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Explaining the Rise of Unemployment

Unemployment rose dramatically during the Great Recession because highly indebted consumers slashed their spending, according to **Atif Mian** and **Amir Sufi** writing in **What Explains High Unemployment? The Aggregate Demand Channel** (NBER Working Paper No. 17830). They find that shocks to household balance sheets account for 4 million of the 6.2 million jobs lost in the United States between March 2007 and March 2009.

The stage was set for a substantial shock to household balance sheets during the housing bubble. Housing prices rose sharply, but homeowners borrowed even more aggressively. Between 2001 and 2007, household debt doubled from $7 trillion to $14 trillion. Homeowners' debt-to-GDP ratio rose sharply, from 0.7 to 1.0, during the same period. When housing prices collapsed, households were stuck with much higher debt, forcing them to cut back spending, which has shaped the depth and length of the economic slump that followed.

Earlier research by these authors and others had already demonstrated the link between dramatically weaker household balance sheets and plummeting consumer spending. In high-debt U.S. counties, housing prices fell by nearly 30 percent from 2006 to 2010. Households in those counties slashed consumption of durable goods and even cut back grocery spending. In the 10 percent of U.S. counties with the lowest debt-to-income ratios, house prices didn't fall and the fall in consumption wasn't as dramatic. Consumption of durable goods fell 20 percentage points more in high-debt counties than in low-debt counties.

> "Weak household balance sheets and the resulting aggregate demand shock are the main reasons for historically high unemployment in the U.S. economy."

The high-debt counties got that way, at least in part, because of the housing bubble. During the boom, housing prices didn't rise uniformly: the biggest increases came in counties with terrain or regulatory environments that made it more difficult to build new homes. In turn, homeowners in those counties were more apt to boost their debt to unprecedented levels. This finding is important not only because it explains the variability of debt, but also because it points out the absence of a construction boom and bust in many of the most indebted counties.

Mian and Sufi find that employment losses in the non-tradable sector were greater in the U.S. counties with the most highly indebted households than in other counties. In the tradable sector, however, employment losses were more uniform across the United States. The relationship between high debt-to-income ratios and the sharp decline in non-tradable goods purchases allows the authors to estimate the impact of shocks to balance sheets, and therefore on aggregate demand and on nationwide employment.

"Our main insight is that the relation between demand shocks and employment losses in industries catering to local demand can be used to estimate the effect of aggregate demand on aggregate unemployment," the authors conclude. "We believe that weak household balance sheets and the resulting aggregate demand shock are the main reasons for historically high unemployment in the U.S. economy."

— Laurent Belsie

Liquidity Constraints and Consumer Bankruptcy

Over the past three decades, consumer bankruptcy rates have tripled. As of the late 1990s, nearly 10 percent of American households had declared bankruptcy. In the early years of the last decade, the annual rate of bankruptcy filing among American households was over 1.3 percent. In an attempt to slow the increase in bankruptcies, the 2005 Bankruptcy Abuse Prevention and Consumer Protection Act required that bankruptcy filers undergo mandatory credit counseling at their own expense and it raised the legal and administrative fees that households must pay in order to declare bankruptcy from an average of $921 before the reform to an average of $1,477 after the reform.

In **Liquidity Constraints and Consumer Bankruptcy: Evidence from Tax Rebates** (NBER Working Paper No. 17807), authors **Tal Gross, Matthew Notowidigdo**, and **Jialan Wang** exploit the variation in liquidity induced by the 2001 and 2008 income tax rebates in order to estimate the effect of a one-time, anticipated increase in liquidity on consumer bankruptcy filings. The rebates, which varied between $300 and $1200 per household, were randomly distributed to households over an approximately ten week period in both years.

> "Some households do not have the liquid assets that are needed to cover the costs of bankruptcy filing; receiving tax rebates provided the needed liquidity."

The researchers find that the tax rebates led to a significant, short-run increase in consumer bankruptcies: total bankruptcies increased by roughly 2 percent after the 2001 rebates and by 7 percent after the 2008 rebates. The increase in bankruptcy filings was consistent with the presence of liquidity constraints for many households. Some households do not have the liquid assets that are needed to cover the costs of bankruptcy filing; receiving tax rebates provided the needed liquidity. The authors find no evidence that the increase in filings came from bankruptcies that would not have occurred otherwise. Instead, the rebates seem to have allowed households that would have filed for bankruptcy eventually to do so months earlier than they otherwise would have.

— Lester Picker

Valuing the Vote

The Voting Rights Act of 1965 (VRA) has been called one of the most effective pieces of civil rights legislation in U.S. history. The VRA removed literacy tests as a barrier to black citizens' political participation in seven of eleven southern states. By 1967, black voter registration rates in all southern states exceeded 50 percent, compared with less than 8 percent in Mississippi just prior to the legislation's passage. Black voter turnout increased commensurately.

In **Valuing the Vote** (NBER Working Paper No. 17776), authors **Elizabeth Cascio** and **Ebonya Washington** study how VRA-induced enfranchisement affected the distribution of state resources. Because of residential segregation, changes in the share of county residents who were newly enfranchised varied across localities within each state, and the authors exploit this variation to perform their analysis. They test for post-VRA shifts in the relative distribution of state transfers toward localities with larger black populations in literacy-test versus non-literacy-test southern states. They find that not only did turnout in higher black share localities increase disproportionately in states that removed the literacy test as a result of the VRA, but also that state funding transfers to these localities increased. The same black communities that saw an increase in enfranchisement-driven turnout saw an increase in their share of the state resource pie.

> "The same black communities that saw an increase in enfranchisement-driven turnout saw an increase in their share of the state resource pie."

The authors systematically rule out competing explanations for the change in state transfers and show that it is likely that enfranchisement led to an increase in resource receipt. That conclusion is consistent with theories of distributive politics in which politicians target resources to identifiable, targetable, and politically persuadable interest groups in order to earn their political support. The findings suggest that the Voting Rights Act provided substantive, rather than merely symbolic, political gains to southern blacks.

— Lester Picker

Does Linking Worker Pay to Firm Performance Help the Best Firms Do Even Better?

In **Does Linking Worker Pay to Firm Performance Help the Best Firms Do Even Better?** (NBER Working Paper No. 17745), co-authors **Douglas Kruse, Joseph Blasi**, and **Richard Freeman** find that firms that make greater use of group incentive pay with supportive policies decrease voluntary turnover by almost 11 percentage points. Those same firms also enjoy a higher return on equity as a result of combining group incentive pay with policies that develop participatory decision making, high information sharing, and high-trust supervision.

Using data from the 780 companies that applied to the Great Place to Work Institute to be considered one of the "100 Best Companies to Work for in America" from 2005 through 2007, the authors create an index describing the extent of group incentive compensation plans. In general, the companies that apply for this designation are better performing, with a return on equity estimated to be 3.9 percent higher than the industry-year average for firms of the same size. Group compensation, used by about half of the firms in the sample, is measured using a "shared capitalism index" that combines the presence, worker coverage, and impact on worker earnings of Employee Stock Ownership Plans, cash profit sharing plans, gain sharing plans, Deferred Profit-Sharing Plans, and stock options granted in the past year.

"Firms that make greater use of group incentive pay decrease voluntary turnover by almost 11 percentage points."

Kruse, Blasi, and Freeman also examine the effect of corporate culture on performance, and the interaction of culture with modes of shared compensation. Their measures of corporate culture come from surveys filled out by individual employees as part of the 100 Best Companies evaluation process, which include questions as about the extent to which "management trusts people to do a good job without watching over their shoulders"; whether people working at a company felt they could "count on people to cooperate"; and whether employees felt that they received "a fair share of the profits made by this organization." Firm management also reported on work practices and turnover.

The authors conclude that the combination of group incentive pay and policies that empower employees create a positive workplace culture, and that has the largest effect on voluntary turnover and on the return on equity. They find that ESOPs and deferred profit sharing are particularly linked with supportive policies and culture.

— Linda Gorman

Time as a Trade Barrier

In **Time as a Trade Barrier** (NBER Working Paper No. 17758**),** co-authors **David Hummels** and **Georg Schaur** study the choice that firms make between delivering their products by air or sea. Delivery times are much shorter for air freight than for ocean freight, but shipping by air is also much more expensive than shipping by sea. Still, a large and growing share of international trade is carried on airplanes. That leads these researchers to ask whether lengthy shipping times impose costs that impede trade and, if so, whether firms engaged in trade exhibit significant willingness-to-pay to avoid these costs.

The authors find that the choice between air and ocean cargo depends on the price elasticity of demand for the product and on the value that consumers attach to fast delivery. That choice is revealed in the relative market shares of firms who air and ocean ship. Because air shipping is expensive, consumers will shift purchases away from the firm that air ships in proportion to the price elasticity of demand. And, conditional on prices, consumers will shift purchases toward the firm that air ships in proportion to the valuation of their time. By combining estimates of these two effects, the authors extract the price-equivalent of the consumers' valuation of each day of delay.

"Each day in transit is worth between 0.6 and 2.2 percent of the value of the good."

Using data on U.S. imports, which provide rich variation in the premium paid for air shipping and in time lags for ocean transit, they find two effects. First, long transit delays significantly lower the probability that a country will successfully export a good. Second, conditional on trade taking place, they estimate that each day in transit is worth between 0.6 and 2.2 percent of the value of the good.

However, these estimates vary across goods, with especially high time sensitivity exhibited in the end-use categories motor vehicles and parts, capital goods, and parts-and-components. Indeed, parts-and-components have a time sensitivity that is 60 percent higher than that of other goods. These results suggest a link between sharp declines in the price of air shipping and rapid growth in trade.

— Claire Brunel

The Collapse of the Soviet Union and the Productivity of American Mathematicians

In **The Collapse of the Soviet Union and the Productivity of American Mathematicians** (NBER Working Paper No. 17800), **George Borjas** and **Kirk Doran** measure the impact of the influx of renowned Soviet mathematicians on the American (and global) mathematics community after the collapse of the Soviet Union. Over 1,000 Soviet mathematicians migrated to other countries, with about 30 percent settling in the United States. These émigrés, who had long worked in relative isolation from their western counterparts, brought with them a wealth of new theorems, approaches, and ideas that earned them coveted positions in universities and ready access to professional journals. The authors find that in the United States, much of this success came at the expense of their American counterparts.

Using a database provided by the American Mathematical Society, the authors study the location, affiliation, and publication and citation records of mathematicians who were active in either the Soviet Union or the United States for the past few decades. They show that the typical American mathematician whose research most overlapped with that of the Soviets suffered a reduction in productivity after the collapse of the Soviet Union and the emigration of Soviet researchers

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After studying the pre-1992 age-output profile of American mathematicians, Borjas and Doran analyze the post-1992 output of U.S. mathematicians whose work paralleled that of their Soviet counterparts. These Americans might have been expected to benefit from the influx of Soviet researchers and their ideas, since they would have an expanded set of colleagues and the possibility of collaboration. Yet the American mathematicians' productivity was far below what would have been expected.

The data reveal that because of the increase in the number of mathematicians competing for the relatively fixed number of research jobs, American mathematicians became much more likely to switch institutions, and that switch sometimes entailed a move to a lower quality institution. Moreover, because of the increased competition in the international journals market, many of these American mathematicians ceased publishing relatively early in their careers and became much less likely to publish a particularly influential research paper after the arrival of the Soviet émigrés. The resulting gap in output to a large extent was filled in by the émigrés.

While they find important shifts in the composition of research output, Borjas and Doran do not find in the years after the émigrés arrived any substantial increase in the aggregate output of mathematicians based in American universities and other institutions.

— Matt Nesvisky

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