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Changing Content for NBER *Reporter*

This issue of the NBER *Reporter* breaks from the past with regard to coverage of NBER Program meetings, Working Group meetings, and other Conferences. Historically, the *Reporter* included a list of the papers presented at each of these NBER gatherings, along with a summary of each paper. Beginning with this issue, the *Reporter* lists the papers presented and their authors, and provides readers with a link to a page on the NBER website that includes the paper's abstract, the name of the discussant if there was one at the NBER meeting, and the research paper. This new format for the *Reporter* makes it easier for readers to access the full-length research papers presented at NBER meetings and it recognizes the increasingly prominent role of electronic archives for research publications of all types. We hope that you enjoy the new *Reporter* format..

Health Economics

Michael Grossman *

The NBER's Program in Health Economics focuses on the determinants of health. Two areas of particular interest are the economics of obesity and the economics of substance use. The program members' research has been widely supported by federal research grants and by private foundations.

The Economics of Obesity

Genetic factors cannot account for the rapid increase in obesity since 1980 — these factors change slowly over long periods of time. Therefore, economists have a role to play in examining the determinants and consequences of this trend, even though the factors at work are complex, and the policy prescriptions are by no means straightforward. Childhood obesity is especially detrimental, because its effects carry over into adulthood. Shin Yi-Chou, Inas Rashad, and I estimate the effects of fast-food restaurant advertising on television on obesity among children and adolescents.[1] Our results suggest that a ban on these advertisements would reduce the number of obese children ages 3–11 in a fixed population by 18 percent and would reduce the number of obese adolescents ages 12–18 by 14 percent. Eliminating the tax deductibility of this type of advertising would produce smaller declines of between 5 and 7 percent in these outcomes, but would impose lower costs on children and adults who consume fast food in moderation because positive information about restaurants that supply this type of food would not be completely banned from television.

Robert Kaestner and Xin Xu examine the association between girls' participation in high school sports and the physical activity, weight, and body mass and body composition of adolescent females

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during the 1970s when girls' sports participation was dramatically increasing as a result of Title IX of the Educational Amendments of 1972.[2] Title IX requires that programs and activities that receive funds from the Department of Education must operate in a non-discriminatory manner. Kaestner and Xu find that increases in girls' participation in high school sports, a proxy for expanded athletic opportunities for adolescent females, are associated with an increase in physical activity and an improvement in weight and body mass among girls. In contrast, adolescent boys experienced a decline in physical activity and an increase in weight and body mass during the period when girls' athletic opportunities were expanding. Taken together, these results strongly suggest that Title IX and the increase in athletic opportunities among adolescent females it engendered had a beneficial effect on the health of adolescent girls.

Rusty Tchernis, Daniel Millimet, and Muna Husain provide conflicting evidence with regard to the effectiveness of school nutrition programs in combating childhood obesity.[3] They find that the School Breakfast Program is a valuable tool in the current battle against obesity. On the other hand, the National School Lunch Program exacerbates the current epidemic.

Turning to one consequence of obesity in adulthood, Erdal Tekin and Roy Wada consider whether the obese pay a penalty in terms of lower wage rates.[4] They point out that previous research in this area relied on body weight or body mass index (BMI, defined as weight in kilograms divided by height in meters squared[5]) for measuring obesity despite the growing agreement in the medical literature that they represent misleading measures of obesity because of their inability to distinguish between body fat and fat-free body mass. Using these two variables, they find that increased body fat is unambiguously associated with decreased wages for both males and females. This result is in contrast to the mixed and sometimes inconsistent results from the previous research using BMI. They also find new evidence indicating that a higher level of fat-free body mass is consistently associated with increased hourly wages. The body composition measures they employ represent significant improvements over the previously used measures because they allow

for the effects of fat and fat free components of body composition to be separately identified.

Clearly, obesity carries a high personal cost. But does it carry a high enough social cost to make it a concern of public policy? The case for government intervention in the food choices of its citizens is weakened if fully informed consumers are taking account of all the costs of their food choices, and strengthened if the obese do not pay for their higher medical expenditures through differential payments for health care and health insurance, and if body weight decisions are responsive to the incidence of the medical care costs associated with obesity.

Several program members have examined the effects of weight on medical care costs and the impacts of insurance on weight. Focusing on adolescents, Alan C. Monheit, Jessica P. Vistnes, and Jeannette A. Rogowski report that in private group health plans, obese girls have expected health plan payouts that are approximately $1,000 greater than females of normal weight.[6] They find no differences for obese boys in these plans or for obese girls or boys with public (Medicaid or the State Child Insurance Program) coverage.

Jay Bhattacharya and colleagues consider in detail the health care cost externality associated with adult obesity.[7] They estimate that the obese impose an external cost of approximately $150 on the non-obese.[8] Bhattacharya and M. Kate Bundorf find, however, that the incremental healthcare costs associated with obesity are passed on to obese workers with employer-sponsored health insurance in the form of lower cash wages.[9] Obese workers in firms without employer-sponsored insurance do not have a wage offset relative to their non-obese counterparts. Their estimate of the wage offset exceeds estimates of the expected incremental health care costs of these individuals for obese women, but not for men.[10]

None of the studies just summarized contains an empirical estimate of the effect of health insurance on weight outcomes. Bhattacharya, Bundorf, Noemi Pace, and Sood provide this missing piece by showing that both privately insured individuals and those with Medicaid coverage have a larger body mass index and a higher probability of being obese than persons with no health insurance.[11] Rashad and Sara Markowitz report similar results for BMI but not for the probability of being obese.[12] Both studies take account of the potential endogeneity of health insurance.

The Economics of Substance Use

Program members have been studying the determinants and consequences of cigarette smoking, excessive alcohol use, and consumption of such illegal drugs as marijuana, cocaine, and heroin for nearly three decades. Much of this research has focused on their responsiveness to price. My time-series study of trends in cigarette smoking, binge alcohol drinking (consumption of five or more drinks in a row on at least one day in the past two weeks), and marijuana use by high school seniors sets the stage for the studies to be discussed.[13] I show that changes in price can explain a good deal of the observed changes in these behaviors for the period from 1975 through 2003. For example, the 70 percent increase in the real price of cigarettes since 1997 attributable to the Medicaid Master Settlement Agreement explains almost all of the 12 percentage point reduction in the cigarette smoking participation rate since that year. The 7 percent increase in the real price of beer between 1990 and 1992 due to the Federal excise tax hike on that beverage in 1991 accounts for almost 90 percent of the 4 percentage point decline in binge drinking in the period at issue. The wide swings in the real price of marijuana explain 70 percent of the reduction in participation from 1975 to 1992, 60 percent of the subsequent growth to 1997, and almost 60 percent of the decline since that year.

Cigarettes

In two related studies, Donald Kenkel, Philip DeCicca, Alan Mathios, and colleagues question the consensus in the literature concerning the inverse relationship between the price of cigarettes and various measures of cigarette consumption by teenagers and young adults. Controlling for a direct measure of state- and time-specific anti-smoking attitudes of adults, DeCicca, Kenkel, Mathios, Yoon-Jeong Shin, and Jae-Young Lim show the effect of price on youth smoking participation.[14] Cigarette consumption, conditional on positive participation, continues to be inversely related to price. In the second study, DeCicca, Kenkel, and Mathios find no evidence that higher cigarette taxes prevent smoking initiation but some evidence that higher taxes are associated with increased cessation.[15]

On the other hand, using repeat cross-sections for the period from 1991 through 2005 — a much longer period than those that Kenkel and colleagues considered — Christopher Carpenter and Philip J. Cook report that the large state tobacco tax increases of the past 15 years were associated with significant reductions in smoking participation by youths.[16] This result emerges even after the anti-smoking sentiment measure used by Kenkel and colleagues is held constant. This appears to be an area in which a good deal of additional research would be fruitful.

Turning to other determinants of cigarette smoking and determinants of outcomes related to that behavior, Henry Saffer, Melanie Wakefield, and Yvonne Terry-McElrath examine the effect of nicotine replacement therapy (NRT) advertising on youth smoking.[17] They find that an increase in this type of advertising has no impact on youth smoking participation but causes the number of cigarettes smoked per day by youths who smoke to increase. They provide a moral hazard explanation of this result: NRT advertising increases the expectation that cessation is relatively easy. They estimate that a ban

on NRT advertising is equivalent to a 10 percent increase in the price of cigarettes.

Sudden Infant Death Syndrome (SIDS) is a leading cause of mortality among infants between the ages of one and twelve months. Prenatal maternal smoking and postnatal environmental smoke have been identified as strong risk factors for SIDS. Given these links, Markowitz examines the relationship between cigarette prices, taxes, and clean indoor air laws and the incidence of SIDS.[18] She finds that a 10 percent increase in the price of cigarettes lowers SIDS deaths by approximately 7 percent. Stronger restrictions on smoking in restaurants and child care centers are also effective in reducing SIDS deaths.

Alcohol

Program members have focused on the determinants of excessive consumption and on the effects of alcohol taxes or prices and other regulations on violent behavior and on risky sexual behavior by teenagers and young adults. Dhaval Dave and Saffer consider the effects of alcohol taxes on chronic alcohol consumption (consumption of more than two drinks a day on average) among older adults ages 55 and over.[19] They find that the elasticity of this outcome with respect to the real beer tax is approximately -0.3. Their study is the first to include a measure of risk preference in the demand function for alcohol and to allow this measure to interact with the tax effect. Since the tax elasticity is similar across both risk-averse and risk-tolerant individuals, tax policies are equally effective deterrents among those who have a higher (the risk tolerant) versus a lower (the risk averse) propensity for excessive consumption.

Given the link between excessive alcohol consumption and risky sexual practices, Kaestner, Markowitz, and I explore the effects of alcohol taxes and statutes pertaining to drunk driving on a direct consequence of these practices: the incidence of sexually transmitted diseases (STDs).[20] Our results indicate that higher state excise tax rates on beer (the most popular alcoholic beverage among youths and young adults) are associated with lower gonorrhea incidence rates for males ages 15–19 and 20–24. These higher taxes also are associated with lower AIDs rates for males ages 20–29. Zero tolerance laws, which typically set the maximum blood alcohol percentage at 0.02 for underage drinkers, reduce gonorrhea rates among 15–19 year-old boys.

Carpenter and Carlos Dobkin estimate the effect of alcohol consumption on mortality using the minimum drinking age in a regression discontinuity design.[21] They find that granting legal access to alcohol at age 21 leads to large and immediate increases in several measures of alcohol consumption, including a 21 percent increase in the number of days on which people drink. This increase in alcohol consumption results in a discrete 9 percent increase in the mortality rate at age 21. The overall increase in deaths is attributable primarily to a 14 percent increase in deaths due to motor vehicle accidents, a 30 percent increase in alcohol overdoses and alcohol-related deaths, and a 15 percent increase in suicides. A combination of the reduced-form estimates reveals that a 1 percent increase in the number of days a young adult drinks or drinks heavily results in a .4 percent increase in total mortality. Given that mortality due to external causes peaks at about age 21, and that young adults report very high levels of alcohol consumption, their results suggest that public policy interventions to reduce youth drinking can have substantial public health benefits.

Illegal Drugs

Most estimates of demand functions for illegal drugs combine household surveys with year- and city-specific cocaine and heroin prices contained in the System to Retrieve Information from Drug Evidence (STRIDE) maintained by the Drug Enforcement Administration of the U.S. Department of Justice.[22] The household surveys contain imperfect measures of chronic drug use and obviously exclude certain groups of heavy users such as the homeless and criminals. Therefore, Dhaval Dave employs rates of hospital emergency room mentions for cocaine and heroin and the percentage of arrestees testing positive for each substance based on urine tests to fit demand functions for heavy users. In the emergency room study, he finds that the elasticity of the probability of a cocaine mention with respect to own-price is a negative 0.27, and the corresponding elasticity of the probability of a heroin mention is a negative 0.1.[23] The probability of any drug related episode, which captures polydrug usage, is also significantly negatively related to both cocaine and heroin prices. Cross-price effects are consistent with a complementary relationship between cocaine and heroin. The arrestee study supports these results and contains own-price elasticities of a negative 0.3 for cocaine participation and a negative 0.2 for heroin participation.[24] These results imply that higher penalties, more stringent enforcement, and supply reduction, all of which raise illegal drug prices, can discourage participation by heavy users.

Illegal drug use by pregnant women can have serious consequences for the health of their infants. Hope Corman, Kelly Noonan, Nancy E. Reichman, and Dave shed a considerable amount of light on the magnitude of this effect in a large urban sample that over-represents unmarried, young, minority women.[25] They estimate the effect of prenatal drug use both on the probability of low birth weight (less than 2,500 grams) — a marker for poor health — and on a direct measure of infant health.

Corman, Noonan, Reichman, and Dave find that prenatal drug use increases the probability of low birthweight by between 4 and 6 percentage points and that it increases the probability of an abnormal infant health condition by between 7 and 12 percentage points. The effect of maternal cigarette

smoking during pregnancy on low birthweight is slightly larger than that of drug use. In contrast, smoking is not significantly related to abnormal infant conditions. These results may reflect that low birth weight is a marker for poor infant health, whereas abnormal conditions are a direct measure. In a companion study, the authors find that the demand for illicit drugs among pregnant women is fairly elastic with respect to the price of cocaine.[26] Taken together, the two studies suggest that drug enforcement is a potentially promising tool for improving birth outcomes.

Other Determinants of Health

Schooling

Many studies suggest that years of formal schooling completed is the most important correlate of a variety of measures of good health. The causal interpretation of this finding has been difficult, however, on the grounds that there may be omitted "third variables" or reverse causality. Shin-Yi Chou, Jin-Tan Liu, Ted Joyce, and I exploit a natural experiment to estimate the causal impact of parental education on child health in Taiwan.[27] In 1968, the Taiwanese government extended compulsory education from six to nine years. From that year through 1973, the government opened 254 new junior high schools, an 80 percent increase, at a differential rate among regions. Within each region, we exploit variations across cohorts in new junior high school openings to construct an instrument for schooling. We use this instrument to estimate the causal effects of mother's or father's schooling on the incidence of low birthweight and mortality of infants born to women in the treatment and control groups, or to the wives of men in these groups. Parents' schooling, especially mother's schooling, does indeed cause favorable infant health outcomes. The increase in schooling associated with the reform resulted in a decline in infant mortality of approximately 11 percent.

David M. Cutler and Adriana Lleras-Muney provide evidence of mechanisms via which schooling affects health.[28] The obvious economic explanations — education is related to income or occupational choice — explain only a part of the education effect. In terms of the relation between education and various health risk factors — smoking drinking, diet, exercise, use of illegal drugs, household safety, and care for hypertension and diabetes — Cutler and Lleras-Muney show that the better educated have healthier behaviors along virtually every margin. They also suggest and provide tentative evidence that increasing levels of education lead to different thinking and decision-making patterns. The monetary value of the return to education in terms of health is perhaps half of the return to education on earnings, so policies that affect educational attainment could have a large effect on population health.

In a study with Seema Jayachandran, Lleras-Muney exploits a sudden drop in maternal mortality risk in Sri Lanka between 1946 and 1953, which created a sharp increase in life expectancy for school-age girls, to obtain consistent estimates of the effects of an increase in life expectancy on schooling.[29] This development allows them to use boys as a control group. They find that the 70 percent reduction in maternal mortality risk over the sample period increased female life expectancy at age 15 by 4.1 percent, female literacy by 2.5 percent, and female years of education by 4.0 percent. While their results suggest reverse causality from life expectancy to schooling in the developing world, they probably do not translate to the United States and other developed countries in which maternal mortality is extremely rare.

National Health Insurance

There is enormous interest in the impacts of the introduction of National Health Insurance (NHI) on health outcomes, but the very nature of this intervention, whereby entire nations are covered universally, makes it difficult to estimate the health impacts of the change. The experience of Taiwan, however, provides a natural experiment that Shin-Yi Chou, Jin-Tan Liu, and I exploit.[30] Prior to the introduction of NHI in March 1995, government workers possessed health insurance policies that covered prenatal medical care, newborn deliveries, neonatal care, and medical care services received by their children beyond the first month of life. Private sector industrial workers and farmers lacked this coverage. All households received coverage for the services just mentioned as of March 1995. This creates treatment and control groups. The former group consists of non-government employed households, while the latter group consists of government-employed households.

We focus on postneonatal mortality. We do not observe negative and significant effects for private workers, but we do observe negative and significant effects for farmers. In the sample as a whole, we find that the introduction of NHI lowered the postneonatal mortality rate of infants born to the wives of farmers by 0.48 deaths per thousand infants who survived the neonatal period. This is a reduction of 11 percent relative to the mean in the pre-NHI period of 4.26 deaths per thousand survivors. The impacts of NHI on farm households are larger for less educated mothers, for farmers who live in rural areas, and for farm households with a premature or low-weight birth. In the case of prematurity, the postneonatal mortality rate is lowered by six deaths per thousand survivors or by 36 percent relative to the pre-NHI mean of 16.71. Our results imply that lack of health insurance may be a major contributor to poor infant health outcomes in the rural sector of developing economies. They also suggest that the provision of health insurance is a more effective policy tool if it is accompanied by the introduction and use of advanced medical technologies.

June E. O'Neill and Dave M. O'Neill address the NHI issue by comparing Canada's publicly funded, single-

payer health care system to the multi-payer heavily private U.S. system.[31] They argue that differences between the United States and Canada in infant mortality and life expectancy — the two indicators most commonly used as evidence of better health outcomes in Canada — cannot be attributed to differences in the effectiveness of the two health care systems because they are strongly influenced by differences in cultural and behavioral factors, such as the relatively high U.S. incidence of obesity and of accidents and homicides. Direct measures of the effectiveness of medical care show that five-year relative survival rates for individuals diagnosed with various types of cancer are higher in the United States than in Canada, as are infant survival rates of low-birth-weight babies. These successes are consistent with the greater U.S. availability of high level technology, higher rates of screening for cancers, and higher treatment rates of the chronically ill. The need to ration when care is delivered "free" ultimately leads to long waits. The health-income gradient is at least as prominent in Canada as it is in the United States.

Focusing on the United States, Cutler, Dobkin, and Nicole Maestas exploit the sharp change in health insurance characteristics of the population that occurs at age 65, because most people become eligible for Medicare, to investigate whether this change matters for health.[32] They address this issue by examining differences in mortality for severely ill people who were admitted to California hospitals just before and just after their 65th birthday. They estimate a nearly 1 percentage point drop in 7-day mortality for patients at age 65, implying that Medicare eligibility reduces the death rate of this severely ill patient group by 20 percent. The mortality gap persists for at least two years following the initial hospital admission.

A potential unintended consequence of the acquisition of Medicare by the previously uninsured is that it may induce ex ante moral hazard that takes the form of a reduction in prevention activities. Dave and Kaestner assess the importance of this phenomenon in the context of an estimation strategy that allows for the possibility that health insurance has both a direct (ex ante moral hazard) and indirect effect on health behaviors.[33] The indirect effect works through changes in health promotion information and the probability of illness that may be a byproduct of insurance-induced greater contact with medical professionals. They identify these two effects and in doing so identify the pure ex ante moral hazard effect. They find limited evidence that obtaining health insurance reduces prevention and increases unhealthy behaviors among elderly persons. There is more robust evidence that physician counseling is successful in changing health behaviors.

Unemployment

U.S. citizens are experiencing a number of negative consequences of the current recession, but an increase in the risk of death from acute myocardial infarction (AMI) may not be one of them. Christopher Ruhm finds that a 1 percentage point reduction in unemployment is predicted to raise AMI mortality by 1.3 percent, with a larger increase in relative risk for 20–44 year olds than older adults, particularly if the economic upturn is sustained.[34] Nevertheless, the much higher absolute AMI fatality rate of senior citizens implies that they account for most of the additional deaths.

These results suggest the importance of factors like air pollution and traffic congestion that increase with economic activity, are linked to coronary heart disease, and may have particularly strong effects on vulnerable segments of the population, such as the frail elderly. For the younger age group, the longer working hours that accompany an expansion could make it more difficult for individuals to take the time to exercise or eat properly. Inadequate sleep is associated with a variety of health risks, and extra hours could reduce sleep. Job stress may rise during economic expansions and may be exacerbated by production speed-ups and inexperienced workers. Ruhm emphasizes that the findings do not imply that recessions should be encouraged. Instead, they highlight that the effects of economic growth are not uniformly beneficial and that physicians may need to identify patients at higher risk when the economy strengthens.

Reproductive Behavior, Maternal Nutrition, and Infant Health Outcomes

The program has had a long-standing interest in the impacts of a variety of determinants of infant health outcomes. Joyce and his colleagues have made very important contributions in this area over a long period of time and have continued their efforts since my last program report in the spring of 2004. In one set of studies, Joyce, Kaestner, and Silvie Colman focus on the reproductive behavior of minors.[35] Clearly, this is a very important group to consider because their infants have worse health outcomes than those of other groups. Joyce and colleagues are particularly concerned with the effects of parental involvement laws, which require parental involvement in a minor's decision to terminate a pregnancy. Previous research has found that minors' abortion rates fall following the enactment of a notification law and that birth rates do not rise — a "win-win" situation. Joyce and colleagues point out that this research has serious methodological limitations. It is not able to measure cross-state travel, and it misclassifies exposure. With regard to the latter issue, three-quarters of minors who conceive at age 17 give birth at age 18. This creates a bias toward finding no impact on births. In addition, minors can delay an abortion until they reach age 18.

Joyce and colleagues remedy these deficiencies by using data for Texas with exact dates (month, day, and year) of conception, abortion, and birth before

and after the enactment of a parental notification law on January 1, 2000. They find that the abortion rate of 17-year-olds at conception fell by 16 percent relative to those of 18-year-olds because of the law. In addition, the birth rate of 17-year-olds at conception rose by 4 percent. Finally, abortions rose by approximately 30 percent among teens who did not reach the age of 18 until after the first trimester of pregnancy. These second-trimester abortions involve greater health risks than first-trimester abortions.

Recent analyses differ on how effective the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) is at improving infant health. Joyce, Racine, and Cristina Yunzal-Butler use data from nine states that participate in the Pregnancy Nutrition Surveillance System to address limitations in previous work.[36] With information on the mother's timing of WIC enrollment, they test whether greater exposure to WIC is associated with less smoking, improved weight gain during pregnancy, better birth outcomes, and greater likelihood of breastfeeding. Their results suggest that much of the often-reported association between WIC and lower rates of preterm birth is likely spurious, the result of gestational age bias. They find modest effects of WIC on fetal growth, inconsistent associations between WIC and smoking, limited associations with gestational weight gain, and some relationship with breastfeeding. A WIC effect exists, but on fewer margins and with less impact than has been claimed by policy analysts and advocates.

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2 *R. Kaestner and X. Xu, "Effects of Title IX and Sports Participation on Girls' Physical Activity and Weight," NBER Working Paper No. 12113, March 2006, and* The Economics of Obesity, *Volume 17 of* Advances in Health Economics and Health Services Research, *K. Bolin and J. Cawley, eds., Amsterdam: JAI an imprint of Elsevier Ltd., 2007, pp. 79–111.*

3 *D.L. Millimet, R. Tchernis, and M. Husain, "School Nutrition Programs and the Incidence of Childhood Obesity," NBER Working Paper No. 14297, September 2008.*

4 *R. Wada and E. Tekin, "Body Composition and Wages," NBER Working No. 13595, November 2007.*

5 *Persons 18 years of age and older are classified as obese if their BMI equals or exceeds 30. Persons under that age are classified as obese if their BMI is at or above the 95th percentile based on age-and gender specific growth charts for children and adolescents at a fixed point in time.*

6 *A.C. Monheit, J.P. Vistnes, and J.A. Rogowski, "Overweight in Adolescents: Implications for Health Expenditures," NBER Working Paper No. 13488, October 2007, and* Economics and Human Biology, *forthcoming.*

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10 *J. Bhattacharya and M. Packalen, "The Other Ex-Ante Moral Hazard in Health," NBER Working Paper No. 13863, March 2008.*

11 *J. Bhattacharya, M.K. Bundorf, N. Pace, and N. Sood, "Does Health Insurance Make You Fat?" presented at the NBER Conference on Economic Aspects of Obesity, Louisiana State University, November 10–11, 2008.*

12 *I. Rashad and S. Markowitz, "Incentives in Obesity and Health Insurance," NBER Working Paper No. 13113, May 2007.*

13 *M. Grossman, "Individual Behaviors and Substance Use: The Role of Price," NBER Working Paper No. 10948, December 2004, and* Substance Use: Individual Behavior, Social Interactions, Markets and Politics, *Volume 15 of* Advances in Health Economics and Health Services Research, *B. Lindgren and M. Grossman, eds., Amsterdam: JAI an imprint of Elsevier Ltd., 2005, pp. 15–39.*

14 *P. DeCicca, D.S. Kenkel, A.D. Mathios, Y.-J. Sin, and J.-Y. Lim, "Youth Smoking, Cigarette Prices, and Anti-Smoking Sentiment," NBER Working Paper No. 12458, August 2006, and* Health Economics, *17 (6) (June 2008), pp. 733–49.*

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17 *H. Saffer, M. Wakefield, and Y. Terry-McElrath, "The Effect of Nicotine Replacement Therapy Advertising on Youth Smoking," NBER Working Paper No. 12964, March 2007.*

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Research Summaries

Electricity Pricing that Reflects Its Real-Time Cost

Severin Borenstein*

Long before U.S. electricity restructuring began in the 1990s there was a recognition that the marginal cost of producing electricity could change significantly hour to hour. Combined with the high cost of storing electricity, this meant that the true opportunity cost of consuming electricity also would vary constantly. For many decades economists have argued that retail electricity prices should fluctuate accordingly — this is known as real-time pricing (RTP) — but the technology to meter hourly consumption and to communicate fluctuating prices was quite costly.

In the last half of the twentieth century, the industry created a system meant to approximate RTP with standard technology: "time-of-use" prices that varied systematically by time of day and day of the week, usually with a higher price Monday through Friday during business hours and a lower price at all other times. The two prices (or sometimes three, with an added "shoulder" pricing period) were set months in advance, however, and did not change to reflect system demand/supply balance on a daily basis. Because of the cost of even this simple pricing and metering scheme, it was used only for large commercial and industrial customers.

In a regulatory environment, two additional factors worked against adoption of RTP. Under regulation, the utility nearly always charges prices that are based on some notion of average cost, including the accounting amortization of long-term capital expenditures. Such an approach is targeted at cost recovery, not efficient pricing. Also, regulated utilities may be less likely to appreciate one of the main attractions of RTP, the effect it has in shaving demand peaks and reducing the need for capital investment. If regulators allow utilities to earn generous returns on investment, or if the utility management simply wants to grow the company, a pricing strategy that constrains new capital investment is unlikely to be popular with managers.

It is not that utilities did not understand or calculate their marginal cost. In fact, engineers tasked with minimizing production costs were constantly calculating "system lambda," the value of the production constraint, which corresponds directly to economic marginal cost. They needed this information in order to choose among different production resources. The information was just not used on the consumption side.

As metering technology improved, a few utilities began to experiment with RTP. The pioneer and still a leader in this regard is Georgia Power, a company that was, and remains, a traditional regulated utility. GP introduced its first RTP program in 1991 for large industrial customers. By 2000, nearly one-third of its entire electricity demand was on RTP.

Wholesale electricity markets were deregulated in many parts of the United States in the late 1990s. The idea was that electricity generation could be a competitive industry with many generators vying to sell their output into a common power market. The underlying economic model for this market, however, required that prices occasionally rise to well above the marginal cost of producing most units of output in order for firms to earn operating profits on infra-marginal units, operating profits that allowed the firm to cover its capital cost, at least in expectation. In the simple framework of a constant marginal cost of each generator up to its capacity, this meant that the market had to sometimes clear "on the demand side." That is, high prices would occur at times of high demand or reduced supply, and those high prices would cause quantities demanded to decline until they were in line with system capacity. Such price-responsive demand would constrain prices from jumping too high, whether the tight market was caused by a true supply shortage or an artificial shortage caused by some firms exercising market power. What went largely unnoticed at the time was that the technology and market organization to enable RTP was not in place in any of the markets headed towards deregulation. My own pre-deregulation work with Jim Bushnell, which forecast market power problems in deregulated electricity markets, just assumed that there would be some degree of real-time price response.[1]

When deregulated markets launched in California, Pennsylvania-New Jersey-Maryland, and New England in the late 1990s, retail customers could choose among retail providers who were buying power out of the wholesale power market. Since electricity is a homogeneous good delivered over a common-carrier infrastructure of transmission and distribution wires, there was no ability to dif-

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ferentiate the product sold. In nearly all cases, the final delivery and metering of usage was also left to the still-regulated utility that was providing transmission and distribution services. The centralization of the metering service meant that even if a retailer wanted to offer new time-varying retail pricing structures it was difficult to actually do so.

Still, because these markets were in a period of excess capacity, prices remained low and steady at first, with the primary complaint coming from producers who argued that prices were too low to justify new investment. That changed dramatically in summer 2000 with the onset of the California electricity crisis that brought extremely high prices and a few isolated blackouts when total supply from generation didn't keep up with demand.

The view of most economists who have studied the electricity crisis is that it resulted from a true scarcity in the wholesale market greatly exacerbated by the ability of a few sellers to exercise significant market power. This is supported by my own work with Jim Bushnell and Frank Wolak, and a paper by Paul Joskow and Ed Kahn.[2] Virtually all economists agree that the outcome was exacerbated by the inability of the demand side of the market to respond to real or artificial supply shortages. This realization prompted my research stream on real-time electricity pricing.

It was recognized during the crisis that RTP would lower prices during a time of supply shortage and would reduce the incentive of sellers to exercise market power by making demand more elastic, thus greatly reducing the wealth transfer from consumers to producers. The efficiency effects, however, were much less well understood. In a 2003 paper, Stephen Holland and I explored the short-run pricing and long-run investment inefficiencies that result when some or all customers face retail prices that do not vary with the wholesale market.[3] The theoretical analysis showed that the competitive equilibrium in a market without RTP could be quite inefficient. Not only would it fail to attain first-best pricing because prices would not move with marginal cost, it would not even result in the second-best (that is, least inefficient) non-varying retail price. The result would be inefficient investment levels, even given the constant-price constraint. We also showed that incentives for adoption of RTP, if there is some cost to adopt, such as metering, could be too weak or too strong from a societal point of view. Essentially, this is because the RTP adopters change the price and levels of investment for the non-adopters as well, an externality that can be positive or negative.

In the same paper, we used simulations to examine how large the societal gains from switching to RTP are likely to be.[4] These simulations used realistic production cost parameters to analyze how the long-run equilibrium investment and pricing would change as more customers moved from a time-invariant pricing plan to RTP. The result was significant and at the same time sobering.

It was significant in that the potential gains from RTP were almost certainly many times greater than the estimated costs of implementing such a program. In addition, the gains were largest for the first tranche of customers moved to RTP. In fact, with reasonable elasticity assumptions, it is likely that one-half of the possible total surplus gain could result from putting only one-third of all demand on RTP. This was important because the cost of implementing RTP at the residential level may be substantially higher — because each household consumes fairly little yet has nearly the same metering and billing costs as a large industrial customer — so an RTP program is likely to start with large industrial and commercial customers.

The results were sobering because as exciting as the prospect of "getting prices right" may be to economists, the potential gains were likely to be only 5 percent or less of the energy bill. And energy is generally only about half of the entire electricity bill, the remainder being transmission, distribution, and customer administration costs. It still amounted to hundreds of millions of dollars in California, but it wasn't going to fundamentally change the cost of supplying electricity. The reason for this is worth highlighting: in an electric system that must always stand ready to meet all demand at the retail price, the cost of a constant-price structure is the need to hold substantial capacity that is hardly ever used. But utilities optimize by building "peaker plants" for this purpose, capacity that has low capital cost and high operating cost. The social cost of holding idle capacity of this form turns out to be not as great as one might think. The analysis, however, does not capture some other potential benefits of RTP, including reduced vulnerability to supplier market power and greater resiliency in emergency situations, such as transmission outages, so the simulation estimates are only a piece of the gains.

While RTP holds potential for real efficiency gains, it is unfortunately often confused with energy efficiency programs that are designed to reduce overall consumption. RTP is even occasionally touted for having environmental benefits. While it might cause decreased consumption in some cases, there is no evidence that the effect on net would generally be in that direction. The effect of redistributing consumption from peak to off-peak periods could have positive or negative environmental effects. Stephen Holland and Erin Mansur's work on the environmental effect of RTP shows that in many parts of the country where coal provides baseload power, smoothing demand is likely to increase most pollutants, including greenhouse gases, by redistributing more production to coal-fired generation.[5] They find, however, that California, which relies less on coal, is an exception where demand smoothing from RTP is likely to benefit the environment.

The industry and public policy debate about RTP in the years following the California electricity crisis brought out a broad range of producer and customer concerns about RTP. Many were easy to address. For instance, managers at regulated utilities worry that RTP would make it more difficult for them

to be assured they could earn revenues that cover their costs, but RTP can actually match revenues to utility costs better than the time-invariant price model.[6] But two concerns, in particular, merited further empirical study.

First, some customers would be winners and others losers with a switch to RTP. Those who consume disproportionate quantities at the most expensive times are being subsidized under time-invariant pricing and may be worse off if they cannot adjust their consumption substantially under RTP. Most energy managers in industrial and commercial customers seemed to think that their bills on average would rise significantly under RTP (even though total system costs would fall with the switch). Second, even customers who thought their consumption pattern was no more expensive to supply than the typical customer were still worried that their bills could be much more volatile under RTP. Some economists dismiss such concerns about variance and risk management within companies, but the effect is very real on company budgets and performance reviews of the managers responsible for electricity consumption.

I was able to study both of these topics using a confidential dataset of hourly consumption for 1142 large industrial and commercial customers in Northern California over a four-year period. In the paper on wealth transfers from RTP, I combined the consumption patterns of these customers with simulated and actual wholesale prices to examine how big the likely transfer would be.[7] The results showed that the transfers were likely to be smaller than one might think. Starting from the simple time-of-use pricing these customers already faced (three different preset prices for peak/shoulder/off-peak periods), and assuming no change in consumption pattern, more than 95 percent of customers would be likely to see their bills rise or fall by less than 10 percent. I then looked at how much the losers might mitigate this impact by responding to the price variation. Over the plausible range of short-run price elasticities, the effect is fairly modest: with no price-response, about 55 percent of these customers would see their bills rise under RTP (the winners are on average larger consumers than the losers), but with a short-run elasticity of -0.1, the share drops to 44 percent. The results made clear that extremely few customers would see disruptive changes in their electricity bills, but that there would be a significant number of small losers. The remainder of the paper discussed various strategies that attempt to compensate losers without distorting their marginal consumption incentives.

Using the same dataset, I studied bill volatility under RTP.[8] Bill volatility is caused by consumption volatility, price volatility, and the covariance of the two. In electricity, departures from average consumption quantity and average real-time price tend to be positively correlated, exacerbating the variance of bills. Using monthly billing periods, I calculated customer bills under time-invariant, time-of-use, and real-time pricing schemes. After adjusting for seasonal variation, which should be easy to anticipate, I found that the coefficient of variation of a customer's bill is on average nearly five time larger under RTP than under the time-of-use structure that they typically face. I then examine a simple hedging scheme in which the customer buys its expected consumption quantity (seasonally adjusted) for each hour of the month at the actuarially fair price for that period. This hedge incorporates no additional information that the customer is likely to have about its business activities during the month, so it is very likely that a customer could refine it further. Still, even this simple hedge eliminates about 90 percent of the excess bill volatility attributable to RTP, leaving bills about 30 percent more volatile than under time-of-use pricing. I also explored a somewhat more sophisticated strategy that utilizes over-hedging (buying forward more than 100 percent of expected quantity demanded) to compensate for the positive price/quantity correlation and showed that this approach can lower bill volatility to be about the same as under time-of-use pricing.

Over the last decade, real-time pricing has continued to attract attention and even some adoption. New programs have appeared in Chicago, New York, Florida, and elsewhere. For many years, resistance to adoption has rested on implementation costs, but technology advances have undermined those arguments. Nonetheless, as with many economically attractive ideas, public policy adoption requires first examining a number of issues, real and imagined, that fall outside the strict confines of economic efficiency. In my research, I have attempted to address both the questions of economic efficiency and the broader economic questions of risk and redistribution that are part of the policy process.

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Re-evaluating Learning

Esther Duflo*

Developing countries have rapidly increased access to primary school, but the quality of education has remained low. Many children are now in school, but they are hardly learning. In India, for example, a 2007 nationwide survey by Pratham[1], a large education non-profit, found that 97 percent of the of-age children are in primary school, but only 51 percent of third graders could read a simple first-grade paragraph, and only 33 percent could do simple subtraction. If developing countries are to attain meaningful universal primary education, they must improve the quality of education.

This is a formidable task: for starters, rising enrollment, unaccompanied by additional budget outlays, has increased pressure on available resources. Classes in the lower grades often are very large, and the children arrive with wide-ranging levels of preparedness. These large and heterogeneous classes can challenge pedagogy. The curricula, set nationally and often inherited in large part from the colonial period, are not adapted to local challenges and needs. Too often, they presuppose competencies that many of the first-generation learners do not have. Besides these challenges, teachers face lax incentives, so teacher motivation is low: many teachers do not come to school and even those who do come do not always teach.

What can be done to improve education quality in developing countries? My recent research suggests some answers to this question. My approach has centered on using randomized evaluations to identify the causal effects of promising education programs.

In a randomized evaluation, from the program's inception the researcher works in close collaboration with the practitioner. The program gets assigned randomly to part of the sample — the treatment group — which is compared to the rest, the comparison group. In recent years, there has been an explosion in research using randomized evaluations in development economics. Development economists have pioneered the use of research partnerships with non-governmental organizations (NGOs) or private companies. These partnerships often allow greater control over the research design and, increasingly often, input into the program design itself. Rachel Glennerster, Michael Kremer, and I[2] describe the various ways of incorporating random assignment in the evaluation design, and the practical challenges that go with it.

In "The Experimental Approach to Development Economics", Abhijit Banerjee and I[3] review the evolution of the use of randomization in development economics research. Much like earlier work in labor economics, health, and education, the experimental research in development economics started with concerns over the reliable identification of program effects in the face of complex and multiple channels of causality. The central difficulty that randomization seeks to address is selection bias. When program participants are not randomly selected, their outcomes may differ systematically from those of non-participants. This makes it difficult to attribute any differences observed between participants and non-participants to the program itself. For example, schools that receive better inputs also may differ systematically from the other schools in other ways, for example in pedagogy and teacher incentives. However, when the program is randomly assigned, these initial differences even out and selection bias disappears. Experiments allow researchers to vary one factor at a time by randomly assigning the program to part of the sample, and therefore they yield internally valid estimates of program effects.

Thus, in the mid-1990s, development economists started doing experiments to answer basic questions about the education production function:

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Does better access to inputs (textbooks, teachers) affect school outcomes (attendance, test scores) — and if so, by how much? The motivating theoretical framework was very simple, but the results were surprising. For example: Glewwe, Kremer, and Moulin[4] found that lowering the student-textbook ratio from 4 to 2 had no effect on average test scores. Banerjee, Jacob, and Kremer[5] found that halving the student-teacher ratio also had no effect on test scores. These negative results prompted new reflection on the barriers to education in poor countries: If simply providing inputs does not increase the quality of education in poor countries, then it must be necessary to change the organization of teaching in schools, both the pedagogy and the incentives faced by students and teachers. This led to a new round of field experiments motivated by the general question: Can changing the organization of teaching in schools affect education outcomes? For the most part, these more recent projects have varied more than one factor at a time in different experimental groups, making randomization a powerful tool for examining the role of incentives, spillovers, and other key questions in the economics of education.

I have contributed to this literature with four projects.

Remedying Education

One finding of Glewwe, Kremer, and Moulin[6] was that, while the average child did not benefit from textbooks, students who were already proficient did benefit. A possible explanation for this, the authors conclude, could be that the textbook (and the curriculum) was too advanced for the majority of the students. Motivated by such evidence, my research first examined programs that seek to teach students what they *can* learn, rather than what a centrally set curriculum says they *should* learn.

In the first of these projects Abhijit Banerjee, Shawn Cole, Leigh Linden, and I[7] evaluated a remedial education program in urban India. The nonprofit Pratham hired locals with some secondary education, trained them for two weeks, and deployed them to local schools as teacher's aides specializing in remedial instruction. The remedial curriculum targeted students in grades three and four who did not have first-grade math and reading competencies. These students were pulled out of the regular classroom and worked with the teacher's aide for half the four-hour school day. Test scores in this group increased by 0.6 standard deviations, a large effect.

The second project replicated this finding in a very different context. Abhijit Banerjee, Rukmini Banerji, Rachel Glennerster, and I[8] evaluated Read India, another remedial education program. Pratham gives rural volunteers (educated youth from the village) a week's training in its reading pedagogy and deploys them back to their villages to run after-school reading programs. We found that after a year, among students who could not read at baseline, those who participated in Read India were 60 percentage points more likely to be able to recognize letters than those in comparison villages. The findings already have affected policy: based on this demonstrated effectiveness, Pratham secured funding from the Gates and Hewlett foundation to extend the Read India to 100 districts, covering millions of children. And so, even when the instructor has no formal teacher's training, remedial education focusing on what children need to know to take advantage of the available inputs can be highly effective.

There are two main potential explanations for these results. First, the remedial instruction, by focusing on what students do not know rather than the inappropriate curriculum, allows them to learn more effectively. Second, the teachers hired by Pratham were particularly motivated. Because the remedial instruction was always delivered by the potentially more-motivated teacher, we cannot distinguish the relative importance of these two factors.

Yet disentangling the relative importance of these two mechanisms is key for effective policy design, because nothing constrains them *a priori* to be embodied in the same program. For example, many more marginalized children could be taught basic competencies if the regular teachers were trained and instructed to focus on them. Conversely, more motivated teachers could teach the standard curriculum to all the children, if motivation were the salient factor.

Reorganizing the Classroom

Thus, a third project, conducted in rural Kenya, was set up to assess the importance of the two factors; Pascaline Dupas, Michael Kremer, and I[9] designed the experiment. When Kenya introduced free primary education in 2003, class sizes exploded in the lower grades. At the beginning of the program, in 2005, the average first-grade class in the area where we worked was 83 students, and in 28 percent of the classes it was more than 100. The program provided funds, starting in the second term, to 140 schools, randomly selected out of 210 possibilities, to hire extra teachers on one-year renewable contracts. (The extra teachers were fully qualified but young and inexperienced, being recent teacher's college graduates.) In 121 of the 140 program schools, there was just one first-grade class. These classes were split into two sections. In 60 randomly selected schools, students were quasi-randomly assigned to sections; in the remaining 61, students were ranked by prior achievement (first-term grades) and the top and bottom halves were assigned to different sections. In all 121 schools, the teachers were randomly assigned to sections from a common pool of extra and regular teachers.

We compared test scores in 61 tracking schools and 60 non-tracking schools after 18 months and found that students in tracking schools scored 0.14 standard deviations higher on average, regardless of their initial score. This suggests that students benefit from being taught in more homogenous peer groups. We

argue that greater homogeneity allowed teachers to tailor their teaching to what the students did not know. We found, for example, that students assigned to the bottom section seemed to gain most in the easier competencies and least in the hardest competencies.

We also found, however, that compared to those assigned to regular teachers, students assigned to the extra teacher have significantly (0.18 standard deviation) higher test scores, both in tracking and non-tracking schools. There were other differences between these two groups — for example, students assigned to the extra teacher were more likely to always be taught by the same teacher, whereas the regular teachers often adopted a rotation system by which different teachers teach different subjects. Even so, the test-score difference does suggest that motivation is important. The young and inexperienced but highly motivated teacher seems to be more effective than several experienced but unmotivated teachers put together.

Thus, the findings suggest that both pedagogy and incentives matter — ability to adapt what is taught in the classroom to what the students can learn benefits everyone, but teacher motivation makes a difference as well. The findings also confirm that just increasing inputs, without any other changes, is not effective: students who were assigned to the regular teacher in non-tracking schools did not perform significantly better than students in comparison schools.

Restructuring Teacher Incentives

So, teacher motivation matters, but how can teachers be incentivized? One possibility is to reward teachers for improved test scores. But, as studies in the United States suggest, this can lead to teachers focusing on the proximal (rewarded) outcome, rather than the ultimate (policy target) outcome. In particular, teachers can focus on acing the test, rather than learning the curriculum. Glewee, Ilias, and Kremer[10] find, for example, that when teachers in Kenya were offered such rewards, test scores rose in the short term. Because the test-score gains did not persist, the authors suggest that the teachers may have been "teaching to the test."

Another possibility is to reward teacher effort directly — if it can be observed. In developing countries, there is a significant margin of improvement in one relatively easy-to-observe dimension of teacher effort, namely, the amount of time the teacher spends in front of the classroom. The Kenya tracking study also found that teachers who face strong incentives do come to school regularly: the teachers hired on short contracts were more likely to be in school during random checks than the regular teachers. It seems relatively easy to monitor teacher presence, so would penalizing chronic absence (or rewarding presence) improve teacher presence and learning?

A priori, it is not evident that direct attendance-based teacher incentives would improve learning. Teachers could always come to school but not teach: in the Kenya tracking study, only 54 percent of the regular teachers (compared to 84 percent of the extra teachers) in school on a given day were teaching in the classroom, the rest being in the teacher's room. And, in a five-country study, Chaudhury et al[11] found that 19 percent of teachers were absent and only half of those present actually were teaching at the time of the unannounced visit.

Thus, to address this empirical question, in a fourth project, Rema Hanna and I[12] evaluated the impact of direct, attendance-based incentives on teacher presence, and student learning. The NGO Seva Mandir runs single-teacher schools in remote rural Rajasthan, India. The teachers were given durable cameras with date and time functionality and asked to photograph themselves with the children at the beginning and at end of each school day. Attendance was determined based on the number of valid photographs and the teacher's pay was based on attendance. Not surprisingly, the teacher presence increased. Chronic absence fell from 40 percent to 20 percent. What's more, there is no evidence that when they were in school the teachers were less likely to teach or that they taught differently. With teaching time increased, test scores increased by 0.17 standard deviations. This suggests that direct, attendance-based incentives—applied systematically—can improve learning.

Re-empowering the Parents?

It may be more difficult, though, to apply such incentives on teachers already in government service. They are politically empowered and they are accustomed to lax enforcement of incentive structures. On paper, the teachers answer to the government which answers to the parents. Many international organizations, such the World Bank, have argued that one way to strengthen teacher incentives is to empower the parents and to get them involved in the schools. Parents, the argument goes, can monitor teachers better and they are more motivated to improve school quality than faraway government officials; increasing their awareness of poor school quality, through information, and empowering them to do something about it, by increasing their control of school resources, should lead to improvements in school quality.

A finding from the second project suggests caution. Alongside our evaluation of Read India, my co-authors Abhijit Banerjee, Rachel Glennerster, Rukmini Banerji, and I[13] also examined the impact of providing parents with information on learning levels and on the resources available to them to change their school. Despite days spent in villages conducting meetings, to get parents to effectively engage with the school system and teachers to change their behavior, the information and mobilization campaign had no effect. If confirmed in further research, this finding would suggest that, in the short run, governments should retain the responsibility of getting the schools to work for poor people.

Re-evaluating Learning—a Summing Up

Together, a series of randomized evaluations of education programs in developing countries have taught us something about how education in developing countries can be improved: focus teaching on skills students need to progress further; find ways to motivate teachers. Neither of these is necessarily an easy, ready-to-implement prescription. Much more work is needed to develop programs that can achieve these two objectives on a large enough scale, especially given the political economy of education in developing countries. While neither suggests plug-and-play prescriptions, they do give us ample direction about where to search.

What's more, these experiments have also taught us something about how to search, how we can learn about learning. Each experiment answers some questions and asks new ones; the next study builds on the previous one, progressively suggesting a model of education which is ready to be enriched over time.

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Teen and Non-Marital Childbearing

Melissa S. Kearney*

There is a widespread consensus among the American public that rates of teen pregnancy and unintended pregnancies to young, unmarried women are too high. Approximately 30 percent of teenage girls in the United States become pregnant, and 20 percent give birth by age 20. In addition, half of all pregnancies in the United States are reported by the mother as unintended. More than one-third of these (1.1 million pregnancies in 2001) are to unmarried women in their twenties. Rates of teen pregnancy and unplanned pregnancy are higher among young unmarried women, lower income women, women with lower levels of education, and minority women.

The concern about rates of teen pregnancy and non-marital pregnancy is driven in large measure by the observed inferior outcomes for children born into disadvantaged situations — in particular, those born to young, unmarried mothers. In this research summary, I describe some of my work on the policy determinants of teen and non-marital childbearing and the socioeconomic differences in rates of teen childbearing and parental time investment in children.

Policy determinants of Teen and Non-marital Pregnancy

There are several commonly suggested policy approaches to reducing the level of teen and unintended pregnancies. One is increased access to contraception. As an initial matter, the term "unintended" as captured in surveys is fraught with measurement and interpretation issues, and it is not always clear what is meant when a woman reports her pregnancy to be unintended. Furthermore, there is ethnographic and anecdotal evidence that a substantial number of teen pregnancies may be deliberate. Policies on contraception will be effective only to the extent that teenagers or other young women are committed to avoiding pregnancy and to the extent that they serve women who were not already using contraception.

Research that I conducted with Phil Levine suggests that expanded access to publicly provided family planning services results in a moderate reduction in overall births and in births to teens.[1] Between December 1993 and March 2007, 25 states received waivers from the federal government to extend the coverage of family planning services to women who do not otherwise qualify for Medicaid health insurance coverage. We conduct difference-in-difference analyses to identify the causal impact of these waiver policies using a wide array of data sources, including Vital Statistics birth data, abortion data from the Guttmacher Institute, and microdata on sexual activity and contraceptive use from the 1988, 1995, and 2002 National Surveys of Family Growth (NSFG). Using data from the Centers for Medicaid and Medicare Services (CMS), we also confirm that these waivers increased the number of women receiving Medicaid-funded family planning services.

We find that extending Medicaid family planning services to women at higher levels of income dramatically increased the number of women receiving those services. By itself, this does not necessarily indicate an effect on behavior, as it could merely reflect a crowding out of privately provided services. However, we demonstrate that the waiver policies reduced overall births to non-teens by about 2 percent and to teens by over 4 percent. Scaling these estimates by the estimated proportion of women in a state made newly eligible by expanded coverage, we find that births to newly-eligible non-teens fell by almost 9 percent. Moreover, our analysis of individual-level data from the NSFG implies that the reduction in fertility associated with income-based waivers is attributable to greater contraceptive use; we find no evidence of an effect on sexual activity. Based on the cost per recipient of family planning services, we find that each birth avoided would cost on the order of $6,800.

Another policy approach to addressing teen and non-marital childbearing is to alter the financial costs and incentives for childbearing. This approach was taken during the reform of welfare, first as part of state waiver demonstrations and then with the 1996 national welfare reform legislation. In previous work I found that family cap policies implemented as part of welfare reform in the early- and mid-1990s were not effective at reducing birth rates among targeted women.[2] The family cap was the primary welfare reform policy targeted at reducing non-marital childbearing — it ended the practice of providing families on welfare with additional cash benefits when a new child was born into the family. The motivation behind the policy was to eliminate the financial incentive for conceiving an additional child while on welfare and thereby to reduce births among the target population.

I use the variation across states in the timing of family cap implementation to identify whether this policy leads to a reduction in births. The primary economic question is whether the availability of fewer resources at the margin decreases a woman's propensity to bear additional children. The potential direct effect of the policy is to reduce

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higher-order births: a decrease in marginal resources raises the price of an additional child and may thereby deter a woman from having additional births. Insofar as the policy sends a message that welfare is less generous than previously, it may also lead a woman to delay childbearing until she is financially secure and thereby reduce first births as well.

The vital statistics birth data for the years 1989 to 1998 offer no evidence that family cap policies lead to a reduction in births among women ages 15 to 34. After I control for state effects, month effects, and state-specific linear time trends, I find that a decline in births of more than 1 percent can be rejected at the 95 percent confidence level. (The upper bound of the confidence interval is an increase in births of 1.1 percent.) This finding — of no effect on births — is maintained across multiple specification checks. The set of confidence intervals around six alternative estimates has a lower bound of a 1 percent decline and an upper bound of a 2 percent increase. I also find that the data reject large declines in higher-order births among demographic groups with relatively high welfare participation rates.

A third approach to addressing high rates of teen pregnancy involves targeted interventions, or programs run at the school or community level. In a recently completed draft for an NBER conference volume, I review the evidence on the effectiveness of teenage pregnancy prevention programs.[3] Teen pregnancy prevention programs can be usefully categorized into three types: 1) sex education programs with an abstinence focus; 2) sex education with a contraception focus; and 3) multi-component youth development programs that include sex education as one of many features. Some programs are based in schools and are compulsory, others are school-based but voluntary, and others are run through community centers and groups. There is substantial variation across programs in terms of the types of populations served, including racial and ethnic differences as well as ages of the teenagers involved. My review of the most compelling evidence concludes that abstinence education programs tend to be ineffective at reducing rates of sexual activity. However, compared to non-abstinence-focused sexual education courses, these programs do not lead to lower rates of contraceptive use among sexually active teens, as some critics have claimed. Certain contraceptive-focused sex education programs may be effective at reducing risky sexual behavior among participants. And finally, a couple of high-profile multi-component interventions show promise of being effective, but would be very difficult and expensive to replicate in other settings.

In sum, the past two decades have seen numerous and varied efforts — by community groups, schools, non-profits, and all levels of government — to bring down rates of teen pregnancy and childbearing in this country. Research in this area, at this stage, is far from being able to offer a conclusive answer to the question of what drove the rise and subsequent decline in teen pregnancy. Nor can we conclusively answer why the level of teen childbearing and unintended (as reported by the mother) childbearing are so much higher in the United States than in other developed countries. A long-term goal of my research is to address this issue of international comparisons.

Socioeconomic Differences

The economics literature on teen and non-marital childbearing has tended to focus on policy and environmental determinants in a rational choice framework. But parallel literatures in other social as well as clinical sciences emphasize the role of socioeconomic disadvantage and related factors during childhood. Socioeconomic disadvantage can lead to early childbearing through a number of different mechanisms. The poor may lack the resources available to know about the different opportunities available to them or to take advantage of those opportunities. This could hinder their ability to make optimal choices regarding, for example, contraceptive use, educational attainment, and labor market training. Alternatively, schools and labor market conditions in their communities may be sufficiently weak that staying in school and avoiding early childbearing might not be seen as offering any real benefit. In addition, some ethnographic evidence suggests that those who grow up in disadvantaged situations are simply more inclined to have children because of what might be appropriately described as differences in preferences.

Levine and I confirm an empirical relationship between individual rates of socioeconomic disadvantage and rates of early childbearing but find that socioeconomic disadvantage plays only a small role in the aggregate.[4] Using the Panel Study of Income Dynamics (PSID) we observe that growing up in socioeconomic disadvantage is associated with substantially higher rates of teen childbearing. The main empirical contribution of this paper is a cohort-based analysis: we want to know whether cohorts of women with higher rates of socioeconomic disadvantage at birth subsequently have higher rates of early childbearing. We use Vital Statistics microdata from 1968 through 2003 to conduct an analysis of the relationship between rates of socioeconomic disadvantage of a birth cohort and the cohort's early childbearing experiences. As a proxy for disadvantage at birth, we use four alternate factors, all based on the mother's characteristics: having been born to a mother with a low level of education; to an unmarried mother; to a mother under age 18; or to a mother under age 20.

Our cohort-based analysis implies an even tighter correlation between rates of background disadvantage and early childbearing than is observed in the PSID data at the individual level. But, when our analysis econometrically controls for fixed state and year of birth effects, the relationship between rates of disadvantage and early childbearing is found to be quite modest. For example, a 10 percent increase in the proportion

of women who were themselves born to a teen mother (a measure of disadvantage) is associated with a less than 1 percent increase in the proportion who give birth before age 18 (a measure of early childbearing). This suggests that broader, societal forces are far more important in determining rates of early childbearing than rates of socioeconomic disadvantage. Our results lead us to conclude that the impact of a fairly large shock to socioeconomic disadvantage would have only a modest impact on rates of early childbearing.

Another area of socioeconomic differences in childrearing behaviors involves parental time-use patterns.[5] Jonathan Guryan, Erik Hurst, and I use data from the recent American Time Use Surveys as well as from Multinational Time Use Surveys to examine parental time allocated to the care of their children. We draw three major empirical conclusions about parental child care time. First, higher earnings or earnings potential are associated with more time spent with children, even though higher earning parents also work more hours in the labor market. Second, this relationship appears to hold within the United States, across other countries, and within other countries examined. And third, this positive gradient of parental time use and education or income in time spent in child care is the opposite of the gradient observed for typical leisure and home production activities.

Using a Beckerian framework of time allocation, we conclude that child care is best modeled as being distinct from either typical home production or leisure activities. In addition, our results suggest that time spent with one's children is more highly valued by individuals with a higher opportunity-cost of their time, as measured by earnings potential. What might account for this? It could arise if caring for children is a "luxury good," if more educated parents have a lower elasticity of substitution between own and market-based child care (or just a higher relative preference for time spent with their children), or if the returns to investing in the children of more educated parents are relatively higher. The fact that the children of higher-educated parents receive more time with the active attention of their parents, or conversely, that the children of lower-education parents receive less, may have important implications for the intergenerational transmission of human capital.

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Organizations in the Aggregate Economy

Esteban Rossi-Hansberg*

Economists generally agree that an important feature of any modern macroeconomic theory is an explicit aggregation of the microeconomic behavior of all agents in the economy. In the last century, the profession has gone from the formulation of some general aggregate relationships governing the evolution of the economy to detailed theories that explicitly incorporate the observed heterogeneity in many characteristics of agents and firms. Adding these microeconomic details has resulted in new insights on policy, as well as better and more detailed descriptions of modern economies. Although it is obviously important to recognize that an aggregate economy is formed by individual agents making explicit decisions, the standard aggregate models still abstract from a precise description of how these agents interact in small (or not so small) groups to produce, live, and consume. Most economic activity occurs in intermediate levels of aggregation: organizations. Firms or plants, but also cities, families, international production chains, political parties, and religious organizations, among many others, are examples of such organizations. Most of my recent research has concentrated on incorporating these organizations into general equilibrium theories in order to understand their implications for aggregate outcomes.

A starting point of this agenda is an understanding of how organizations affect economic growth. There is a set of fairly consistent facts for developed economies that suggest that the long-term growth rate of organizations is fairly stable over time. This suggests the need for theories that exhibit constant returns to scale in the factors that can be accumulated over time — a feature that most endogenous growth theories share. How can intermediate levels of organization affect the required linearity in aggregate production? Mark Wright and I argue that the organization of agents in cities is closely related to aggregate technologies with constant returns to scale.[1] Agents organize production and their lives in cities because they obtain benefits from agglomeration: there are increasing returns at the local level. We claim that to reconcile the increasing returns at the local level with constant returns at the aggregate level, one must understand the role of cities. We thus propose a theory by which the number and sizes of cities react to industry productivity shocks in a way that exhausts the increasing returns at the local level and yields constant returns in the aggregate. According to our findings, cities are the reason to obtain aggregate balanced growth, but our mechanism also yields a size distribution of cities that very closely resembles the one observed in the data. This is a stark example in which considering intermediate organizations (in this case, spatial agglomeration in cities) is fundamental to understanding aggregate outcomes.

A similar argument can be made for considering the formation and characteristics of firms. In the presence of any form of fixed cost of production, it is hard to rationalize constant returns to scale at the plant level. Given this, how can we reconcile the organization of economic activity in establishments of particular sizes with the behavior of the aggregate economy? Again we need to show that aggregation yields the necessary linearity in production. The key, however, is that we can do so while still being consistent with the rich data on establishment sizes and dynamics. Wright and I argue that the size distribution and growth patterns of establishments can be aggregated in a way that implies balanced growth but that also explains important cross-sectoral differences in the observed establishment growth rates.[2] The key, we argue, is to recognize that fluctuations in prices of industry-specific factors lead to changes in the use and accumulation patterns of these factors, which in turn affect the employment size and growth of establishments.

These theories all incorporate a rich pattern of economic organization in industries, cities, and production plants, but they model individuals, and their human capital, as an industry-specific but uniform factor of production. For the theory, hiring ten workers with some knowledge is the same as hiring one expert and nine people with no knowledge, as long as total units of human capital are kept fixed. This distinction is important, because modeling the production process as simply a function of total inputs implies that the organization of agents in specific teams is irrelevant. In contrast, we may believe that sometimes having knowledge concentrated in one individual is more efficient than having it evenly distributed, because we can organize the tasks of production in ways that will exploit knowledge more intensively. The important distinction, I believe, is that knowledge is embedded in individuals and these individuals have limited time. Organizations maximize their access to the knowledge embedded in individuals by not making them do standard tasks that other, less able agents also can per-

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form. Heterogeneous agents form production teams and the characteristics of this process, and the ability and knowledge of their co-workers, determines their productivity and compensation. Of course, once incorporated into an aggregate framework, these considerations have key implications for the distribution of wages in the economy, the size and characteristics of production teams, and aggregate productivity. In a series of papers, Luis Garicano and I have studied: the implications of hierarchical organization for wage inequality, the cross-sectional implications of changes in information and communication technology (ICT),[3] and, more recently, the effect of ICT on innovation and growth.[4]

Incorporating the explicit decision of whom, and not only how many workers, to hire implies that the distribution of abilities in the population has important consequences for total output and efficiency. Naturally, it also has important consequences for trade and the international organization of production. An economy with many talented workers can organize more efficiently by using some less talented individuals to perform the most common and straightforward tasks. This implies that there are gains from trading production tasks internationally. Pol Antràs, Garicano, and I show that in such a framework the organization of international teams leads to more wage inequality in the south, gains from trade, and merchandise trade deficits in the north.[5] We also study the role of intermediate managerial skills in generating trade in tasks across countries.[6] We find that having intermediate skilled agents is essential to being a good target for offshoring if communication technology in the target country is not particularly good. The logic is simple: intermediate managers are necessary to save on international communication costs, but their opportunity cost is to setup a firm on their own (which increases with the quality of communication technology).

The papers discussed above take the stand that the tasks required for production are heterogeneous in terms of their difficulty or the ability or knowledge needed to solve them. Therefore, the location of their performance is determined by the distribution of skills in the different countries. But many tasks required for production are heterogeneous in other dimensions not related to ability or knowledge. A particularly important dimension for trade is heterogeneity in offshoring costs, namely, the cost of performing a task away from a firm's headquarters. Some tasks can require very basic skills but need to be performed close to headquarters (like janitorial or transportation services), while others require substantial knowledge but can easily be performed far away from headquarters (like tax accounting, or many business services). Heterogeneity in offshoring costs implies that, as tasks performed by workers of all talents can be offshored, any worker could win or lose from offshoring. Gene Grossman and I show that if the motive for trade is cost differences, then under some conditions reductions in the costs of offshoring will lead to Pareto gains in the source country.[7] All workers may gain from offshoring, because firms that intensively use low-skill tasks obtain a relative cost advantage, even though tasks performed by, say, low-skilled workers are being offshored. This leads to a higher demand for low-skill labor and a higher low-skill wage. Of course, there may be other, more standard effects on factor prices if there are labor mobility frictions or if task trade leads to changes in relative prices.

It is clear from this research that modeling the production problem and the resulting organization in more detail has allowed us to better understand the aggregate implications of globalization. The emergence of global production chains is an organizational phenomenon that can have important effects on factor prices, income levels, trade patterns, and growth. Antràs and I recently reviewed the progress made by this literature in exploring the role of organizations in trade.[8] As we argue in our survey, most of the available research on the international organization of production in aggregate theories studies the case of trade in tasks between a developed and an underdeveloped country (north-south offshoring). Trade in tasks is, however, by no means restricted to north-south relationships. It is probably more important between developed economies. Of course, the motive for trade is less transparent in this case. One needs to incorporate some form of increasing returns. One avenue is to use internal increasing returns as in the "New Trade Theory." The difficulty with this approach is that it implies full specialization at the task level — an unappealing implication. Another avenue, which Grossman and I have favored in our work, is to use external increasing returns.[9] Of course, the potential problem with using externalities in a competitive model is the existence of multiple equilibriums attributable to standard coordination problems. We show that having a continuum of tasks, all of which are required for production, and letting firms outsource tasks and compete in prices, are enough to eliminate the potential multiplicity of equilibriums. The reason is that an outsourcing firm can break an equilibrium in which the performance of the task is concentrated in a sub-optimal location by moving on its own, competing in prices, and obtaining the whole world market for the task. Importantly, since tasks are small relative to total production, the firm does not gain monopoly power. We use this framework to study the specialization pattern of tasks across developed economies.[10] Our main result is that if two countries trade tasks, and are identical except for their size, the smaller one will specialize in the tasks with the low offshoring costs and will have lower wages.

To conclude, my work emphasizes the need to incorporate a rich set of organizations in our theories in order to understand aggregate phenomena. As is evident from this discussion, many

aspects of intermediate organizations have not yet been explored. Key among them are the dynamic implications of organization for factor investment and knowledge acquisition. Organizations are a key determinant of the ability to innovate and exploit efficiently available technologies. How can we study growth without paying full attention to the way in which these organizations develop over time?

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Duflo serves on the board of the Bureau for Research and Economic Analysis of Development (BREAD), and is Director of the Center for Economic Policy Research's development economics program. Her research focuses on microeconomic issues in developing countries, including household behavior, education, access to finance, health, and policy evaluation.

Duflo completed her undergraduate studies at L'Ecole Normale Supérieure in Paris in 1994, received a master's degree from DELTA in Paris in 1995, and completed a Ph.D. in Economics at MIT in 1999. Upon completing her Ph.D. she was appointed assistant professor of economics at MIT, and has been there ever since, aside from being on leave to Princeton University in 2001–2.

Duflo has received numerous academic honors and prizes including the American Economic Association's Elaine Bennett Prize for Research (2003); the "Best French Young Economist Prize" (Le Monde/Cercle des economistes, 2005); the Médaille de Bronze (Centre National de la Recherche Scientifique, 2005); and the Prix Luc Durand-Reville (Académie des Sciences Morales et Politiques, 2008). In 2008–9 she was the inaugural holder of the international chair "Knowledge Against Poverty" at the College de France.

Duflo has been a co-editor of the *Journal of Development Economics* and the *Review of Economics and Statistics,* and she currently serves as the founding editor of the *AEJ Applied Economics.*

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Kearney received her A.B. in economics from Princeton University in 1996 and her Ph.D. from MIT in 2002. Prior to joining the Maryland faculty, she was a resident fellow at the Brookings Institution. From 2002 to 2004, she was an assistant professor of economics at Wellesley College. Before attending graduate school, she worked as a research assistant/programmer at Mathematica Policy Research in Washington, D.C.

Kearney's fields of specialization are public economics and labor. Her research interests include the effectiveness and design of anti-poverty programs; the effect of government policies on fertility and related outcomes; issues of income distribution and inequality; and the nature of risk preferences and perceptions and, in particular, how these relate to individual decisions with regard to gambling and savings behavior.

She lives in Washington, D.C. with her husband Dan (a lawyer). They have great fun playing with their children, William (age 3.5) and Sophia (almost 2), in all of their favorite places, including Shenandoah National Park in VA; Park City, Utah; Long Beach Island, NJ; Fenway Park; and closer to home, the National Gallery of Art, Rock Creek Park, and their little backyard strewn with outdoor toys.

NBER Profile: *Esteban Rossi-Hansberg*

Esteban Rossi-Hansberg is a Research Associate in the NBER's Programs on Economic Fluctuations and Growth and International Trade and Investment and a Professor of Economics and International Affairs at Princeton University. He received his B.A. and M.A. in economics from ITAM (Mexico) in 1996 and 1997 respectively, and his Ph.D. in economics from the University of Chicago in 2002.

Rossi-Hansberg began his academic career at Stanford University and joined the faculty at Princeton University in 2005. His areas of specialization are macroeconomics, international trade, and urban economics. Rossi-Hansberg's research focuses on the internal structure of cities, the distribution of economic activity in space, economic growth, offshoring and the international organization of production, the role of information technology on wages and organization, and firm dynamics and the size distribution of firms.

He is an editor of the *B.E. Journal in Macroeconomics* and an associate editor of the *Quarterly Journal of Economics* and the *Journal of Monetary Economics*. He lives in Princeton with his wife María José and their one-year old son, Julián.

Conferences

Micro and Macroeconomic Effects of Financial Globalization

An NBER/Universities Research Conference on "Micro and Macroeconomic Effects of Financial Globalization" took place in Cambridge on December 5 and 6. The organizers were Ross Levine, NBER and Brown University, and Carlos Vegh, NBER and University of Maryland. These papers were discussed:

- **Matteo Iacoviello**, Boston College, and **Raoul Minetti**, Michigan State University, "Foreign Lenders in Emerging Economies"
- **Thorsten Beck**, Tilburg University, and **Maria Soledad Martinez Peria**, The World Bank, "Foreign Bank Participation and Outreach: Evidence from Mexico"
- **Todd Gormley**, Washington University, St. Louis, "Costly Information, Foreign Entry, and Credit Access"
- **Geert Bekaert**, NBER and Columbia University; **Campbell R. Harvey**, NBER and Duke University; **Christian T. Lundblad**, University of North Carolina, Chapel Hill; and **Stephan Siegel**, University of Washington, "What Segments Equity Markets?"
- **Sebnem Kalemli-Ozcan,** NBER and University of Houston; **Bent Sorensen**, University of Houston; and **Vadym Volosovych**, Florida Atlantic University, "Deep Financial Integration and Volatility"
- **Scott Davis**, Vanderbilt University, "The Effects of Globalization on International Business Cycle Co-Movement: Is All Trade and Finance Created Equal?"
- **Uluc Aysun**, University of Connecticut, and **Adam Honig**, Amherst College, "Bankruptcy Costs, Liability Dollarization, and Vulnerability to Sudden Stops"
- **Filippo Brutti**, Universitat Pompeu Fabra, "Legal Enforcement, Public Supply of Liquidity, and Sovereign Risk"
- **Laura Alfaro**, NBER and Harvard Business School, and **Andrew Charlton**, London School of Economics, "Intra-Industry Foreign Direct Investment" (NBER Working Paper No. 13447)

Summaries of these papers may be found at: http://www.nber.org/confer/2008/URCf08/summary.html

Sticky Prices and Inflation Dynamics

The 22nd Annual NBER-TCER-CEPR Conference on "Sticky Prices and Inflation Dynamics" took place in Tokyo, Japan on December 17–18, 2008. The conference organizers were: Jordi Gali, the Barcelona Graduate School of Economics and NBER; Takeo Hoshi, University of California, San Diego and NBER; Anil K Kashyap, University of Chicago and NBER; and Tsutomu Watanabe, Hitotsubashi University. These papers were discussed:

- **Chihiro Shimizu**, Reitaku University; **Kiyohiko Nishimura**, former Professor of Economics, University of Tokyo; and **Tsutomu Watanabe**, "Residential Rents and Price Rigidity: Micro Structure and Macro Consequences"

- **Kenn Ariga**, Kyoto University, and **Ryo Kambayashi**, Hitotsubashi University, "Employment and Wage Adjustments at Firms under Distress in Japan: An Analysis Based upon a Survey"

- **Fabio Canova**, ICREA-UPF, and **Tobias Menz**, University of Bern, "Does Money have a Role in Shaping Domestic Business Cycles? An International Investigation"

- **Morten Ravn**, European University Institute and CEPR; **Stephanie Schmitt-Grohe** and **Martin Uribe**, Columbia University and NBER; and **Lenno Uuskula**, European University Institute, "Deep Habits and the Dynamic Effects of Monetary Policy Shocks"

- **Naohito Abe** and **Daiji Kawaguchi**, Hitotsubashi University, "Incumbent's Price Response to New Entry: The Case of Japanese Supermarkets"

- **Oleksiy Kryvtsov**, Bank of Canada, and **Virgiliu Midrigan**, New York University and NBER, "Inventories and Real Rigidities in New Keynesian Business Cycle Models"

- **Kevin Clinton,** Consultant; **Marianne Johnson**, Bank of Canada; and **Ondra Kamenik** and **Douglas Laxton,** International Monetary Fund, "Deflation Risks Under Alternative Monetary Policy Rules"

These papers will be published in the *Journal of the Japanese and International Economies.*
Summaries of these papers may be found at: http://www.nber.org/confer/2008/trio08/summary.html

Tenth Annual Conference in India

On January 10–12, 2009, the NBER, India's National Council for Applied Economic Research (NCAER), and the Indian Council for Research on International Economic Relations (ICRIER) sponsored a meeting that united NBER researchers with about thirty economists from Indian universities, research institutions, and government departments. The theme of this year's meeting, the tenth such gathering, was "Sustaining Growth in Troubled Times." NBER President **James M. Poterba** of MIT organized the conference jointly with **Suman Bery** of NCAER.

The NBER participants in this meeting were: NBER Board Chairman John Clarkeson; John Y. Campbell, Mihir A. Desai, and Martin S. Feldstein, NBER and Harvard University; Don Fullerton, NBER and University of Illinois; Roger H. Gordon and Michelle J. White, NBER and University of California, San Diego; Abhijit Banerjee, Simon Johnson, and James M. Poterba, NBER and MIT; Anne O. Krueger, NBER and Johns Hopkins University; and Emily Oster, Raghuram Rajan, and Jesse M. Shapiro, NBER and University of Chicago.

The participants focused their discussion on a number of issues that are related to the current global economic situation. Montek Ahluwalia, Deputy Chairman of the Indian Planning Committee, provided an overview of current economic developments and policy challenges in India. Clarkeson and Feldstein, along with Tarun Das of the Confederation of Indian Industry, participated in a panel discussion on the U.S. economy and the near-term economic outlook. Other core topics that were discussed during the two-day meeting included fiscal policy and monetary management, trade and tariff policy, and the role of social programs in providing social protection for low-income families in both India and the United States.

Economic Growth

NBER Faculty Research Fellows Matthias Doepke, University of California, Los Angeles, and Benjamin Jones, Northwestern University, organized a "Conference on Economic Growth," which took place at the Federal Reserve Bank of San Francisco on February 12. These papers were discussed:

Michele Boldrin, Washington University, and **David K. Levine**, NBER and Washington University, "Quality Ladders, Competition, and Endogenous Growth"

Diego Comin, NBER and Harvard Business School, and **Bart Hobijn**, Federal Reserve Bank of San Francisco, "An Exploration of Technology Diffusion" (NBER Working Paper No. 12314)

Alexander Monge, Pennsylvania State University, "Foreign Firms, Domestic Entrepreneurial Skills, and Development"

Alice Schoonbroodt, University of Southampton, and **Michele Tertilt**, NBER and Stanford University, "Who Owns Children and Does It Matter?"

Francesco Caselli, NBER and London School of Economics, and **Guy Michaels**, London School of Economics, "Resource Abundance, Development, and Living Standards: Evidence from Oil Discoveries in Brazil"

Hyeok Jeong, Vanderbilt University, and **Yong Kim**, University of Southern California, "Complementarity and Transition to Modern Economic Growth"

Summaries of these papers may be found at http://www.nber.org/confer/2009/EGCs09/summary.html

NBER News

NBER Researchers in Public Service

Research Associate Christina D. Romer, the former co-director of NBER's Program on Monetary Economics, a former member of the Business Cycle Dating Committee, and a faculty member at the University of California, Berkeley, has been confirmed as Chair of the President's Council of Economic Advisers.

Research Associate Lawrence H. Summers, a member of several NBER Programs including Public Economics and Monetary Economics and a faculty member at Harvard University, is the new director of the National Economic Council.

Research Associates Cecilia E. Rouse of Princeton University and Austan Goolsbee of the University of Chicago have been nominated as members of the Council of Economic Advisers. Goolsbee will also serve as the chief economist and staff director for the President's Economic Recovery Advisory Board. NBER President-Emeritus Martin S. Feldstein of Harvard University and former NBER Board member Roger Ferguson of TIAA-CREF are also members of this new Board.

Research Associate Jeremy C. Stein of Harvard University is a Senior Advisor to the Secretary of the Treasury. And, Research Associate Jeffrey B. Liebman, also of Harvard, is serving as Executive Associate Director of the Office of Management and Budget.

2008–9 Awards and Honors

A number of NBER researchers received honors, awards, and other forms of professional recognition during 2008 and early 2009. A list of these honors, excluding those that were bestowed by the researcher's home university and listing researchers in alphabetical order, is presented below.

Yacine Ait-Sahalia was elected a Fellow of the American Statistical Association and the *Journal of Econometrics* and delivered the Hermann Otto Hirshfeld Lectures, Humboldt University, Berlin, in 2008; she also received the John Simon Guggenheim Memorial Fellowship for 2008–9.

Elizabeth Oltmans Ananat became a Research Associate of the National Poverty Center at the University of Michigan.

Torben Andersen was elected a Fellow of the Econometric Society during 2008.

Ashish Arora served on the "Measuring Innovation in the 21st Century" Economy Advisory Committee to the U.S. Secretary of Commerce.

Katherine Baicker was elected to the Board of Directors of Academy Health and was appointed to the editorial board of the *Journal of Health Economics*.

Anirban Basu received the Alan Williams Health Economics Fellowship for 2008 from the University of York (U.K.) He was also the 2008 Program Chair for the Health Policy Statistics Section of the American Statistical Association.

Paul Beaudry was awarded the 2008 John Rae prize for the most significant contribution to economic research in Canada over the last five years.

David Blanchflower presented the Esmée Fairbairn Memorial Lecture at Lancaster University on October 30, 2007.

Rebecca Blank received the Distinguished Alumni Award at the University of Minnesota. She also will deliver the Sulzberger Lecture at Duke University's Sanford Institute of Public Policy.

Francine D. Blau has been named one of the five inaugural Academic Fellows of the Labor and Employment Relations Association (LERA).

David Bloom was appointed an Ambassador in the Paul G. Rogers Society for Global Health.

Nicholas Bloom and **Alex Mas** won the Labor and Employment Relations Association's 2007 John T. Dunlop Scholar Award for "outstanding academic contributions to research by recent entrants to the field."

Jeffrey R. Brown was nominated by President Bush for the position of Public Trustee of the Social Security and Medicare Trust Funds; he was awarded the Early Career Scholarly Achievement Award from the American Risk and Insurance Association; and he and **Amy Finkelstein** received the 2008 TIAA-CREF Paul A. Samuelson Award for their paper, "The Interaction of Public and Private Insurance: Medicaid and the Long-Term Care Insurance Market."

Richard V. Burkhauser is President-Elect of the Association for Public Policy Analysis and Management. His term will begin in 2010. He also received the 2008 Felix Buchal Award for scholarship in interdisciplinary longitudinal research using the German Socio-Economic Panel. Finally, in 2008 he was the R.I. Downing Visiting Fellow at the University of Melbourne.

John Y. Campbell received an honorary doctorate from the University of Maastricht, in the Netherlands, on January 8, 2009.

Dennis W. Carlton, and his coauthors Joshua Gans and Michael Waldman, received the Robert F. Lanzilotti Prize, awarded by the International Industrial Organization Society, for the Best Paper in Antitrust Economics. Their paper is "Why Tie a Product Consumers Do Not Use?" (NBER Working Paper No. 13339).

Amitabh Chandra won the Eugene Garfield award with **Douglas O. Staiger** for the Impact of Medical Research. He was named a co-editor of the *Journal of Human Resources* and is on the editorial board of the *American Economic Review* (Applied).

Raj Chetty received an Alfred P. Sloan research fellowship and the American Young Economist Award.

Richard H. Clarida, **Jordi Gali**, and **Mark Gertler** won the First Prize Award for Best Paper presented at the NBER's International Seminar on Macroeconomics during its first 25 years (on the occasion of ISOM's thirtieth anniversary in June 2008). The paper, written in 1998, was "Monetary policy rules in practice - Some international evidence" (NBER Working Paper No. 6254).

Courtney Coile became a member of the National Academy of Social Insurance.

Philip J. Cook and **Jacob Vigdor** (with co-authors Robert MacCoun and Clara Muschkin) received the Raymond Vernon Memorial Prize for the best article published in the *Journal of Policy Analysis and Management* in 2008.

Mario J. Crucini was appointed to a three-year term as Associate Editor of the *Journal of Monetary Economics*, effective July 1, 2008. He became a Senior Fellow at the Globalization and Monetary Policy Institute, Federal Reserve Bank of Dallas, in June 2008. He was also the Weatherall Visiting Fellow, Queen's University, Canada, from July 1–August 30, 2008.

Janet Currie is the inaugural holder of the Sami Mnaymneh Chair in Economics at Columbia University.

Steven J. Davis has been appointed the Editor of the *American Economic Journal: Macroeconomics.*

Angus Deaton received an honorary Doctor of Letters from the University of St. Andrews (Scotland) in June 2008.

Peter DeMarzo won the Michael Brennan Award Second-Place Prize for his paper "Agency and Optimal Investment Dynamics" (with Michael Fishman), published in the *Review of Financial Studies.* He was also elected Vice President of the Western Finance Association.

Mihir A. Desai, **C. Fritz Foley**, and **James R. Hines, Jr.** co-authored the paper "Dividend policy inside the multinational firm" (NBER Working Paper No. 8698), which was awarded the Pearson Prize by the Financial Management Association. Another paper by **Desai**, Alexander Dyck, and **Luigi Zingales,** titled "Theft and Taxes" (NBER Working Paper No. 10978), was a second place winner of the Jensen Prize for the Best Papers Published in the *Journal of Financial Economics* in the Areas of Corporate Finance and Organizations, 2007.

Erwin Diewert became a fellow of the American Economic Association.

Darrell Duffie was elected President of the American Finance Association. He also gave the Princeton Lectures in Finance, and was the Nash Lecturer at Carnegie-Mellon University.

Esther Duflo received the "Prix Luc Durand-Reville" from the Academie des Sciences Morale et Politiques, France in 2008.

William Easterly won the Hayek Award for Best Book of the Last Two Years from the Manhattan Institute and delivered the Dobriansky Lecture at Georgetown University.

Ronald G. Ehrenberg was awarded an honorary Doctor of Science degree by the State University of New York and was named a fellow of the American Educational Research Association.

Isaac Ehrlich was appointed by Governor David Patterson to serve on his new Council of Economic Advisers.

Martin Feldstein received the 2008 Butler Award from the New York Association for Business Economics.

Amy Finkelstein received the 2008 American Economic Association's Elaine Bennett Research Prize "awarded every other year to recognize, support, and encourage outstanding contributions by young women in the economics profession." She and **Jeffrey R. Brown** also received the 2008 TIAA-CREF Paul A. Samuelson Award for their paper: "The Interaction of Public and Private Insurance: Medicaid and the Long-Term Care Insurance Market" (*AER,* June 2008 and NBER Working Paper No. 10989).

Price Fishback was appointed co-editor of the *Journal of Economic History*.

Richard Freeman has been named one of the five inaugural Academic Fellows of the Labor and Employment Relations Association (LERA).

Ken Froot won the Witt Award of the American Risk and Insurance Association for his article, "Risk Management, Capital Budgeting, and Capital Structure Policy for Insurers and Reinsurers" (NBER Working Paper No. 10184).

Nicola Fuchs-Schündeln was awarded the "2008 DAAD Prize for Distinguished Scholarship in German and European Studies" by the American Institute for Contemporary German Studies.

Mikhail Golosov received an NSF CAREER grant, the NSF's major award in support of early-career scientists, and a Sloan Fellowship, in 2008.

Robert J. Gordon delivered the A. W. H. Phillips invited lecture at the Australasian meetings of the Econometric Society in July 2008. He also presented invited lectures at the 14th Dubrovnik Economic Conference in Dubrovnik, Croatia, in June; at the International Workshop on Chinese Productivity, Hangzhou, China, in September; and at the Seventh Macroeconomic Policy Research Workshop of the Hungarian Central Bank and CEPR, Budapest, in October.

Pierre-Olivier Gourinchas won the 2008 prize for the best young French economist (under age 40) awarded by

Cercle des Economistes and Le Monde.

Michael Grossman was awarded the 2008 Victor Fuchs Award. Also, Nankai University has announced the establishment of the Nankai-Grossman Center of Health Economics and Medical Insurance. Professor Grossman will serve as the Center's Honorary Director and Chairperson of its Academic Committee.

Philip Haile was named a Fellow of the Econometric Society.

Michael Haines was recently elected Vice President of the Economic History Association.

Robert E. Hall was selected to run unopposed for President of the American Economic Association, was elected, and will serve for the year 2010.

James D. Hamilton presented the Esther Peterson Lecture at the Joint Meeting of the American Agricultural Economics Association and the American Council on Consumer Interests. In addition, he was keynote speaker at the 5th Colloquium on Modern Tools for Business Cycle Analysis in Luxembourg and at the Sixteenth Annual Symposium of the Society for Nonlinear Dynamics and Econometrics.

Eric A. Hanushek became a Fellow of the American Educational Research Association; he also became chair of the Board of Directors for the National Board for Education Sciences.

Geoffrey Heal received an Honorary Doctorate from the University of Paris, Dauphine, in November 2008.

James J. Heckman became a Resident Member of the American Philosophical Society, a Fellow of the International Statistical Institute, and a Fellow of the American Association for the Advancement of Science, in 2008.

Takatoshi Ito becomes the fourth holder of the Tun Ismail Ali Chair of Faculty of Economics at the University of Malaya.

Michael C. Jensen received the 2007 Herbert Simon Award for outstanding contributions to business research by Rajk Laszlo College, Budapest, Hungary, and the Dean's Leadership Award in Corporate Governance from LeBow College of Business, Drexel University.

Anil K Kashyap, Raghuram Rajan, and **Jeremy C. Stein** co-authored NBER Working Paper No. 6962, which was selected by the New York Times Magazine in December 2008 as one of the "ideas of the year."

John Kennan was elected a Fellow of the Society of Labor Economists.

Michael Kremer was named a fellow of the Econometric Society.

Alan B. Krueger was awarded the Susan C. Eaton Award by the Labor and Employment Relations Association. The award "is given annually to a member of the Association who has achieved distinction as both a scholar and practitioner in the labor field." He also was selected to give the Distinguished Lecture in Economics and Government by the Society of Government Economists at the January 2009 ASSA meeting.

Naomi Lamoreaux is president-elect of the Economic History Association; she will become president in September 2009.

Eric Michael Leeper spent two months as a Professorial Fellow in Monetary Economics and Finance at Victoria University Wellington and the Reserve Bank of New Zealand.

Jonathan D. Levin was elected a Fellow of the Econometric Society.

Nuno Limão received the Kiel Institute's "Excellence Award in Global EconomicAffairs", which aims "to build a community of the brightest young researchers in the area of global economic affairs."

Jin-Tan Liu received the Academic Award from the Ministry of Education, Taiwan in 2008.

Robert A. Margo is a Visiting Scholar at the Russell Sage Foundation, New York City, from September 2008 until June 2009.

Alexandre Mas and **Nicholas Bloom** received the John T. Dunlop award from the Labor and Employment Relations Association for outstanding research by someone who has received a terminal degree within the last ten years.

Robert C. Merton was given the inaugural Distinguished Finance Educator Award by the Financial Education Association in September 2008.

Olivia S. Mitchell was awarded the 2008 Roger F. Murray Prize from the Institute for Quantitative Research in Finance. She also received the 2008 Carolyn Shaw Bell Award of the Committee on the Status of Women in the Economics Profession.

Randall Morck received the J. Gordin Kaplan Award for Excellence in Research from the University of Alberta in 2008.

Enrico Moretti won the Carlo Alberto Medal, presented to an Italian economist under the age of 40 for outstanding research contributions to the field of economics.

Dale Mortensen was named a Distinguished Fellow of the American Economic Association.

Aldo Musacchio won the Arthur H. Cole Prize in 2008, awarded by the Economic History Association for the best paper published in the *Journal of Economic History* between September 2007 and September 2008.

Joseph P. Newhouse was named to the (U.S.) Comptroller General's Advisory Committee.

Gerard Padro i Miquel received the ESRC (Economic and Social Research Council) first grant in July 2008, the organization's main award in support of early-career researchers. The ESRC is the main research council for social sciences in the U.K.

Lubos Pastor received the NASDAQ Award for the best paper on capital formation at the 2008 Western Finance Association conference, for "Entrepreneurial learning, the IPO decision, and the post-IPO drop in firm profitability" (NBER Working Paper No. 12792), joint with Lucian Taylor and **Pietro Veronesi.** He also received the 2008 Q Group Research Award, for "Are stocks really less volatile in the long run?" joint with **Robert F. Stambaugh.**

Monika Piazzesi became a Fellow of the Econometric Society.

Rob Porter was selected as the

Distinguished Fellow of the Industrial Organization Society for 2009.

James Poterba is the President of the National Tax Association and Vice-President of the American Economic Association.

Edward C. Prescott was elected a member of the National Academy of Science.

Manju Puri won the Fama/DFA Prize for the best paper in the *Journal of Financial Economics* in the Areas of Capital Markets and Asset Pricing (the second prize award) for "Optimism and Economic Choice" (with David Robinson), NBER Working Paper No. 11361.

Yi Qian received a research grant from the Ewing Marion Kauffman Foundation in the summer of 2008. "Does Ethnic Link Pay?" written with Yasheng Huang (MIT) and Li Jin (HBS), won the best paper award at the TCFA (The Chinese Financial Association) conference in November 2008.

Daniel L. Rubinfeld was awarded an honorary doctorate from the University of Basel, Switzerland, in November 2008.

Antoinette Schoar was awarded the Ewing Marion Kauffman Prize Medal for Distinguished Research in Entrepreneurship, 2009.

José A. Scheinkman was elected a Member of the National Academy of Sciences.

Kathryn Shaw delivered the Adam Smith Lecture, European Labor Economics Association, in Amsterdam in September 2008; she also was elected a Fellow of the Society of Labor Economists.

Pablo T. Spiller is the President-Elect of the International Society for New Institutional Economics.

Robert W. Staiger was elected a Fellow of The Econometric Society in 2008.

Richard Sutch received the 2008 Thomas Jefferson Award from the Society for History in the Federal Government.

John Tyler was one of three national recipients of the Senior Urban Research Fellowship from the Council of Great City Schools for research he will be conducting in the Cincinnati School District on how teacher use of student performance data, as provided by a web-based application, affects their classroom instruction.

Pietro Veronesi's paper, "Entrepreneurial Learning, the IPO Decision, and the Post-IPO Drop in Firm Profitability" (NBER Working Paper No. 12792), with Lubos Pastor (University of Chicago and NBER) and Lucian Taylor (University of Pennsylvania) won the NASDAQ Award for the best paper on capital formation at the 2008 Western Finance Association conference.

Gianluca Violante will become Managing Editor of *The Review of Economics Dynamics* in January 2009.

Joel Waldfogel won the "Best Article of the Year" Prize for 2006 from the *Journal of Industrial Economics.* The article, co-authored with Lu Chen, is "Does Information Undermine Brand? Information Intermediary Use and Preference for Branded Web Retailers" (NBER Working Paper No. 9942).

Michael Whinston's article with Ilya Segal, "Antitrust in Innovative Industries" (NBER Working Paper No. 11525 and *American Economic Review,* 97, December 2007, pp. 1703–30), won the 2008 Compass Lexicon Prize for best article on antitrust economics.

Jeffrey G. Williamson presented the: Joseph Fisher Public Lecture, University of Adelaide (Australia); Trevor Swan Distinguished Lecture, Australian National University; John Hicks Lecture, Oxford University; Fundacion Areces Public Lecture, Madrid; and the University Inaugural Lecture, University Pompeu Fabra (Spain).

Richard Zeckhauser's article with Richard Frank, "Custom-Made Versus Ready-to-Wear Treatments: Behavioral Propensities in Physicians' Choices" (NBER Working Paper No. 13445), won the National Institute of Health Care Management's best paper of the year award for 2008. Zeckhauser also was the Lee Kwan Yew Distinguished Visitor to Singapore in 2008.

Program Director News

After 19 years as Director of the NBER's Program on Health Care, Research Associate Alan M. Garber of Stanford University will step down on June 30, 2009. His successor will be Jonathan Gruber of MIT, who has served as Director of the NBER's Program on the Economic Well-Being of Children since 1996.

Research Associate Janet Currie of Columbia University, the current chair of that university's Economics Department and an NBER affiliate since 1991, will become Director of the NBER's Economic Well-Being of Children Program on July 1, 2009. An active member of that Program for many years, Currie also served as Program Director in 1997–8 while Gruber was a Deputy Assistant Secretary at the U.S. Treasury Department.

After more than thirty years as Director of the NBER's Labor Studies Program, Research Associate Richard Freeman of Harvard University will also step down as program director on June 30, 2009. His successor will be Research Associate David Card of the University of California at Berkeley, who has been a member of the Labor Studies Program since 1982. Card has held faculty positions at the University of Chicago and Princeton University as well as Berkeley.

Victor Zarnowitz Dead at Age 89

Victor Zarnowitz, a long-time NBER Research Associate and a member of the NBER's Business Cycle Dating Committee, passed away on February 21 at the age of 89. At the time of his death, Zarnowitz was Senior Fellow and Economic Counselor to The Conference Board in New York, where he had worked since 1999. He also was Professor Emeritus of Economics and Finance, Graduate School of Business, The University of Chicago.

After a harrowing and remarkable youth, chronicled in his 2008 autobiography *Fleeing the Nazis, Surviving the Gulag, and Arriving in the Free World: My Life and Times*, Zarnowitz received his Ph.D. from the University of Heidelberg in 1951. He joined the NBER in New York City in 1952, and his work contributed greatly to the study of economic fluctuations.

Program and Working Group Meetings

Measuring Economic Activity in Markets for Ideas, Innovation, and Other Intangibles

The NBER's Program on Technological Change and Productivity Measurement met in Cambridge on December 5. Program Director Ernst R. Berndt of NBER and MIT and Wesley M. Cohen of NBER and Duke University organized the meeting. The following topics were discussed:

- **James Bessen**, Boston University, "More Machines or Better Machines"
- **Rachel Soloveichik**, Bureau of Economic Analysis, "Theatrical Movies as a Capital Asset"
- **Jaison R. Abel**, Federal Reserve Bank of New York, and **Todd M. Gabe**, University of Maine, "Human Capital and Economic Activity in Urban America"
- **Dietmar Harhoff**, University of Munich, "Patent Families, Equivalents, and Patent Value"
- **Carol A. Robbins**, Bureau of Economic Analysis, "Measuring Payments for the Supply and Use of Intellectual Property"
- Panel Discussion on "Useful and Needed Research on Measuring Economic Activity in Markets for Ideas, Innovation, and Other Intangibles"
  Chair: Wesley M. Cohen
  Panel: **Avi Goldfarb**, University of Toronto; **Jonathan Haskell**, Imperial College Business School; **Charles R. Hulten**, University of Maryland and NBER; and **Margaret Blair**, Vanderbilt University
- **Carol Corrado**, The Conference Board, "Report of the NSF/Conference Board Workshop on Innovation Data"
- **Julie Lane**, National Science Foundation, "Improvements and Future Challenges for the Research Infrastructure: Administrative Transaction Data"

Summaries of these papers may be found at: http://www.nber.org/confer/2008/prf08/summary.html

International Trade and Investment

The NBER's Program on International Trade and Investment met at the University of California, San Diego on December 5 and 6. Program Director Robert C. Feenstra of the University of California, Davis chose these papers to discuss:

- **Costas Arkolakis**, Yale University and NBER, "Market Penetration Costs and Trade Dynamics"
- **Costas Arkolakis**, and **Marc-Andreas Muendler**, University of California, San Diego and NBER, "The Extensive Margin of Exporting Goods: A Firm-Level Analysis"
- **Pravin Krishna**, Johns Hopkins University and NBER, and **Mine Z. Senses**, Johns Hopkins University, "International Trade and Labor Income Risk in the United States"
- **Jeffrey Grogger**, University of Chicago and NBER, and **Gordon H. Hanson**, University of California, San Diego and NBER, "Income Maximization and the Selection and Sorting of International Migrants"
- **Dhammika Dharmapala**, University of Connecticut; **C. Fritz Foley**, Harvard University and NBER, and **Kristin J. Forbes**, MIT and NBER, "The Unintended Consequences of the Homeland Investment Act: Implications for Financial Constraints, Governance, and International Tax Policy"
- **Ram C. Acharya**, Industry Canada, and **Wolfgang Keller**, University of Colorado and NBER, "Estimating the Productivity Selection and Technology Spillover Effects of Imports" (NBER Working Paper No. 14079)
- **Pinelopi K. Goldberg**, Princeton University and NBER; **Amit Khandelwal**, Columbia University; **Nina Pavcnik**, Dartmouth College and NBER, and **Petia Topalova**, IMF, "Imported Intermediate Inputs and Domestic Product Growth: Evidence from India" (NBER Working Paper No. 14416)
- **Stefania Garetto**, Princeton University, "Input Sourcing and Multinational Production"

Summaries of these papers may be found at: http://www.nber.org/confer/2008/itif08/summary.html

Law and Economics

NBER's Law and Economics Program met in Cambridge on February 6. Program Director Christine Jolls, NBER and Yale Law School, organized the meeting. These papers were discussed:

- **Rosalind Dixon**, University of Chicago Law School, and **Richard Holden**, MIT and NBER, "Amending the Constitution: Article V and the Effect of Voting Rule Inflation"
- **Vikrant Vig**, London Business School, "Access to Collateral and Corporate Debt Structure: Evidence from a Natural Experiment"
- **Alberto Galasso**, University of Toronto, and **Mark Schankerman**, London School of Economics, "Patent Thickets and the Market for Innovation: Evidence from Settlement of Patent Disputes"
- **Haresh Sapra**, University of Chicago; **Ajay Subramanian**, Georgia State University; and **Krishnamurthy Subramanian**, Emory University, "Corporate Governance and Innovation: Theory and Evidence"
- **Edward L. Glaeser**, Harvard University and NBER, and **Gergely Ujhelyi**, University of Houston, "Regulating

Misinformation" (NBER Working Paper No. 12784)

- **Marco Ottaviani** and **Abraham L. Wickelgren**, Northwestern University, "Approval Regulation with Learning"

- **Ernesto Dal Bo** and **Marko Tervio,** University of California, Berkeley and NBER, "Self-Esteem, Moral Capital, and Wrongdoing" (NBER Working Paper No. 14508)

- **Daniel L. Chen** and **Jasmin Sethi**, Harvard University, "The Effects of Sexual Harassment Law on Gender Inequality"

Summaries of these papers may be found at: http://www.nber.org/confer/2009/LEs09/summary.html

Economic Fluctuations and Growth

NBER's Program on Economic Fluctuations and Growth met at the Federal Reserve Bank of San Francisco on February 13. NBER Research Associates Peter J. Klenow of Stanford University and Valerie A. Ramey, University of California, San Diego, organized the meeting. These papers were discussed:

- **Francisco J. Buera**, NBER and University of California, Los Angeles; **Joseph P. Kaboski**, Ohio State University; and **Youngseok Shin**, Washington University in St. Louis, "Finance and Development: A Tale of Two Sectors"

- **Diego Comin**, NBER and Harvard University; **Mark Gertler**, NBER and New York University; and **Ana Maria Santacreu**, New York University, "Technology Innovation and Diffusion as Sources of Output and Asset Price Fluctuations"

- **Glenn D. Rudebusch** and **Eric T. Swanson**, Federal Reserve Bank of San Francisco, "The Bond Premium in a DSGE Model with Long-Run Real and Nominal Risks"

- **Eric M. Leeper**, NBER and Indiana University; **Todd B. Walker**, Indiana University, and **Shu-Chun Susan Yang**, Congressional Budget Office, "Fiscal Foresight and Information Flows" (NBER Working Paper No. 14630)

- **Alessandra Fogli**, Federal Reserve Bank of Minneapolis, and **Laura Veldkamp**, NBER and New York University, "Nature or Nurture? Learning and the Geography of Female Labor Force Participation" (NBER Working Paper No. 14097)

- **James Feyrer**, Dartmouth College, "Trade and Income — Exploiting Time Series in Geography"

Summaries of these papers may be found at: http://www.nber.org/confer/2009/EFGw09/summary.html

Industrial Organization

The NBER's Program on Industrial Organization, directed by Nancy L. Rose of MIT, met at the NBER's California offices on February 20-21. Matthew Gentzkow, NBER and University of Chicago, and Matthew White, NBER and University of Pennsylvania, organized the meeting. These papers were discussed:

- **Justine S. Hastings,** Yale University and NBER, "Wholesale Price Discrimination and Regulation: Implications for Retail Gasoline Prices"

- **Nuno Cassola,** European Central Bank**; Ali Hortaçsu**, University of Chicago and NBER; and **Jakub Kastl**, Stanford University, "The 2007 Subprime Market Crisis in the Euro Area through the Lens of ECB Repo Auctions"

- **Liran Einav**, Stanford University and NBER; **Amy Finkelstein**, MIT and NBER; and **Mark R. Cullen**, Yale University, "Estimating Welfare in Insurance Markets Using Variation in Prices" (NBER Working Paper No. 14414)

- **Jean-Pierre Dubé** and **Jeremy T. Fox**, University of Chicago and NBER, and **Che-Lin Su**, University of Chicago, "Improving the Numerical Performance of BLP Static and Dynamic Discrete Choice Random Coefficients Demand Estimation"

- **Andrew Sweeting,** Duke University and NBER, "Equilibrium Price Dynamics in Perishable Goods Markets: The Case of Secondary Markets for Major League Baseball Tickets" (NBER Working Paper No. 14505)

- **Patrick Bajari**, University of Minnesota and NBER, and **Gregory Lewis**, Harvard University, "Procurement Contracting with Time Incentives: Theory and Evidence"

- **Meghan R. Busse**, Northwestern University and NBER; **Christopher R. Knittel,** University of California, Davis and NBER; and **Florian Zettelmeyer**, Northwestern University and NBER, "Pain at the Pump: How Gasoline Prices Affect Automobile Purchasing in New and Used Markets"

Summaries of these papers may be found at: http://www.nber.org/confer/2009/IOs09/summary.html

Bureau Books

Developments in the Economics of Aging

Developments in the Economics of Aging, edited by David A. Wise, will be available from the University of Chicago Press this spring for $99.00.

The number of Americans eligible to receive Social Security benefits will increase from 45 million to nearly 80 million in the next twenty years. Retirement systems therefore must adapt to meet the demands of the largest aging population in our nation's history. In this NBER Conference Volume, Wise and a distinguished group of analysts examine the economic issues that will confront policymakers as they seek to design the appropriate policies to protect the economic and physical health of these older Americans.

This volume looks at such topics as what factors influence work and retirement decisions at older ages; the changes in life satisfaction associated with retirement; and the shift in responsibility for managing retirement assets, from professional money managers of traditional pension plans to individual account holders of 401(k)s. It also addresses the complicated relationship between health and economic status, including why health behaviors vary across populations and how socioeconomic measures correlate with health outcomes.

Wise directs the NBER's Program on the Economics of Aging and is John F. Stambaugh Professor of Political Economy at Harvard's Kennedy School of Government.

Financial Sector Development in the Pacific Rim

Financial Sector Development in the Pacific Rim, Volume 18 in the NBER-East Asia Seminar on Economics (EASE) series, will be available this April from the University of Chicago Press. The editors, who serve as organizers of the EASE conferences, are Takatoshi Ito and Andrew K. Rose.

The reform in Asian financial sectors — especially in banking and stock markets — has been remarkable since the currency crisis of 1997–8. East Asia is now a major player in international finance, providing serious competition to the more traditional financial centers of London and New York. This book provides a rich collection of theoretical and empirical analyses of the growing capital markets in the region. It brings together authors from various East Asian and Pacific nations, and examines the institutional factors influencing financial innovation; the consequences of financial development; widespread consolidation occurring through mergers and acquisitions; and the implementation of policy reform. The comparative analysis offered here can help to answer broad questions about economic development and the future of Asia.

Ito and Rose are NBER Research Associates in the Program on International Finance and Macroeconomics. Ito is also a professor of economics at the University of Tokyo. Rose is a professor of economics at The Haas School of Business, University of California, Berkeley.

The price of the clothbound volume will be $99.00.

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