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Consumer Spending and the Economic Stimulus Payments of 2008

A recent NBER study by **Jonathan Parker, Nicholas Souleles, David Johnson**, and **Robert McClelland** finds that households spent an average of 12 to 30 percent of the government's 2008 economic stimulus payments on nondurable goods and another significant portion on durable goods, especially cars and trucks. In **Consumer Spending and the Economic Stimulus Payments of 2008** (NBER Working Paper No. 16684), the authors conclude that, in total, consumers spent an average of 50 to 90 percent of the one-time payments they received during the three months in which they received them.

The federal government distributed $100 billion to some 130 million taxpayers as part of the stimulus program. The authors conclude that the stimulus payments directly boosted personal consumption expenditures somewhere between 1.3 and 2.3 percent during the second quarter of 2008. This direct boost to spending does not include any effects that operate through the macroeconomy, such as from the multiplier effect of fiscal stimulus or increases in prices.

> "Stimulus payments boosted personal consumption expenditures somewhere between 1.3 and 2.3 percent during the second quarter of 2008."

The spending response on nondurable goods in 2008 was a little smaller than many of the estimates associated with a previous stimulus program, that in 2001. However, the 2008 payments were roughly twice the size of the earlier payments — individual tax filers got $300 to $600, couples received $600 to $1,200, and an additional $300 per child. Also, studies of the 2001 stimulus found little evidence of change in durable goods spending, while this study of the 2008 payments finds a significant boost in that sector, primarily in sales of new vehicles.

Generally, lower-income and older households spent more of the stimulus than others. Homeowners spent more than renters.

The authors estimate the causal effect of the stimulus payments by taking advantage of questions added to the ongoing Consumer Expenditure Survey and the randomized nature of the timing of the payments. The majority of households received their stimulus payments via paper checks that were mailed over a nine-week period between early May and early July. Households who had set-up direct deposit for their regular spring-time tax refunds received their stimulus payments more quickly, over a three-week period between late April and early May. In each case, the particular timing of receipt was determined by the last two digits of the tax filer's Social Security

number, digits that are effectively randomly assigned. The researchers also use a new question added to the consumer survey to determine the accuracy of consumers' self-reports of how they used their stimulus payments. Indeed, those consumers who said they spent most of their payment did spend more than those who claimed to have saved most of their payment. But the authors find that even those self-avowed savers spent a statistically significant portion of their payments. "[R]elying on self-reports can understate the actual amount of spending," the authors conclude.

— Laurent Belsie

The Drawdown of Personal Retirement Assets

Over the past thirty years, retirement savings for private sector workers have undergone a dramatic shift, from employer-provided defined benefit pension plans typically paid out in the form of lifetime annuities to personal retirement accounts (PRAs) in defined contribution pension plans, such as 401(k)s. In 2008, private sector PRA assets totaled $7.1 trillion while assets in traditional private sector defined benefit programs totaled $2 trillion. How households draw down the balances that they accumulate in these retirement saving accounts can have an important effect on their retirement income security.

At the time of retirement, the PRA participant typically has sole control of the accumulated assets and can decide when to withdraw them. In **The Drawdown of Personal Retirement Assets** (NBER Working Paper No. 16675), authors **James Poterba, Steven Venti**, and **David Wise** present new evidence on how PRA assets are drawn down, focusing in particular on patterns in the early years of retirement. Analyzing data from the Survey of Income and Program Participation and the Health and Retirement Study, the authors find a relatively modest rate of withdrawals prior to the age 70 1/2, when households are required to take minimum required distributions. Only 7 percent of PRA-owning households between the ages of 60 and 69 take annual distributions of more than 10 percent of their PRA balance, and only 17 percent of that group make any withdrawals in a typical year.

The rate of distributions rises sharply after age 70 1/2: the proportion of PRA-owning households making a withdrawal jumps to over 60 percent by age 71, and crosses 70 percent a few years later. The sharp increase in withdrawals when distributions become mandatory suggests that many households in their early 70s would not make withdrawals if it were not for the distribution rules.

The low rate of withdrawals from PRAs during the sample period in this study, 1997–2005, along with investment returns to PRA assets and contributions to PRAs by some individuals who were still employed, generated a pattern of increasing average PRA balances by age. Rather than declining in value after households retire and begin to finance retirement consumption, PRA balances continue to grow through at least age 85 in many cases, although the rate of growth is slower at older ages than at younger ages. On average, households aged 60 to 69 with PRA accounts withdraw only about 2 percent of their account balances each year, considerably less than their rate of return during the period under study. Even after the required minimum distribution age, the percentage of balances withdrawn remains at about 5 percent which, for most years, was below the average return on PRA assets.

"On average, households aged 60 to 69 with personal retirement accounts withdraw only about 2 percent of their account balances each year."

While average withdrawal rates are low, there is substantial variation across households, and some of them withdraw a significant proportion of PRA assets. Among households headed by someone between the ages of 60 and 69, roughly 10 percent of PRA owners make an annual withdrawal of 5 percent or more of their PRA assets. Those with higher balances are more likely to make a withdrawal than those with lower balances. Among those who make a withdrawal, the PRA balance is the most important determinant of the proportion of assets withdrawn.

At ages 72 and older in contrast, after required distributions begin, 41 percent of households withdraw more than 5 percent of their PRA balance in a typical year, 23 percent withdraw more than 10 percent of balance, and 11 percent withdraw more than 20 percent of their balance.

There are also substantial differences in PRA balances across households. The authors estimate that while only 8 percent of households in the lowest decile of non-PRA wealth, income, and health status have a PRA as they approach retirement, about 80 percent of households in the top decile of non-PRA wealth, income, and health status have such accounts. Households in poor health are less likely than those in good health to have a PRA.

— Lester Picker

Programs to Affect Clean Electricity Demand Need Careful Design

The purchase of a hybrid car, solar panels, or home weatherization products may be justified to an individual based on the payback period, but in many cases the rate of return is too low to fully explain such purchases. Indeed, the purchase of certain green products or carbon offsets, or participation in green-electricity programs, may operate more like charitable contributions, with a primary goal of promoting environmental quality. In **The Behavioral Response to Voluntary Provision of an Environmental Public Good: Evidence from Residential Electricity Demand** (NBER Working Paper No. 16608), authors **Grant Jacobsen, Matthew Kotchen**, and **Michael Vandenbergh** seek to understand why we observe the latter type of pro-environmental behavior, which they refer to as "voluntary provision of an environmental public good", and whether such behavior is in fact beneficial for the environment. In particular, they consider whether individuals who undertake green behaviors do so in part to offset other behaviors that are less than environmentally friendly, whereby the former behavior provides a "moral license" for the latter.

"The reduction in emissions associated with donations in support of green electricity outweighs the increase in emissions brought on by the increased electricity demand."

The authors analyze billing data for participants and nonparticipants in a green-electricity program in Memphis, Tennessee, in which enrolled households make monthly donations for expanding the production of clean energy. The researchers find that households that consume more conventional electricity are more likely to participate in the program and these households make larger donations among the participating households. When evaluating whether the program leads to a behavioral response, the researchers find that households participating *above* a minimum threshold level do not change their electricity consumption, but those participating *at* the minimum threshold increase consumption by 2.5 percent after enrolling in the program. This finding suggests that households motivated by a "buy-in" mentality behave differently than households that choose to contribute beyond the minimum.

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Still, despite the increase in electricity demand among households with an apparent "buy-in" mentality, the net effect of participation on household emissions is a reduction in pollution. That is, the reduction in emissions associated with donations in support of green electricity outweighs the increase in emissions brought on by the increased electricity demand. The authors further find that the net effect of the program, when all participating households are included, is a reduction in pollution emissions. However, they caution that this may not always be the case, and that it is important to take into account the behavioral response when designing and evaluating green-electricity programs. Existing green-electricity certification programs appear to recognize this need and to address it with minimum purchase requirements. The Green-E national standards for certification in the United States, for example, require that capacity based green-electricity programs selling block products, which the Memphis program does, must require a minimum block purchase of 100 kWh/month. The results of this study suggest that such a minimum purchase is large enough to ensure that green-electricity programs are not counterproductive from the standpoint of reducing emissions.

— Lester Picker

Foreclosures, House Prices, and the Real Economy

In **Foreclosures, House Prices, and the Real Economy** (NBER Working Paper No. 16685), co-authors **Atif Mian, Amir Sufi,** and **Francesco Trebbi** demonstrate that foreclosures not only reduce house prices but also were an important factor in weak residential investment and in durable consumption patterns during and after the recession of 2007–9.

The researchers analyze a household-level dataset covering the entire United States until the end of 2009. The dataset includes information on house prices, residential investment, auto sales, mortgage delinquencies, foreclosures, and other variables. This study is unique in its focus on how the state-by-state variation in foreclosures may be driven by state rules regarding whether a foreclosure must be sanctioned by a court. In 21 states, a lender must sue a borrower in court before conducting an auction to sell the property. In states without this requirement, lenders may sell a house after providing only a notice of sale to the borrower.

"Increased foreclosures are associated with a decrease in permits for new residential construction and a decline in auto sales."

The researchers find that states that require a judicial foreclosure had a 3 percentage point lower rate of foreclosures per homeowner during 2008 and 2009 than states without that requirement. Using data on mortgage delinquencies, they also show that states with judicial requirements had a much lower ratio of foreclosures to delinquent accounts. In fact, none of the 14 states with the highest propensity to convert delinquent homes into foreclosure sales require judicial foreclosure.

Aside from these differences in foreclosure rates, the researchers observe that states with a judicial foreclosure requirement are remarkably similar to states without such a requirement. For example, as of the year 2000 there was no difference in the fraction of subprime borrowers, the fraction of lower-income residents, the unemployment rate, the minority share of the population, and the fraction of the residents living in urban areas between the two groups of states. Similarly, there was no evidence of differential credit growth or differential house price growth between 2000 and 2005, and no difference in mortgage delinquency rates during the mortgage default crisis, between the two groups.

Mian, Sufi, and Trebbi further

find that moving from the median rate of foreclosures to the 90th percentile foreclosure rate is associated with 9 percent lower growth in house prices from 2007 to 2009. Increased foreclosures also are associated with a decrease in permits for new residential construction and a decline in auto sales. All of these estimates of the effect of foreclosures control for demographics and for income differences across states.

Mian, Sufi, and Trebbi then use their estimates to quantify the aggregate effects of foreclosures on the macroeconomy. They conclude that foreclosures were responsible for 15–30 percent of the decline in residential investment from 2007 to 2009 and 20–40 percent of the decline in auto sales over the same period.

— Matt Nesvisky

Does Management Matter?

Do differences in management practices cause differences in firm performance? Although economists typically have believed that competition will simply drive badly managed firms out of the market, co-authors **Nicholas Bloom, Benn Eifert, Aprajit Mahajan, David McKenzie,** and **John Roberts** find that that is not the case, at least in the Indian textile industry.

In **Does Management Matter: Evidence from India** (NBER Working Paper No. 16658), the researchers analyze the results of an experiment conducted among large multi-plant textile firms in India. A randomly chosen set of plants received free consulting on modern management practices, while other plants in the industry did not. When the authors compare the performance of the plants that received management advice with those that did not, they find that adopting the recommended management practices had three main positive effects. First, it raised average productivity by 11 percent, through improved quality and efficiency and reduced inventory. The evidence suggests that firms spread the "good management" practices from their plants that received the advice to other plants that they owned.

"[Indian] firms were often not aware of the existence of many modern management practices [and] … they [did not] appreciate how these could improve performance."

Second, it increased decentralization of decision making: owners delegated more power over hiring, investment, and pay to their plant managers. This happened in large part because the improved collection and dissemination of information that was part of the change in management process enabled owners to monitor their plant managers better, making them feel more comfortable with delegating.

Third, it increased the use of computers, which were necessitated by the data collection and analysis that are involved in modern management. Increased computerization, in turn, raised the demand for educated employees.

Because these practices were profitable, the authors ponder why firms had not adopted them before. They find that informational barriers were a primary factor in explaining this lack of adoption. Firms were often not aware of the existence of many modern management practices, such as inventory norms and standard operating procedures, nor did they appreciate how these could improve performance.

Moreover, it appears that firms that are poorly managed are not rapidly driven from the Indian textile market. Indeed, competition is limited by constraints on firm entry and growth. Tariff protectionism prevents entry of foreign competition which would force domestic firms to adopt more efficient practices. And, trust issues prevent delegating, thereby limiting how much additional productivity better management technology can generate from a single manager.

— Claire Brunel

The Effect of Licensing on Dentists and Hygienists

U.S. states require occupational licenses for everyone from surgeons to interior decorators. Licensing in effect creates a regulatory barrier to entry into licensed occupations, and thus results in higher income for those with licenses.

In **Battles among Licensed Occupations: Analyzing Government Regulations on Labor Market Outcomes for Dentists and Hygienists** (NBER Working Paper No. 16560), co-authors **Morris Kleiner** and **Kyoung Won Park** use state variations in dental hygienists' licensing, along with data from the 2001–2007 American Community Survey, to estimate the value created by limiting occupational competition through licensing.

Like dentists, dental hygienists clean teeth, apply sealants, take X-rays, and screen for dental problems. Because dentists are in the majority on the state licensing boards that license dental hygienists in most states, they can in theory create rules that limit the extent to which dental hygienists can compete with them. In fact, most states require dental hygienists to practice under the direct supervision of a dentist, but some allow dental hygienists to own their own practices, clean teeth, and apply sealants.

"States that require dental hygienists to be supervised by dentists suffer a 1 percent annual reduction in the output of dental services."

The authors find that in states that allow dental hygienists to have their own practices, hygienist employment is about 6 percent higher than in other states, and hygienist earnings are about 10 percent higher. At the same time, the growth rate of dentists' employment is lower — 1.5 percent per year versus 2 percent — in these states.

Assuming that less stringent regulation of dental hygienists has no effect on the quality of services they provide to patients, the authors calculate that reducing regulation would reallocate about $1.34 billion from dentists to dental hygienists and would reduce the output losses caused by restricting employment by $80 million. Overall, Kleiner and Park estimate, states that require dental hygienists to be supervised by dentists suffer a 1 percent annual reduction in the output of dental services.

— Linda Gorman

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