

IN THIS ISSUE

- Economic Crisis and Medical Care Usage
- Bankruptcy Reform in 2005 Exacerbated the Mortgage Crisis
- Agricultural Commodities and the U.S. Ethanol Mandate
- The Internet and the Organization of Innovation
- Health, Income, and Education among Military Retirees
- Analyzing Five Decades of U.S. Monetary Policy

Economic Crisis and Medical Care Usage

The global economic crisis, which began roughly in July 2007, took an historic toll on national economies and household finances. In **The Economic Crisis and Medical Care Usage** (NBER Working Paper No. 15843), co-authors **Annamaria Lusardi, Daniel Schneider, and Peter Tufano** examine the relationship between the global crisis and individual decisions related to routine medical care. To conduct their study, the researchers survey individuals in Canada, France, Germany, and Great Britain, all of which have universal health care systems, and in the United States, which does not. They find that within all countries, negative shocks to wealth and employment are strongly associated with reductions in routine medical care. The size of the reductions in the use of medical care, however,

depends upon the degree to which individuals must pay for it.

Individuals and families across all five developed countries lost

“Within countries, negative shocks to wealth and employment are strongly associated with reductions in routine medical care.”

wealth through falling stock prices. They also lost income because of unemployment. These effects were strongest in the United States, where nearly 55 percent of American respondents reported some decline in wealth. These losses affected medical care usage. “The greater the reported loss in wealth, the larger the net reductions in routine care,” the authors find.

U.S. citizens, lacking universal coverage and paying the highest out-of-pocket amounts for care, reported the most dramatic reduc-

tion in seeking routine care during the global economic crisis. Between 2007 and 2009, more than 25 percent of Americans reported reduc-

ing their use of health care — a rate two to five times that of Europeans, who also reduced their use of routine medical appointments during this period. Compared with their British counterparts, Americans were 16 percentage points more likely to reduce their use of medical care. The most pronounced reductions were found among the unemployed, the young (ages 16–24), and those with lower incomes.

— Sarah H. Wright

Bankruptcy Reform in 2005 Exacerbated the Mortgage Crisis

Bankruptcy reform in 2005 exacerbated the recent mortgage crisis by making it more difficult and expensive to discharge debt, according to researchers **Wenli Li, Michelle White, and Ning Zhu**.

In **Did Bankruptcy Reform**

Cause Mortgage Default to Rise? (NBER Working Paper No. 15968), they estimate that the 2005 reform caused mortgage default rates to rise 14 percent for prime borrowers and 16 percent for subprime borrowers. They find that this increase in

default rates, which began before the current mortgage crisis, has generated roughly 200,000 additional defaults each year, and exacerbated the recent crisis.

Historically, bankruptcy has helped distressed mortgage-holders

keep their homes. Whether through Chapters 7 or 13 of the bankruptcy code, bankruptcy filings allowed homeowners to unload credit card and other unsecured debt, leaving more money to keep up mortgage payments. The process even was used by households with high incomes and large assets.

But in 2005, reforms made bankruptcy less appealing: they raised the cost of filing by more than 50 percent and reduced the amount of debt that filers could discharge. An “income-only means test” closed off the possibility of some high-income homeowners filing under Chapter 7. Filing

under Chapter 13 further required them to repay some of their credit-

“Bankruptcy reform in 2005... generated roughly 200,000 additional [mortgage] defaults each year...”

card and other unsecured debt from their future earnings.

Another reform made Chapter 13 even less palatable to homeowners with both high income and non-exempt home equity—prior to reform, these borrowers had to use only their non-exempt home equity to pay off unsecured debt; after reform, some of them were required to use their non-exempt income as

well, if it exceeded their non-exempt home equity.

A final reform capped the homestead exemption at \$125,000 for people who had owned their homes for less than 3-1/3 years. This made it tougher for recent home buyers to hold onto their homes if they had substantial equity and lived in states with a high or unlimited homestead exemption.

— Laurent Belsie

Agricultural Commodities and the U.S. Ethanol Mandate

In **Identifying Supply and Demand Elasticities of Agricultural Commodities: Implications for the U.S. Ethanol Mandate** (NBER Working Paper No. 15921), **Michael Roberts** and **Wolfram Schlenker** note that the inflation-adjusted price for an annual diet of 2000 calories a day for one person from rice, corn, wheat, or soybeans generally has trended downwards since 1915. However, following the 2005 U.S. Energy Policy Act, which mandated that 7.5 million gallons of ethanol be produced by 2012, and the 2009 U.S. Renewable Fuel Standard, requiring that 11 billion gallons of ethanol be blended into U.S. gasoline, corn prices nearly quadrupled to \$8.00 a bushel. Prices for rice, wheat, and soybeans rose by similar amounts. The question is how much the US mandate affected world food prices.

The authors use temperature and precipitation data from the Climate Research Unit at the University of East Anglia to estimate weather related yield disruptions as well as deviations from a yield trend, which they then use to derive new elasticities

for the worldwide crop supply. World production and storage data from the Food and Agriculture Organization

“If none of the corn used for biofuel production can be recycled, the ethanol mandate will increase world food prices by about 30 percent.”

suggest that the United States produces 42 percent of the world’s corn. It produces roughly 23 percent of the combined worldwide caloric production of corn, wheat, rice, and soybeans. The 2009 Renewable Fuel Standard was equivalent to mandating that roughly a third of U.S. 2007 corn production, equivalent to about 5 percent of total world caloric production from the above four basic commodities, be used to produce fuel rather than food. The authors estimate that if none of the corn used for biofuel production can be recycled, the ethanol mandate will increase world food prices by about 30 percent. If one third of the caloric input is recycled as distiller’s grain, all estimates scale back one third.

Farmers would respond to these higher prices by producing more though, mainly by increasing the

amount of land under cultivation. Total worldwide caloric production could increase by as much as 3.5

percent. At current levels of productivity, this would require adding an additional 19 million acres to the 80 million acres currently used for corn production in the United States. If the increased output were to be drawn from less productive agricultural areas, then the increase in farmed land would be larger. For example, Brazil would require almost three times as much farmed land as the United States to produce a 3.5 percent increase in caloric production from corn.

The authors estimate that the “resulting expansion of agricultural growing area potentially offsets the CO2 emission benefits from biofuels.”

— Linda Gorman

The Internet and the Organization of Innovation

Both government-based and market-oriented strategies for innovation have contributed to the creation of the modern commercial internet. In **Nurturing the Accumulation of Innovations: Lessons from the Internet** (NBER Working Paper No. 15905), **Shane Greenstein** uses the example of the creation of the internet to analyze the strengths and weaknesses of two distinct ways of organizing a long-term program for accumulating innovation. One approach, which characterized the early development of the internet, relies on autonomous research institutions (“skunk works”) to organize and nurture innovators. The other, which has applied more recently, relies on commercial markets to aggregate dispersed initiatives from a wide array of entrepreneurial participants.

The “skunk works” approach runs the risk that innovation will veer into areas where there is no demand, and thus no economic value. The pre-com-

mercial Internet avoided some of those dangers because the participants in that phase of the internet assessed value from

“Once released to commercial interests, the Internet became the springboard for a dizzying array of applications that were not envisioned by the sponsoring government agencies.”

their own experiences. Their managers, in turn, nurtured them and permitted experimentation to blossom — leading to useful and innovative applications, such as e-mail and packet switching. In addition, the Department of Defense and the National Science Foundation (NSF) played a pivotal role as “demanders” for innovation. Their substantial funding of research institutions, and their distributed investments to universities, supported the innovative activity that led to the breakthrough technologies that underlie today’s Internet. This “skunk works” approach, however, restricted participation and truncated experimentation by excluding innovation along

lines that did not support the “acceptable use” requirements of the government agencies. Such restrictions limited

learning to an artificially narrow range of issues, and left a wide array of other applications untouched.

In contrast to the early “skunk works” days, the more recent commercial era of the Internet has played to the strength of market-based innovation. It has permitted decentralized exploration from commercial firms facing a wide array of incentives and a wide variety of circumstances. Once released to commercial interests, the Internet became the springboard for a dizzying array of applications that were not envisioned by the sponsoring government agencies. These applications include the World Wide Web and its associated browsing technology.

—Lester Picker

Health, Income, and Education among Military Retirees

In **Health, Income, and the Timing of Education among Military Retirees** (NBER Working Paper No. 15778), **Ryan Edwards** examines differences in the timing of educational attainment among male military retirees to explore how education affects personal health and income. His data come from the 2003 Survey of Retired Military, which asked approximately 30,000 retirees to report their income, home ownership, disabilities, Veterans Administration disability classification, and health status. It also asked respondents to report their levels of educational attainment when they entered the military, when they retired from the military, and at the time of the survey.

Edwards finds that the positive association between education and health

declines with the age at which the schooling is completed, by about 0.5 percent per decade of age. Education acquired

“Education acquired during military service improves health, but by less than if the additional years of education had been acquired before joining the military.”

during military service improves health, but by less than if the additional years of education had been acquired before joining the military. Education acquired after retiring from the military has little to any significant effect on health. And, although these findings may reflect selection — that is, officers enter the military with a college degree while enlisted men typically do not, for example — the pattern of sharp reductions in the protective effect of education through age

actually was stronger among officers.

Comparing the health effect of education with its income effect is also

revealing. Edwards finds that vintages of education affect income differently than they affect health. Schooling has a positive and roughly constant effect on earnings as long as it is acquired either before or during military service: “[e]arnings rise 5.5 percent with each year of education prior to service, then rise 5.8 percent with each year during service.” After retirement, additional education continues to raise earnings but by a smaller amount. One additional year of educa-

tion raises household income by 6.4 percent if acquired prior to service, by 6.1 percent if acquired during service, and by 2.7 percent if acquired after retirement from active duty. Edwards con-

cludes that “both early and later life education are interchangeably important for income and wealth, while early-life education is much more valuable for health.” The upshot is that the protective effect

of education on health in old age appears to derive from the lifelong accumulation of healthy knowledge and behaviors, rather than from flows of income.

—Linda Gorman

Analyzing Five Decades of U.S. Monetary Policy

In (NBER Working Paper No. 15929) **Reading the Recent Monetary History of the U.S., 1959–2007**, co-authors **Jesús Fernández-Villaverde**, **Pablo Guerrón-Quintana**, and **Juan Rubio-Ramírez** develop a model of the U.S. economy and use it to analyze the history of the great American inflation, from the late 1960s to the early 1980s, and of the great moderation of business cycle fluctuations between 1984 and 2007. They divide the nearly fifty-year period into five sub-periods corresponding to different chairs of the Federal Reserve Board of Governors (Martin, Burns-Miller, Volcker, Greenspan, and Bernanke). These researchers find both changes in the volatility of the structural shocks that hit the economy and changes in monetary policy over these decades.

Their analysis suggests that a decline in the volatility of economic shocks accounted for most of the great moderation, while changes in monetary policy accounted for the increase and then the taming of the great American inflation. Results from their model indicate that inflation remained low during the great moderation in large part because of favorable economic shocks.

The authors estimate that if monetary policy had behaved under Burns and Miller in the 1970s as it did later under Volcker, then inflation would have aver-

unlucky chairman: the economy suffered from large and negative shocks during his tenure. In a counterfactual simulation in which the direction of

“Positive and stable investment-specific technological shocks, lowered demand pressures, and labor supply shocks that pressured wages and marginal costs downward together explain most of the Great Moderation.”

aged 4.4 percent per year, rather than 6.2 percent for that decade. In another counterfactual simulation, the authors ask what would have happened if the average monetary policy stance of the Greenspan years had been adopted at the time of Burns’s appointment. They conclude that it would not have made much of a difference: inflation would have been slightly higher, 6.8 percent instead of 6.2 percent, in the 1970s. The authors conclude that monetary policy during the Greenspan years was not too different from monetary policy in the Burns-Miller era, but that it was accompanied by more positive economic shocks.

In the Volcker years the response of monetary policy to inflation was consistently strong, but Volcker was an

the economic shocks during the Volcker period remains fixed, but the magnitude of the shocks is scaled back to match the average volatility over the whole five-decade sample, the price level would begin to fall by the end of 1983, rather than rising at roughly 3 percent per year as it did.

In contrast, economic shocks supported the monetary policy choices made in the 1990s. Positive and stable investment-specific technological shocks, lower demand pressures, and labor supply shocks that pressured wages and marginal costs downward explain most of the great moderation. Without changes in the volatility of these shocks, the reduction in the variability of inflation would have been only one-fifth of what was observed.

—Claire Brunel

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