

IN THIS ISSUE

- Is the U.S. Population Behaving Healthier?
- Cable Television Raises Women's Status in India
- Why Subprime Auto Loans Default
- Exchange Controls and International Trade

Is the U.S. Population Behaving Healthier?

Knowing whether health behaviors are improving over time is important in forecasting medical costs. And, a population that behaves in a healthier way will have a higher quality of life than one with a more adverse behavioral profile, even given length of life. In **Is the U.S. Population Behaving Healthier?** (NBER Working Paper No. 13013), authors **David Cutler**, **Edward Glaeser**, and **Allison Rosen** consider what has happened to the population's health behaviors over time and what the future may hold.

They find that the impact on longevity of trends in health behavior has not been uniform across different behaviors over the past three decades. For example, while fewer people smoke than used to, more people are obese. Examining these factors as a whole, the authors find significant improvement in the health-risk profile of the U.S. population between the early 1970s and the early 2000s. Reduced smoking, better control of medical risk factors such as hypertension and cholesterol, and better education among the older population have been more important for mortality than the substantial increase in obesity.

The results suggest substantial caution about the future, though. Where reductions in smoking can be expected to have a continued impact on improved health, future changes in obesity might more than overwhelm this trend. Two-thirds of the U.S. population is now overweight or obese. As a result, con-

tinued increases in weight from current levels will have a bigger impact on health than did increases in weight from lower levels of Body Mass Index (BMI).

A large part of the impact of BMI is moderated through its effect on hypertension and high cholesterol. Given

“Reduced smoking, better control of medical risk factors such as hypertension and cholesterol, and better education among the older population have been more important for mortality than the substantial increase in obesity.”

that not everyone with these conditions takes medications, or is controlled by the medication they do take, the resulting impact of rising weight on health can be significant. The optimistic side of this picture, however, is the potential for better control of obesity. If the effectiveness of risk-factor control can be increased, through more people taking medication and those taking it using it more regularly, much of the impact of obesity on mortality risk can be blunted, according to the authors.

Understanding how to improve utilization of and adherence to recommended medications are key issues in health outcomes. The research to date has focused on two possible avenues. The first is performance-based payment: physicians are now paid for office visits, but not for ensuring follow-up with their recommendations. The idea behind pay-for-performance systems is to reward physicians (or insurance companies) for successful efforts to increase

utilization and possibly adherence. Such efforts might involve having nurse outreach, automatic medication refills, or more convenient office hours to monitor side effects.

The second strategy involves use of information technology. Patients can

receive electronic reminders about medication goals, information such as blood pressure can be transmitted and monitored electronically, and automated decision tools can help with dosing and medication switches. Whether these or other strategies offer the greatest promise of improved adherence is uncertain. The authors' results suggest that evaluating these strategies in practice is a high research priority.

The authors' primary data source is the National Health and Nutrition Examination Survey (NHANES). In the United States, it is the leading survey and includes both physical examination and laboratory measurements. The authors use two NHANES surveys, the first from 1971–5 (NHANES I) and the second from 1999–2002 (NHANES IV). Their analysis begins with NHANES I because it is the first population health survey that asked about smoking status, a key variable in health risk.

— Les Picker

Cable Television Raises Women's Status in India

In India, access to private cable television has promoted female autonomy, decreased the reported acceptability of wife beating, and reduced reported preferences for sons over daughters, according to **The Power of TV: Cable Television and Women's Status in India** (NBER Working Paper No. 13305). The study's co-authors, **Robert Jensen** and **Emily Oster**, conclude that maybe "cable television, with programming that features lifestyles in both urban areas and in other countries, is an effective form of persuasion because people emulate what they perceive to be desirable behaviors and attitudes, without the need for an explicit appeal to do so." In addition to effects on attitudes, the authors also find increases in female school enrollment and decreases in fertility in response to cable television introduction.

In the early 1990s, satellite television created new businesses as Indian entrepreneurs bought satellite dishes and charged nearby homes for connection to them. Prior to this, the only television available was broadcast TV, which features limited programming. In the five years from 2001 to 2006, about 30 million households added cable service and those with cable have access to a wide variety of satellite channels. These feature, among other things, game shows and soap operas, which are extremely popular. These soap operas, in particular, generally depict urban environments in which, relative to rural areas, women are more likely to work outside the home, control money and have high levels of education.

Jensen and Oster evaluate the impact of cable television on attitudes using data from the Survey of Aging in Rural India, a rich survey of 2,700 households containing a person aged 50 or older. All women aged 15 and

it by 2003. In villages that added cable, viewership nearly doubled. Jensen and Oster identify the effects of cable on gender attitudes and behaviors by comparing changes over time in these variables across villages that do, and do not,

"The villages that added cable were associated with improvements in measures of women's autonomy, a reduction in the number of situations in which wife beating was deemed acceptable, and a reduction in the likelihood of wanting the next child to be a boy."

older in each household were interviewed in 2001, 2002, and 2003. To determine their level of autonomy, these women were asked whether they needed permission to visit the market or to visit friends or relatives. They were asked whether they were allowed to keep money to spend as they wished and who made household decisions about obtaining health care or purchasing major items. To learn about "son preference", the women were also asked whether they wanted their next child to be a boy, a girl, or whether it didn't matter. Subjects were asked whether they thought a man was justified in beating his wife for infidelity, disrespect, neglecting the children, not cooking food properly, or if her natal family did not give expected money, jewelry, or other things. Jensen and Oster also use data on behaviors per se, including school enrollment and fertility.

The survey also collected data on whether each village had cable access. In the first round of the survey in 2001, 65 of the 180 villages surveyed had cable television. Ten more households had cable in 2002, and 11 more had added

change their cable status during the survey period.

In areas that never had cable, or always had it, there was little change in television watching over time and little recorded change in attitudes. The villages that added cable were associated with improvements in measures of women's autonomy, a reduction in the number of situations in which wife beating was deemed acceptable, and a reduction in the likelihood of wanting the next child to be a boy. And, the effects were quite large. In a sample in which the average education level was 3.5 years, introducing cable appeared to have the same effects on attitudes towards female autonomy as 5.5 years of education. Cable also increased the likelihood that a girl aged 6-10 would be enrolled in school, although it had no effect for boys, and cut the yearly increase in the number of children or pregnancies among women of child-bearing age.

—Linda Gorman

Why Subprime Auto Loans Default

Access to credit markets is generally considered a hallmark of developed economies. In the United States, most households appear to have substantial

ability to borrow. As of September 2007, U.S. households had a total of more than \$2.4 trillion in non-mortgage debt. Still, economists often point to limited

borrowing opportunities, or liquidity constraints, to explain certain findings about consumption behavior, labor supply, and the demand for credit.

In **Liquidity Constraints and Imperfect Information in Subprime Lending** (NBER Working Paper No. 13067), authors **William Adams**, **Liran Einav**, and **Jonathan Levin** use unique data from a large U.S. auto sales company to study credit market conditions for precisely the population that is most likely to have a difficult time borrowing: those with low incomes and poor credit histories. These consumers, who typically cannot qualify for regular bank loans, comprise the so-called sub-prime market. The authors combine proprietary data on loan applications, transactions, and repayment records from 2001 to 2004 to provide a snapshot of the market, to analyze consumer borrowing behavior, and to document the informational problems facing sub-prime lenders.

The authors use the data to document two important facts about the market. The first is that this population of consumers appears highly sensitive to cash-on-hand, or liquidity-constrained. The second is that imperfect information substantially constrains lenders in extending credit to this population.

The loan applicants in this dataset fall toward the bottom of both the income distribution and the distribution of credit scores. The U.S. median household income is on the order of \$30,000 dollars; less than half of the company's loan applicants have a Fair Isaac (FICO) score above 500, whereas the national median is over 700. These kinds of low credit scores indicate either a sparse or checkered credit record. Nearly a third

of the loan applicants have neither a checking nor a savings account.

The company's transaction records indicate a high demand for borrowing. The average purchaser finances around 90 percent of the price of the automobile, with the average loan size being around \$11,000. Repayment is highly uncertain: more than half of the loans default, and the majority of these default within

“The average purchaser finances around 90 percent of the price of the automobile, with the average loan size being around \$11,000. Repayment is highly uncertain: more than half of the loans default, and the majority of these default within the first year of repayment.”

the first year of repayment. Interest rates reflect the high probability of default: a typical loan in the authors' dataset has an annual interest rate on the order of 25–30 percent.

The evidence on liquidity constraints comes in two forms. First, the authors document a striking degree of seasonality in purchasing: demand is almost 50 percent higher in February, when consumers receive tax rebate checks, than in other months. This seasonal spike in demand correlates closely with eligibility for the earned income tax credit. Second, the authors estimate that consumers' purchasing decisions are much more sensitive to immediate down payment requirements than to changes in the price of the car, which can be financed. Without liquidity constraints, only an inordinately high degree of impatience would explain these differing sensitivities.

The authors then use the data on

borrowing and repayment behavior to estimate the informational problems facing lenders. They estimate that, all else equal, extending a given buyer an additional \$1000 in credit increases the default rate on the loan by around 15 percent. This kind of sensitivity of repayment to loan size is the driving force in moral hazard models of credit imperfections. At the same time, a buyer who

chooses to finance an extra \$1000 of her purchase (that is, who self-selects into a larger loan) has an even greater default rate, around 24 percent higher than a buyer who opts to pay the \$1000 dollars upfront. In other words, the decision to finance more heavily reveals additional adverse information about the likelihood of default, as in standard models of adverse selection.

The authors do not provide a welfare analysis or specific evidence on the growth in sub-prime lending that has occurred over the last decade. The last part of their paper finds that modern credit scoring techniques can go a significant distance toward mitigating adverse selection problems in the credit market, which suggests that innovations in this area may be related to the rise in sub-prime lending. Such credit scoring is less likely to mitigate moral hazard problems in repayment, thereby still restricting credit to sub-prime borrowers.

— Les Picker

Exchange Controls and International Trade

Some years ago, NBER Research Associate and Columbia University Professor **Shang-Jin Wei** and IMF economist **Zhiwei Zhang** learned from a top finance official of a certain country that it was common for both companies and individuals to try to circumvent that country's capital account restrictions. A

common practice, the source allowed, was mis-invoicing imports, exports, or both. The government naturally reacted by stepping up inspections of goods passing through the customs to make sure that they are not mis-reported to evade capital controls. From this, the economists concluded that attempts to

enforce exchange controls most likely raised the cost to firms of engaging in importing and exporting. Just how costly this might be is reported in their study, **Collateral Damage: Exchange Controls and International Trade** (NBER Working Paper No. 13020).

For their study, Wei and Zhang use

data on capital account restrictions collected by the International Monetary Fund (IMF) since 1996 on 184 countries. The IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER) uses up to 192 indicators to track exchange controls for individual member countries. From this database, Wei and Zhang are able to construct three broad categories of indicators for 1) controls on proceeds from exports and payments for imports, 2) controls on capital transactions, and 3) controls on foreign exchange (FX) transactions and other items not specific to trade or capital transactions.

Wei and Zhang find that countries tend to have more controls on capital transactions and foreign exchange transactions than on trade payments. At the same time, countries with more controls in one category are also likely to have more controls in the other categories. Broadly speaking, the researchers observe that all three indices showed a moderate decline during the years 1996–2005 for countries instituting multiple controls.

There are substantial differences across countries as well as variation over time for many countries. Wei and Zhang illustrate this point with a close examination of the patterns for three developing countries—Brazil, Chile, and Malaysia—and one OECD country,

Greece. Each of these countries experienced substantial changes in its controls during the sample period.

The researchers conclude that economically and statistically significant evidence exists to confirm their suspicions about the “collateral damage” to international trade brought on by exchange controls. They report that an increase by a single standard devia-

“The experience of the emerging market economies during the late 1990s suggests that controls on capital transactions that are intended to regulate capital flows also tend to harm trade substantially.”

tion in the controls on foreign exchange transactions reduces trade by the same amount as an increase in the tariff rate of 11 percentage points. A comparable increase in the controls on trade payments has the same negative effect on trade as an increase in the tariff rate of 14 percentage points. The experience of the emerging market economies during the late 1990s suggests that controls on capital transactions that are intended to regulate capital flows also tend to harm trade substantially. According to these researchers, the collateral damage of exchange controls should therefore be part of any assessment of the desirability of capital account liberalization.

Wei and Zhang caution that their study is only a first step towards understanding the effects of exchange controls

on trade. It is possible, they note, that the effects are non-linear; that is, the same measure in an already restrictive exchange control regime may do more harm than in a less restrictive regime. Moreover, the effects may vary by sectors: exchange controls may raise the cost of trading in more differentiated products more than the cost of trading in homogeneous products; as differen-

tiated products have a greater variance in their unit values over different varieties, it may be more difficult for traders to convince bureaucrats that a particular transaction is not mis-invoiced to evade exchange controls. In such a case, exchange controls imply one more distortion by affecting a country's pattern of specialization.

The effects may also interact with other features of the economy; the same exchange controls may do either more or less damage in a governance-challenged economy, depending on whether corruption primarily weakens the exchange controls or exacerbates the burden of complying with the controls. Such questions, Wei and Zhang suggest, are worthy of further research.

— Matt Nesvisky

NBER

The National Bureau of Economic Research is a private nonprofit research organization founded in 1920 and devoted to objective quantitative analysis of the American economy. Its officers are:

Martin Feldstein — President and Chief Executive Officer

Susan Colligan — Vice President for Administration and Budget

Elizabeth E. Bailey — Chairman

John S. Clarkeson — Vice Chairman

Contributions to the National Bureau are tax deductible. Inquiries concerning the contributions may be addressed to Martin Feldstein, President, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398.

The NBER Digest summarizes selected Working Papers recently produced as part of the Bureau's program of research. Working Papers are intended to make preliminary research results available to economists in the hope of encouraging discussion and suggestions for revision.

The Digest is issued for similar informational purposes and to stimulate discussion of Working Papers before their final publication. Neither the Working Papers nor the Digest has been reviewed by the Board of Directors of the NBER.

The Digest is not copyrighted and may be reproduced freely with appropriate attribution of source. Please provide the NBER's Public Information Department with copies of anything reproduced.

Individual copies of the NBER Working Papers summarized here (and others) are available free of charge to Corporate Associates. For all others, there is a charge of \$5.00 per downloaded paper or \$10.00 per hard copy paper. Outside the United States, add \$10.00 per order for postage and handling. Advance payment is required on all orders. Contact the Publications Department at (617) 868-3900 or visit www.nber.org/papers. Please have the Working Paper Number(s) ready.

Subscriptions to the full NBER Working Paper series include all 700 or more papers published each year. Subscriptions are free to Corporate Associates. For others within the United States, the standard rate for a full subscription is \$3200; for academic libraries and faculty members, \$2300. Higher rates apply for foreign orders. The on-line standard rate for a full subscription is \$1750 and the on-line academic rate is \$725.

Partial Working Paper subscriptions, delineated by program, are also available. For further information, see our Web site, or please write: National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398.

Requests for Digest subscriptions, changes of address, and cancellations should be sent to Digest, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398. Please include the current mailing label.