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## Household Spending Response to the 2008 Tax Rebate

Between April and December of 2008, about 120 million individuals in the United States received one-time stimulus payments totaling \$96 billion. Those payments began phasing out at incomes above \$75,000 a year, in part because it was argued that lower-income households were more likely to spend their rebates, so policies aimed at those households would be more likely to have stimulative effects.

In **Household Response to the 2008 Tax Rebate: Survey Evidence and Aggregate Implications** (NBER Working Paper No. 15421), co-authors **Claudia Sahm, Matthew Shapiro, and Joel Slemrod** find that what people say they did with their stimulus checks is “strongly at odds with the conventional wisdom.” They estimate that the \$96 billion spent on stimulus generated roughly one third that amount, or \$32 billion, in extra consumer spending.

This study uses data from The Reuters/University of Michigan

Survey of Consumers, a nationally representative survey based on 500 telephone interviews a month. The authors compare the results of

spend the payments. Of those over age 65, 26 percent said they would mostly spend the payments. These results are similar to those observed

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“Absent the rebate, the sharp decline in spending that is evident in aggregate data beginning in the third quarter of 2008 would have started in the second quarter.”

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their analysis to aggregate data on saving, spending, and debt, and to the results from other surveys. They conclude that their results are in accord with these data, and that “[a]bsent the rebate, the sharp decline in spending that is evident in aggregate data beginning in the third quarter of 2008 would have started in the second quarter, prior to the financial crisis of the fall.”

Although the authors find that the stimulus program boosted consumer spending, they report that more than three-quarters of the overall survey respondents said that they would save the stimulus payments or use them to pay down debt. Of those under age 30, only 11 percent said they would mostly

for the 2001 tax rebates.

People with incomes over \$75,000 — roughly the top third of the income distribution — had “mostly-spend” rates about 7 percent higher than the average mostly-spend rate of lower income groups. For those with stock holdings in excess of \$250,000, the mostly-spend rate was almost 40 percent; for those with stock valued between \$100,000 and \$250,000, that rate was 25 percent; for those with stock holdings between \$50,000 and \$100,000, the mostly-spend rate was 14 percent; and for those with stock holdings below that level, the mostly-spend rate was roughly 20 percent. These results do not support the conven-

tional wisdom that younger, lower-income households are more likely to spend a one-time tax rebate.

They are consistent with the possibility that moderate-stock-wealth households are more inclined to

save because, unlike high-stock-wealth households, they have not yet met their savings goals.

— Linda Gorman

## Stock Market Fluctuations and Retirement Decisions

The recent decline in stock market values will have only a muted impact on the retirement of the average early baby boomer, according to NBER Research Associate **Alan Gustman** and his co-authors **Thomas Steinmeier** and **Nahid Tabatabai**. In **What the Stock Market Decline Means for the Financial Security and Retirement Choices of the Near-Retirement Population** (NBER Working Paper No. 15435), they explain that with only around 15 percent of the wealth of workers aged 53 to 58 in stocks, they aren't likely to see a huge hit to their retirement portfolios, despite the market losing roughly a third of its value from its 2007 peak through the fall of 2009. More than a quarter of the household wealth of this group is instead concentrated in anticipated Social Security payments.

The pension wealth of this group is far more dependent on traditional pensions, called defined benefit plans, than on 401(k)s or defined contribution plans, which often are heavily reliant on stock market performance. The simula-

tions in this study suggest that the declines in the stock market will only cause early boomers to postpone retirement by an average of 1.5 months. The drop in housing

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"The net effect of a deep recession and a falling stock market may be an overall increase in retirements."

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prices is also unlikely to greatly affect their retirement plans.

"For most of those approaching retirement age, while losing several percentage points of this total is certainly a significant average loss—and is of greater significance for those who are more exposed to the stock market and will experience even larger losses—these losses will not be life-changing," the authors conclude.

Early boomers might seem to be especially vulnerable to the twin declines in stock and housing markets, since they have little time to recover before reaching retirement age. A 2006 survey of nearly 2,500 households in which at least one member was 53 to 58, conducted as part of the Health and Retirement Study, found that these households had an average

of \$766,945 in total wealth. But Social Security was their single largest asset, representing 26 percent of total wealth on average. Pensions were the second largest

source of wealth: 23 percent on average. Home equity averaged 22 percent. Stocks in defined contribution plans and held directly accounted for only \$116,535, or about 15 percent of the total.

To estimate the effect of stock market declines on retirement, this study looks at the last stock-market plunge: the bursting of the dot com bubble in the early 2000s. It concludes that stock-market plunges have a modest effect on older workers and change the average age of retirement by only a few months. In addition, these modest delays in retirement by some workers trying to make up for stock losses may be swamped by the number of early retirements caused by a lack of good jobs. "Even if the stock market decline, taken alone, modestly decreases the number

of retirements, the recession that started in 2007 may substantially increase retirement due to poor job prospects,” the authors write. “Thus, the net effect of a deep recession and a falling stock market may be an overall increase in retirements.”

On the housing front, the fallout from the big decline in home prices may also be muted for early boomers. Nearly half of early boomer households had no mort-

gage. Almost all of the rest had positive equity. Mortgages represented 39 percent of their home values on average, leaving only a tiny sliver of early boomers — 1.7 percent—with negative home equity in 2006. If housing prices were to fall 20 percent, only 6.4 percent of the households in this age group would be “under water,” according to the study. Typically, it will be many years before these boomers sell their homes to cap-

ture the equity in them.

The study points out that some early boomers may be affected by the combination of stock and housing declines. Those who lose a job may have to retire early or take another job that will likely pay much less. This diversity of winners and losers poses a major policy challenge for those wanting to extend government help to hard-hit early boomers.

—Laurent Belsie

## Credit Booms and Financial Instability

**I**n **Credit Booms Gone Bust: Monetary Policy, Leverage Cycles and Financial Crises, 1870–2008** (NBER Working Paper No. 15512), researchers **Moritz Schularick** and **Alan Taylor** analyze the long-run behavior of money, credit, and macroeconomic indicators. They assemble a new annual dataset for the years 1870–2008 covering 12 countries: the United States, Canada, Australia, Denmark, Germany, Italy, the Netherlands, Norway, Spain, Sweden, and the United Kingdom. With this data, they show that leverage in the financial sector has increased strongly in the second half of the twentieth century, as demonstrated by a decoupling of money and credit aggregates. There has also been a decline

in safe assets on banks’ balance sheets. Monetary policy responses to financial crises have been more

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“Recurrent episodes of financial instability have more often than not been the result of credit booms gone wrong.”

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aggressive post-1945, but despite these policies, the output costs of crises have remained high.

The authors point to the value of long-run comparative data for identifying patterns in the links between financial markets and real activity. In their analysis, two distinct eras of finance capitalism emerge: the first, from 1870 to 1939, in which money and credit were volatile but maintained a roughly stable relationship to each other and to the size of the economy, except for the period of the

Great Depression when the relationship collapsed. The second is the post-World War II era, when

the huge growth in the use of credit and increasingly complex forms of leverage, along with a steady decline in bank-held “safe” assets such as government securities, led to an unprecedented level of risk throughout the credit system up to 2008.

A contributing factor in the post-1945 experience may have been a belief that central banks would step in as the lender of last resort to prevent the collapse of a nation’s currency, as well as regulators’ “hands-off” approach to

the credit system. But the authors observe that the behavior of credit aggregates is the single best predictor for the likelihood of future financial instability.

The government's implicit back-stopping of the financial sector may have prevented a periodic deleveraging of that sector.

The result was a virtually uninterrupted growth of credit and leverage through 2008, a development that contributed to the severity of the current crisis. "The long-run record shows that recurrent episodes of financial instability have more often than not been the result of credit booms gone wrong,

most likely due to failures in the operation and/or regulation of the financial system," the authors write. "In terms of lessons for policymakers and researchers, history demonstrates that they ignore credit at their peril."

— Frank Byrt

## High Quality Schools and the Educational Achievement Gap

The Harlem Children's Zone occupies a 97-block area in New York City and offers over 20 programs to 8,058 youths and 5,291 adults. One of those programs is The Promise Academy elementary and middle schools, which enroll about 1,300 students. The Academies offer extended school day and year, tutoring, remediation, learning incentives, and a number of parental support programs. When applications exceed the number of places, enrollment is awarded by lottery.

In **Are High Quality Schools Enough to Close the Achievement Gap? Evidence from a Social Experiment in Harlem** (NBER Working Paper No. 15473), **Will Dobbie** and **Roland Fryer** find that in the fourth and fifth grade, the math test scores of charter school lottery winners and losers are virtually identical to those of a typical black student in the New

York City schools. After attending the Promise Academy middle school for three years, black students score as well as comparable

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"The Promise Academy public charter schools in the Harlem Children's Zone will increase a [student's probability of scoring at grade level] ... by 11.6 percent ... in sixth grade, 17.9 percent ... in seventh grade, and 27.5 percent ... by eighth grade."

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white students. They are 11.6 percent more likely to be scoring at grade level in sixth grade, 17.9 percent more likely to be scoring at grade level in seventh grade, and 27.5 percent more likely to be scoring at grade level by eighth grade. Overall, Promise Academy middle school enrollment appears to increase math scores by 1.2 standard deviations in eighth grade, more than the estimated benefits from reductions in class size, Teach for America, or Head Start.

The benefits accrue to all subsets of students in the middle

school including those entering above or below median test scores, those eligible for free lunches, and those who were and were not eli-

gible for the Harlem Children's Zone's student-family service bundles of nutritious fruits and vegetables, advice, pre-made meals, and money and travel allowances. The total cost of the Promise Academy charter school was about \$19,272 per student including after-school and "wrap-around" programs. The New York Department of Education funded every charter school at \$12,443 per student in 2008–9, and the median school district in New York State spent \$16,171 per student in 2006.

— Linda Gorman

## The Agglomeration of U.S. Ethnic Inventors

Ethnic composition of U.S. inventors is undergoing a significant transformation. While the foreign-born account for just over 10 percent of the U.S. working population, they represent 25 percent of the U.S. science and engineering (SE) workforce and nearly 50 percent of those with doctorates.

The spatial distribution of ethnic inventors across U.S. cities is neither uniform nor random, though. Instead, there is agglomeration—that is, clustering in a defined area—which reflects the general tendency of both high-skilled and low-skilled immigrants to concentrate in certain U.S. cities. The larger cities often are favored for their greater opportunities for assimilation, but geographical distances of cities to home countries and past immigration networks also are important.

In **The Agglomeration of U.S. Ethnic Inventors** (NBER Working Paper No. 15501), author **William Kerr** contributes to our under-

standing of agglomeration and its relationship to innovation by documenting patterns in the city-level

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“The spatial concentration of ethnic inventors increased significantly from 1995 to 2004, especially in high-tech sectors like computer-related patenting.”

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agglomeration of ethnic inventors within the United States. He applies an ethnic-name database to individual U.S. patent records in order to explore these trends in greater detail.

Kerr finds that ethnic inventors have higher levels of spatial concentration than their non-ethnic counterparts throughout the thirty-year period that he studies. Moreover, he observes that the spatial concentration of ethnic inventors increased significantly from 1995 to 2004, especially in high-tech sectors like computer-related patenting. The combination of greater ethnic shares and increasing agglomeration of ethnic inventors has helped to reverse the 1975-94 declines in

the overall concentration of U.S. invention. These trends are confined to industrial patents, though;

universities and government bodies that are constrained from agglomerating do not show recent increases in spatial clustering.

Kerr describes the ethnic composition of U.S. inventors for 1975–2004. He groups granted patents by application years. The trends demonstrate a growing ethnic contribution to U.S. technology development, especially among Chinese and Indian scientists. Ethnic inventors are more concentrated in high-tech industries, like computers and pharmaceuticals, and in gateway cities relatively closer to their home countries—for example, Chinese in San Francisco, Europeans in New York, and Hispanics in Miami.

—Lester Picker

## The Effect of Immigration on Productivity: Evidence from U.S. States

During the 1990s and the 2000s immigration significantly increased the presence of foreign-born workers in the United States, but the increase was very unequal across states. In **The Effect of**

**Immigration on Productivity: Evidence from U.S. States**, (NBER Working Paper No. 15507), author **Giovanni Peri** analyzes state-by-state data to determine the impact of immigration

on a variety of labor market outcomes, including employment, average hours worked, and average skill intensity, and on productivity and income per worker.

Peri reports a number of

distinct findings. First, immigrants do not crowd-out employment of (or hours worked by) natives; they add to total employment and reduce the share of highly educated workers, because of their larger share of low-skilled workers relative to native workers. Second, immigrants increase total factor productivity. These productivity gains may arise because of the more efficient allocation of skills to tasks, as immigrants are allocated to manual-intensive jobs, promoting competition and pushing natives to perform communication-intensive tasks more efficiently. Indeed, a measure of task-specialization of native workers induced by immigrants explains half to two thirds of the positive effect on productivity.

Third, Peri finds that inflows of immigrants decrease capital intensity and the skill-bias of production technologies. The decrease in capital intensity comes from an increase in total factor productivity; the capital-to-labor ratio remains unchanged because investment rises

coincident with the inflow of immigrants. The reduction in the skill-intensity of production occurs as immigrants influence the choice

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“A one percent increase in employment in a U.S. state, attributable only to immigration, is associated with a 0.4-0.5 percent increase in income per worker in that state.”

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of production techniques toward those that more efficiently use less educated workers and are less capital intensive.

Finally, Peri finds that for less educated natives, higher immigration has very little effect on wages, while for highly educated natives, the wage effect of higher immigration is positive. In summary, he finds that a one percent increase in employment in a U.S. state, attributable only to immigration, is associated with a 0.4 to 0.5 percent increase in income per worker in that state.

A central challenge in establishing a causal link between immigration and economic outcomes is the fact that immigrants may be dispropor-

tionately attracted to states with strong economic performance. Peri recognizes this problem, and uses information on state characteristics,

such as the location of a state relative to the Mexican border, the number of ports of entry, as well as the existence of communities of immigrants there before 1960 to predict immigrant inflows. He then studies how these predicted inflows, rather than actual inflows, are related to labor market outcomes. He argues that the state characteristics that underlie his predictions are not likely to be associated with either labor market outcomes or productivity. He also controls for several other determinants of productivity that may vary with geography such as R and D spending, computer adoption, international competition in the form of exports, and sector composition.

— Claire Brunel

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