents "pent-up demand" by MA enrollees who were being treated less intensively, the increase in utilization should be temporary and fade over time. However, the findings do not support this hypothesis. The analysis also suggests that the effects of MA exit on utilization cannot be explained by other health care trends in the counties that experienced MA exit.

What might explain the lower hospital utilization of MA enrollees? The study's findings suggest two key mechanisms. The first is that MA plans restrict patients to hospitals that involve considerably longer travel. The second is that MA plans more tightly restrict elective and non-urgent hospitalizations. By contrast, the authors fail to find support for the theory that MA enrollees face higher cost-sharing than traditional Medicare beneficiaries.

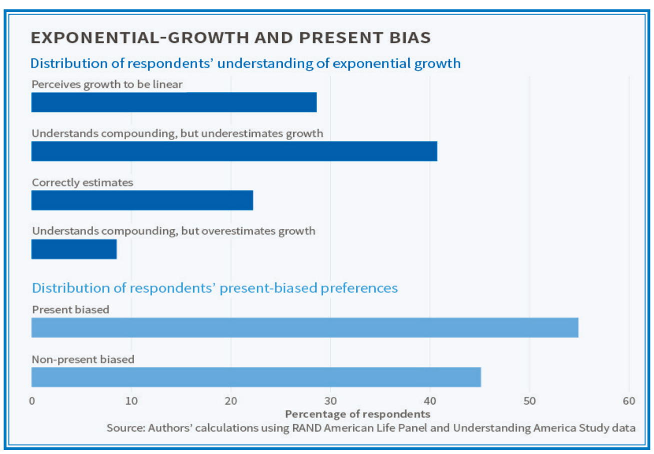
Do MA enrollees who switch to traditional Medicare experience an increase in the quality of care? The authors find that traditional beneficiaries do not use higher quality hospitals. They also find that the odds of readmission and of having a preventable hospitalization rise after MA exit. "By these measures, therefore, quality is falling for those initially enrolled in MA following the exit of MA plans." Evidence on mortality is less conclusive, but if anything, mortality rises following MA exit.

In concluding, the authors note that the role of private players in public insurance has been a subject of debate, with advocates claiming that private insurers provide services more efficiently and detractors suggesting that private insurers enroll a healthier population and receive overly-generous reimbursements from the government. The authors contribute to this debate by documenting sizeable increases in hospital utilization among many dimensions when MA plans exit a county. They note several limitations of their work, including their inability to track inpatient care and to look at outcome measures beyond mortality. Nonetheless, they conclude, "our results suggest that there are large efficiencies from ensuring that at least some managed care option is available to enrollees." Future work could help to identify the tradeoffs of various alternatives to promote MA plan availability.

At least one co-author has disclosed a financial relationship of potential relevance for this research. Further information is available at http://www.nber.org/papers/w21650.ack.

How Biases Affect Retirement Savings

With the decline of traditional pension plans, employer-sponsored individual accounts such as 401(k) plans have become a major source of retirement income for millions of Americans. These plans typically require individuals to make decisions about participation, contributions, investment allocation, and withdrawals. As a result, individuals' abilities and attitudes towards saving are increasingly consequential for their retirement security.



EXPONENTIAL-GROWTH AND PRESENT BIAS

In **"The Role of Time Preferences and Exponential-Growth Bias in Retirement Savings"** (NBER Working Paper No. 21482), researchers Gopi Shah Goda, Matthew Levy, Colleen Flaherty Manchester, Aaron Sojourner, and Joshua Tasoff explore two psychological tendencies that may lead people to save insufficiently for retirement. While standard economic theory suggests that savings decisions will depend on factors like the rate of return, the complexity of these decisions increases the likelihood that "behavioral" factors or biases will also play a role.

"Present bias" refers to the tendency, in evaluating a tradeoff between two future options, to give stronger weight to the earlier option as it gets closer. An individual with present-biased preferences might express willingness to invest a tax refund she will receive in six months in a retirement savings account, for example, but when the refund arrives she will prefer not to do so, even though nothing has changed except the passage of time. This individual will save less for retirement than another who also favors investing the tax refund (who has the same long-run "discount rate") but does not suffer from present bias and thus does not change her mind as the refund date nears.

"Exponential-growth bias" is a perceptual bias that relates to an individual's understanding of compound interest. An individual who neglects compounding will expect retirement account balances to grow linearly over time, while one who incorporates it will expect them to grow exponentially. The former individual may save less because he believes the expected return to saving to be less than it really is.

To estimate the prevalence of these two biases, the authors use data from two online surveys, the RAND American Life Panel and the Understanding America Study. To assess exponential-growth bias, participants are asked to calculate how much an investment of a certain amount would be worth after a specified period of time with a given interest rate. Individuals are allowed to use any approach or aids they like to answer the questions, and are paid more for giving more accurate answers, to mimic the environment and incentives they would face in making real-world decisions. To assess present bias, participants are asked about "present-future" and "future-future" tradeoffs (for example, would you prefer to receive $100 today or $120 in 12 months? $120 in 12 months or $144 in 24 months?).

The authors find that over half — 55 percent — of respondents have present-biased preferences. They also find that less than one-quarter of respondents correctly perceive account balances to grow exponentially over time. Seven in ten respondents perceive the rate of return on saving to be less than it really is, with roughly 30 percent believing that balances grow linearly over time and 40 percent estimating a rate of return that falls between linear and exponential growth. Interesting, while both types of bias are common, the correlation between them is weak, suggesting that the biases are largely independent.

Next, the authors examine the relationship between these biases and retirement saving. They find that both biases are strongly related to retirement account balances, even after controlling for the effect of income, education, risk preference, financial literacy, IQ, and other characteristics. A two-standard-deviation increase in either measure of bias (equivalent to moving from a typical level of bias to the 95th percentile) would decrease retirement savings by about $26,000, or about 20 percent relative to the mean value of $133,000. The effect is smaller for those who are more aware of their bias, which could be the case if these individuals use commitment devices to counteract present bias or tools and expert help to address exponential-growth bias.

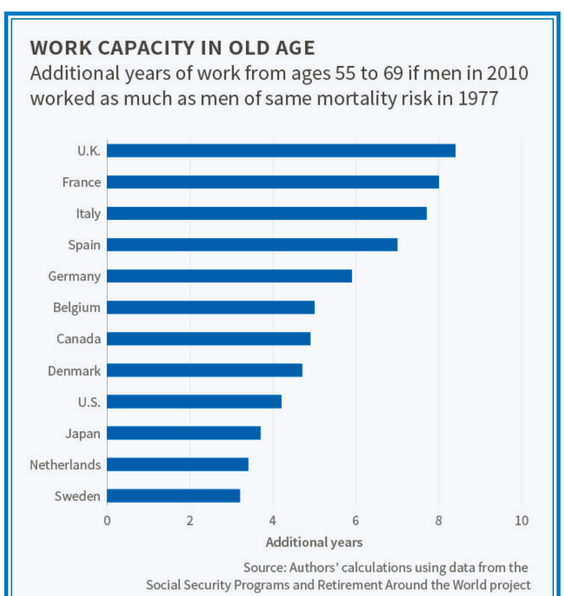
Overall, eliminating both biases from the sample would lead to a 12 percent increase in retirement savings, according to the authors' estimates. Turning to mechanisms, the authors find that these biases affect retirement savings by reducing flows into employer-sponsored retirement accounts. Conversely, the biases do not seem to affect enrollment or equity allocation.

In concluding, the authors note "while defaults and other alternatives have successfully increased average contributions in many contexts, and retirement income projections may move people towards better decisions when well-implemented, there is no evidence that these fully counteract the effects of exponential-growth bias and present bias on retirement saving decisions. More evidence regarding the ability of interventions to target biases related to retirement saving decisions is needed and remains an important direction for future research."

The authors acknowledge financial support by the TIAA-CREF Institute and the Pension Research Council/Boetter Center of the Wharton School at the University of Pennsylvania. This research was also supported by the U.S. Social Security Administration through grant #RRC08098400-07 to the NBER as part of the SSA Retirement Research Consortium. Additional support was provided by the National Institute on Aging through grant #R01AG020717 and the Social Security Administration for the UAS data collection.

Capacity to Work Around the World

Many social security systems around the world face long-term solvency challenges. Raising the retirement age is frequently suggested as one possible reform, since rising life expectancy is a contributing factor to the systems' strained finances.



A key consideration in any debate over raising the retirement age is whether individuals are healthy enough to extend their working lives. This question is the subject of the recent working paper by researchers Courtney Coile, Kevin Milligan, and David A. Wise, **"The Capacity to Work at Older Ages" (NBER Working Paper No.** 21939). Their paper is the introduction and summary to the most recent volume in the Social Security and Retirement Around the World series, in which researchers from the U.S., Canada, Japan, and nine European countries undertake similar analyses and combine them to gain greater insights.

The researchers employ two methods to estimate the ability of older individuals to work longer. They first ask, if individuals today worked as much as people with the same health worked in the past, how much more (or less) would they work? Health in this case is defined as mortality risk. In the U.S., for example, today's 55-year-olds have the same risk of dying as 49-year-olds did in 1977, due to improving mortality. Yet the employment rate of today's

55-year-olds is 17 percentage points lower than that of their same-mortality counterparts in the past. This yields the estimate that employment could be 17 points higher at this age, equating to an additional 0.17 years of work. Applying this logic at ages 55 through 69 suggests that individuals could work an additional 4.2 years, on average.

The values for other countries are also large, ranging from 3.2 years in Sweden to 8.4 years in the UK, with an average of 5.5 years across the twelve countries. But the average value is only 1.7 years if 1995 is used as the base year. This difference is due in large part to employment rates, which reached a low point around 1995 in most countries but were higher in both 1977 and 2010. As the authors note, "over the 1995 to 2010 period, employment has risen substantially in virtually all countries, and these employment gains have largely if not completely kept up with the gains in mortality." Looking back to 1977, mortality gains have been even larger and employment increases have not kept pace.

In their second approach, the researchers base their estimate of work capacity on a comparison to younger workers. The authors estimate the relationship between health and work for individuals ages 50 to 54 and combine this with the actual health of those ages 55 to 69 to predict their ability to work. The predicted share working declines with age, since health declines with age. Yet actual employment rates fall far faster than predicted rates. The difference between predicted and actual employment rate is the estimated additional capacity to work. For example, the authors estimate that an additional 17 percent of U.S. men ages 60 to 64 could work, based on their health status.

Interestingly, predicted employment rates are fairly similar across countries, while actual employment rates vary dramatically. At ages 60 to 64, for example, the share of men working ranges from 80 percent in Japan to less than 20 percent in France. Thus the authors estimate that the additional capacity to work at ages 60 to 64 is 50 percent or more in Germany, Italy, Belgium, and France, but less than 20 percent in Japan, Sweden, and the U.S. Earlier work in the series suggests that Social Security program provisions can explain much of the differences in employment rates.

In sum, both methods suggest that many older people may have additional capacity to work beyond current employment levels. The authors caution that their work "is not intended to suggest how long people should work nor to suggest what typical retirement ages should be in various countries." As people live longer, it may be natural for gains in life expectancy to be divided in some way between years of work and retirement. Further, there may be other factors that make it difficult for people to extend their working lives, such as weak demand from employers, which were not explored in this study.

The authors conclude, "the concept of health capacity to work, however, can be important in considering whether continued incremental increases in retirement ages, such as those that have been common in many countries over the past two or three decades, might be constrained by the health of older workers going forward. The results of this phase of the International Social Security Project suggest that this is not the case."

The NBER's International Social Security Project is supported by the National Institute on Aging (grant P01 AG012810).

NBER Profile: *Dana Goldman*

Dana Goldman is a Distinguished Professor of Public Policy, Economics, and Pharmacy at the University of Southern California where he holds the Leonard D. Schaeffer Director's Chair. Goldman is also a Research Associate in the NBER's programs in Health Care and Health Economics.

At USC, he oversees the Schaeffer Center for Health Policy and Economics — including 30 faculty and 35 staff engaged in health economics and policy research. Goldman's research interests include understanding how medical technology and insurance regulation affect short and long-term welfare. More recently, his work has focused on pharmaceutical regulation, comparative effectiveness, and outcomes research. He is currently leading a global modeling effort to understand the consequences of population aging around the world.

Goldman is one of the founding editors of the *Forum for Health Economics and Policy* and has served on the editorial boards of *Health Affairs*, *B.E. Journals of Economic Analysis and Policy*, and the *RAND Journal of Economics*, among others. He is a health policy advisor to the Congressional Budget Office and an elected member of the National Academy of Medicine. He is also the 2009 recipient of the Eugene Garfield Economic Impact Prize, the MetLife Foundation's Silver Scholar Award, and AcademyHealth's Alice Hersh Award.

He received his B.A. summa cum laude from Cornell University and a Ph.D. in Economics from Stanford University. In his free time, Goldman enjoys getting lost in the Santa Monica mountains, 'geocaching' with his sons, and exploring the various coffee shops in Los Angeles.

Abstracts of Selected Recent NBER Working Papers

21600
Emily Oster
Diabetes and Diet: Behavioral Response and the Value of Health

Individuals with obesity often appear reluctant to undertake dietary changes. Evaluating the reasons for this reluctance, as well as appropriate policy responses, is hampered by a lack of data on behavioral response to dietary advice. I use household scanner data to estimate food purchase response to a diagnosis of diabetes, a common complication of obesity. I infer diabetes diagnosis within the scanner data from purchases of glucose testing products. Households engage in statistically significant but small calorie reductions following diagnosis. The changes are sufficient to lose 4 to 8 pounds in the first year, but are only about 10% of what would be suggested by a doctor. The scanner data allows detailed analysis of changes by food type. In the first month after diagnosis, healthy foods increase and unhealthy foods decrease. However, only the decreases in unhealthy food persist. Changes are most pronounced on large, unhealthy, food categories. Those individuals whose pre-diagnosis diet is concentrated in one or a few foods groups show bigger subsequent calorie reductions, with these reductions primarily occuring in these largest food groups. I suggest the facts may be consistent with a psychological framework in which rule-based behavior change is more successful. I compare the results to a policy of taxes or subsidies.

21669
David Neumark, Ian Burn, Patrick Button
Is it Harder for Older Workers to Find Jobs? New and Improved Evidence from a Field Experiment

We design and implement a large-scale field experiment — a resume correspondence study — to address a number of potential limitations of existing field experiments testing for age discrimination, which may bias their results. One limitation that may bias these studies towards finding discrimination is the practice of giving older and younger applicants similar experience in the job to which they are applying, to make them "otherwise comparable." The second limitation arises because greater unobserved differences in human capital investment of older applicants may bias existing field experiments against finding age discrimination. We also study ages closer to retirement than in past studies, and use a richer set of job profiles for older workers to test for differences associated with transitions to less demanding jobs ("bridge jobs") at older ages. Based on evidence from over 40,000 job applications, we find robust evidence of age discrimination in hiring against older women. But we find that there is considerably less evidence of age discrimination against men after correcting for the potential biases this study addresses.

21818
Erzo F. P. Luttmer, Andrew Samwick
The Welfare Cost of Perceived Policy Uncertainty: Evidence from Social Security

Policy uncertainty can reduce individual welfare when individuals have limited opportunities to mitigate or insure against consumption fluctuations induced by the policy uncertainty. For this reason, policy uncertainty surrounding future Social Security benefits may have important welfare costs. We field an original survey to measure the degree of policy uncertainty in Social Security and to estimate the impact of this uncertainty on individual welfare. On average, our survey respondents expect to receive only about 60 percent of the benefits they are supposed to get under current law. We document the wide variation around the expectation for most respondents and the heterogeneity in the perceived distributions of future benefits across respondents. This uncertainty has real costs. Our central estimates show that on average individuals would be willing to forego around 6 percent of the benefits they are supposed to get under current law to remove the policy uncertainty associated with their future benefits. This translates to a risk premium from policy uncertainty equal to 10 percent of expected benefits.

21851
Alexander Gelber, Timothy Moore, Alexander Strand
The Effect of Disability Insurance Payments on Beneficiaries' Earnings

A crucial issue in studying social insurance programs is whether they affect work decisions through income or substitution effects. We examine this in the context of U.S. Social Security Disability Insurance (DI), one of the largest social insurance programs in the U.S. The formula linking DI payments to past earnings has discontinuous changes in the marginal replacement rate that allow us to use a regression kink design to estimate the effect of payment size on earnings. Using Social Security Administration data on all new DI beneficia-

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ries from 2001 to 2007, we document a robust income effect of DI payments on earnings. Our preferred estimate is that an increase in DI payments of one dollar causes an average decrease in beneficiaries' earnings of twenty cents. This suggests that the income effect represents an important factor in driving DI-induced reductions in earnings.

21854
Donald Keim, Olivia Mitchell
Simplifying Choices in Defined Contribution Retirement Plan Design

In view of the growth and popularity of defined contribution pensions, along with the government's growing attention to retirement plan costs and investment choices provided, it is important to understand how people select their retirement plan investments. This paper shows how employees in a large firm altered their fund allocations when the employer streamlined its pension fund menu and deleted nearly half of the offered funds. Using administrative data, we examine the changes in plan participant investment choices that resulted from the streamlining and how these changes might affect participants' eventual retirement wellbeing. We show that streamlined participants' new allocations exhibited significantly lower within-fund turnover rates and expense ratios, and we estimate this could lead to aggregate savings for these participants over a 20-year period of $20.2M, or in excess of $9,400 per participant. Moreover, after the reform, streamlined participants' portfolios held significantly less equity and exhibited significantly lower risks by way of reduced exposures to most systematic risk factors, compared to their non-streamlined counterparts.

21855
David C. Chan, Jr.
Uncertainty, Tacit Knowledge, and Practice Variation: Evidence from Physicians in Training

Substantial practice variation across physicians for seemingly similar patients is an unresolved puzzle of great interest to economists and policy makers. This paper studies physicians in training to explore the behavioral foundations of practice variation. A discontinuity in the formation of teams reveals a large role for relative experience in the size of practice variation. Among the same physician trainees, convergence occurs in services driven by specialists, where there is arguably more explicit knowledge, but not on the general medicine service. Similarly, rich physician characteristics correlated with preferences and ability explain little if any variation.

21894
Victor Lavy, Analia Schlosser, Adi Shany
Out of Africa: Human Capital Consequences of In Utero Conditions

This paper investigates the effects of environmental conditions during pregnancy on later life outcomes using quasi-experimental variation created by the immigration of Ethiopian Jews to Israel in May 24th 1991. Children in utero prior to immigration faced dramatic differences in medical care technologies, prenatal conditions, and prenatal care at the move from Ethiopia to Israel. One of the major differences was adequacy of micronutrient supplements, particularly iodine, iron and folic acid. We find that children exposed in an earlier stage of the pregnancy to better environmental conditions in utero have two decades later higher educational attainment (lower repetition and dropout rates and higher Baccalaureate rate) and higher education quality (achieve a higher proficiency level in their Baccalaureate diploma). The average treatment effect we estimate is driven mainly by a strong effect on girls. We find however, no effect on birth weight or mortality for girls.

NBER

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