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Program Report

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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 squared⁵) 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 indi-

cate 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 birth-weight 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 birth-weight 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 birth-weight 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.

¹ S.-Y. Chou, I. Rashad, and M. Grossman, "Fast-Food Restaurant Advertising on Television and Its Influence on Childhood Obesity," NBER Working Paper No. 11879, December 2005, and *Journal of Law and Economics*, 51 (4) (November 2008), pp. 599–618.

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 Paper 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.

⁷ See J. Bhattacharya, "Who Pays for Obesity?" NBER Reporter, 2008 Number 3, pp. 4–6 for a detailed summary of this research.

⁸ J. Bhattacharya and N. Sood, "Health Insurance and the Obesity Externality," NBER Working Paper No. 11529, July 2005, 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.

⁹ J. Bhattacharya and M.K. Bundorf, "The Incidence of the Healthcare Costs of Obesity," NBER Working Paper No. 11303, revised September 2006, forthcoming in *Journal of Health Economics*.

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.

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