Editors' Summary

THE BROOKINGS PANEL ON ECONOMIC ACTIVITY held its ninety-second conference in Washington, D.C., on September 15 and 16, 2011, as the nation fiercely debated the appropriate policy response to a disappointing recovery from the Great Recession. The contributions to this volume of the *Brookings Papers* provide new insights into macroeconomic fluctuations and into government actions to promote employment and growth.

The first three papers focus on the labor market. The first demonstrates that unemployment is terribly costly, much more so than conventional models imply. The second undertakes a thorough analysis of small businesses and of their owners' motivations, showing that, contrary to conventional wisdom, these businesses do not drive either employment growth or innovation. The third finds that the extensions in the duration of unemployment insurance benefits enacted in response to the Great Recession are contributing only a very small amount to unemployment.

The next two papers study monetary policy. The fourth paper analyzes the various channels through which quantitative easing affects interest rates, finding that not just the magnitude but also the composition of the Federal Reserve's asset purchases is critical to their effects. The fifth paper discusses practical monetary policy, focusing on the recent experiences of the United States and Sweden.

This volume also marks an innovation in the *Brookings Papers,* in which the authors of two previous studies revisit their earlier conclusions in light of newly available data. Thus, the sixth paper returns to an earlier study of the performance of the labor market during the Great Recession, and the seventh paper reexamines the case for giving greater attention to an alternative way of measuring GDP. Both papers confirm and extend the findings of the earlier ones.

IN THE FIRST PAPER, Steven Davis and Till von Wachter study the long-term consequences of job loss, particularly for workers with long tenure in their jobs. In order to isolate the effects directly attributable to job loss (as opposed to the consequences of differences in characteristics between job losers and other workers), Davis and von Wachter focus on workers who lose their jobs in mass layoffs. Job losses among long-tenure workers are an important part of recessions: between 2007 and 2009, 6.9 million workers with at least 3 years of tenure lost their jobs in mass layoffs. How costly are these job losses? If the displaced workers found jobs immediately at salaries comparable to their original pay, they would not be greatly harmed. But in fact their average earnings losses are not only enormous, but worse in bad times than in good: workers laid off in economic expansions see an immediate 25 percent drop in their annual earnings, but those laid off in recessions see a 39 percent drop. In both cases, moreover, substantial effects persist for decades. Combining these short- and long-term effects, Davis and von Wachter find that job displacement reduces lifetime earnings by about 12 percent on average: 19 percent in recessions and 11 percent in expansions.

The long-term costs of job loss thus figure importantly in the total cost of recessions. By contrast, the authors show that standard models of unemployment imply virtually no long-term consequences of being laid off. In the canonical model, workers who lose their jobs experience, on average, a loss of only 0.2 percent of lifetime earnings—an amount that understates the observed costs by a factor of 60! The problem is that in the standard model, all jobs are the same and workers find new jobs very quickly. Even when Davis and von Wachter study models where workers accumulate firm-specific skills—which give rise to tenure effects that ensure that job loss is costlier than in the canonical model—the predicted long-term cost is about 3 percent of lifetime earnings, still far short of what the data suggest. Because these models miss one of the main consequences of job loss, namely, the destruction of an apparently valuable worker-firm relationship, Davis and von Wachter argue that they do not provide a useful guide for policymakers deciding how to respond to recessions.

ONE POSSIBLE POLICY RESPONSE TO high, costly unemployment—and a policy often recommended to promote growth and employment more generally—is to subsidize small business, on the theory that small businesses innovate more and create more jobs than larger businesses. But is this theory correct? Surprisingly little is known about what the typical small business

does. In the second paper, Erik Hurst and Benjamin Wild Pugsley provide valuable evidence on what small businesses do and whether they actually create a disproportionate share of new jobs.

Most small businesses, it turns out, are not economic dynamos. In a survey of small businesses in 2003, only 14 percent reported adding jobs in the previous year, and only 21 percent had added jobs in the previous 3 years. In another survey, among firms founded in 2004, 58 percent added no jobs between 2004 and 2008, and 89 percent added fewer than five. As Hurst and Pugsley note, "Most firms start small and stay small."

One reason for these patterns is that most small businesses enter industries in which individual firms often have little room for expansion. Small businesses are concentrated in relatively few industries: just 40 industries (out of the 294 that the authors examine) account for about two-thirds of all small businesses. The typical small business is in an industry like plumbing, contracting, legal services, or real estate. New small businesses generally enter industries and choose locations in which firms in the same industry already operate, and as Hurst and Pugsley show, they generally do not innovate. In one survey they examine, just 2.7 percent of small business owners reported patenting anything in their first 4 years, and another found that only about a fifth reported developing any proprietary technology at all in their first 5 years. Forty percent of new business owners in the latter survey stated that many existing firms already offer the same product or service to the same customer base. Indeed, the survey data confirm that most small firms have no desire to grow big, and no desire to innovate.

If most small business owners have no interest in growing or innovating, why do they start a business at all? Hurst and Pugsley find that nonpecuniary factors are important. More than half of all small business owners report that nonfinancial considerations such as "want[ing] to be my own boss" or "enjoy the work" are important considerations. And those who reported these motivations were less likely to want to innovate and grow and to actually innovate than those who said they started their business because they thought they had a good business idea or because they wanted to create a new product.

These results overturn the conventional wisdom that small businesses are the drivers of economic growth. Although some small businesses do contribute substantially to growth, most do not. Hurst and Pugsley conclude that policymakers hoping to encourage employment growth, and researchers hoping to understand firm growth, should focus on those small businesses that actively want to grow—as demonstrated, for example, by their seeking venture capital—rather than address small businesses in general.

ONE NOTABLE FEATURE OF THE recent recession and its aftermath has been the extension of eligibility for unemployment insurance benefits to unprecedented durations of up to 99 weeks. Although these emergency benefits offer valuable relief to the long-term unemployed, it is often argued that, by subsidizing unemployment, the extensions increase it.

In the third paper, Jesse Rothstein provides a careful and comprehensive evaluation of this claim in the context of the Great Recession and its aftermath. It is a challenging question to answer empirically: because unemployment insurance is often extended at precisely those times when unemployment is particularly high and finding a job particularly difficult, simply comparing times or places where benefits were extended with times or places where they were not is likely to yield misleading conclusions.

Rothstein relies on four research strategies to address this problem. In the first, he controls for time variation of labor demand as thoroughly as possible in order to exploit the haphazard rollout of unemployment insurance extensions by Congress, which generated several large swings in the number of weeks of unemployment insurance that laid-off workers could expect to receive. In the second, he looks within labor markets and compares job seekers who are eligible for benefits with those who are ineligible because they quit their previous job. In the third, he exploits the use of state "triggers" that force states to increase unemployment insurance benefits when their unemployment rate exceeds a given threshold. By comparing states just above and just below the threshold, he is able to focus on states with very similar labor market conditions but different levels of benefits. In the fourth strategy, he compares individuals who differ in the number of weeks of benefits available to them, looking for an anticipation effect: people with fewer weeks left may respond by searching harder.

These very different strategies give a very consistent result: the recent extensions of unemployment insurance are having only a small disincentive effect. Rothstein estimates that the availability of extended unemployment insurance in the fourth quarter of 2010, when the average unemployed worker could have anticipated receiving 65 weeks of benefits instead of the usual 26, reduced the monthly probability of finding a job from 13.4 percent to about 12.9 percent. Unsurprisingly, then, Rothstein finds that the impact on the unemployment rate is small as well—a rise of about 0.2 percentage point in December 2010—much of which comes not from fewer unemployed workers taking jobs, but from workers who would otherwise have left the labor force staying in.

AS CONGRESS WAS EXTENDING unemployment insurance benefits to unprecedented lengths, the Federal Reserve, too, was engaged in unprecedented countercyclical policy action, in what has come to be called quantitative easing. Having already pushed the interest rate on short-term Treasury bills close to zero, beginning in 2008 the Federal Reserve bought large quantities of an unusual array of other debt securities, including mortgage-backed securities and long-term Treasury bonds, in an attempt to provide further stimulus by lowering long-term rates. Quantitative easing can affect these rates through several channels, and in the fourth paper, Arvind Krishnamurthy and Annette Vissing-Jorgensen analyze the impacts on various interest rates, measures of default probability, and inflation expectations.

Their results indicate that the first round of quantitative easing, called QE1, was largely successful in reducing interest rates. Several channels were involved. First, the Federal Reserve's decision to buy up long-term assets, along with statements indicating its intention to keep interest rates low for an extended period, was interpreted by markets as a signal of a long-term commitment to low rates; this reduced 5- to 10-year interest rates by an estimated 20 to 40 basis points. Second, as these purchases flooded the market with reserves while removing a large quantity of long-term assets from the marketplace, the Federal Reserve created a great deal of liquidity. This reduced the liquidity premium on Treasuries, thus *increasing* Treasury yields relative to other, less liquid assets. The spread between the less-liquid agency bonds and Treasuries, in particular, fell by about 90 basis points. Third, by purchasing long-term Treasuries and agency bonds in QE1, the Federal Reserve decreased the supply of the very safest assets. Because investors appear willing to pay a premium for extreme safety, QE1 drove down yields on Treasuries and agencies by about 160 basis points, by increasing the spread between these and less safe assets. (Other Aaa-rated asset yields appear to have been pushed down, although to a lesser extent, through the same channel.) Fourth, agency mortgage-backed security yields fell by around 100 basis points, which the authors interpret as the effect of the Federal Reserve's purchases of mortgage-backed securities, which reduced investors' prepayment risk premium. Fifth, QE1 appears to have reduced interest rates on riskier corporate bonds by reducing their default risk or by reducing the default risk premium. Finally, Krishnamurthy and Vissing-Jorgensen show that QE1 increased expected 10-year inflation by 96 to 146 basis points.

Krishnamurthy and Vissing-Jorgensen argue that the effects of QE1 were particularly large because it occurred at a time of great demand for safety and significant market segmentation, so that supply changes had a

particularly large impact. In 2010 the Federal Reserve embarked on a second round of quantitative easing, called QE2, in which it made additional purchases of long-term Treasuries. This was a more modest program—both in scale and in the assets it targeted—and it took place in less dire circumstances. This perhaps explains why Krishnamurthy and Vissing-Jorgensen find it had a smaller impact than QE1, reducing 10-year Treasury rates by somewhere around 20 basis points, and long-term corporate yields somewhat less (mostly though the signaling channel and the safety channel), and modestly raising expected inflation.

Comparing these two rounds of quantitative easing also shows that the composition of Federal Reserve purchases matters. Put simply, if the Federal Reserve wants to affect the price of a security, it should target that security. Because Treasury bills and mortgage-backed securities are far from perfect substitutes, large purchases of the former do not much affect the price of the latter. This insight is already informing the policy debate about future interventions.

THE RISKS SURROUNDING QUANTITATIVE easing also feature in the fifth paper, in which Lars Svensson explores various aspects of "practical monetary policy" through an analysis of the conduct of monetary policy in Sweden and the United States in the wake of the Great Recession. These countries are useful examples because, in the summer of 2010, they took divergent policy paths despite similar economic conditions. Facing low inflation and high unemployment, Sweden responded by tightening monetary policy, while the United States loosened policy through quantitative easing.

What was the right course of action? Monetary policy, Svensson argues, should be guided by simple mandates. In the United States, the Federal Reserve has a dual mandate: to keep unemployment near its equilibrium rate and to keep inflation low. Sweden's central bank, the Riksbank, targets a low inflation rate and lacks an explicit unemployment mandate, but keeping inflation constant effectively requires it to also stabilize unemployment near its equilibrium level. To implement these policies, Svensson suggests that central bankers should focus on transparent, reliable indicators of slack in the economy, such as the difference between unemployment and its sustainable level. The greater this difference, the greater the slack, and thus the more leeway the central bank has to lower interest rates without fear of increasing inflation. By these criteria, both countries should have eased monetary policy in 2010. Yet Sweden did not follow this advice.

How did things turn out in each of the two countries? Surprisingly, Sweden's economy began to recover quickly, while the U.S. economy

continued to stagnate. But, Svensson argues, the success of the Swedish economy was due to favorable export conditions, and to financial markets expecting future interest rates to be lower than what the Riksbank was projecting—factors outside the control of the central bank. In the United States, meanwhile, the economy performed poorly because of a sluggish housing sector and fiscal policy problems—again factors outside the central bank's control. Thus, good outcomes do not necessarily reflect correct policy decisions; rather, policy should be judged on ex ante criteria, as Svensson usefully reminds us. He emphasizes that good monetary policy requires monetary expansion when the central bank expects inflation to be below its target and unemployment to be above its equilibrium level.

THIS CONFERENCE ALSO SAW the introduction of a new type of analysis for the *Brookings Papers,* in which authors of earlier papers are invited to revisit their conclusions in light of subsequent evidence. Although we regard these updates as an experiment, they are in some respects a return to the founding idea behind the Brookings Panel. The sixth and seventh papers suggest that this experiment was a success.

In the sixth paper, Michael Elsby, Bart Hobijn, Ayşegül Şahin, and Robert Valletta update their analysis of the labor market in the Great Recession and its aftermath, originally published in these pages in the spring of 2010. Their earlier paper showed that, in terms of the labor market, the Great Recession was the deepest postwar recession, with high unemployment and especially high numbers of long-term unemployed. Although at that time there was little evidence that the high long-term unemployment might become permanent, it was a concern.

The update provides new reasons to believe that such a permanent increase in long-term unemployment is unlikely. First, the possible structural explanations for the rise in unemployment—skill mismatch, housing lock-in, and generous unemployment insurance—together explain only a small fraction of the rise. Second, the authors show that the current job finding rate for the long-term unemployed, although historically low at about 11 percent per month, is high enough to suggest that overall unemployment will return to normal levels. Thus, structural changes are unlikely to be driving current unemployment.

Just as it can be difficult to analyze labor markets as a recession unfolds, so it is surprisingly difficult even to know the level of GDP in real time. In the seventh paper, Jeremy Nalewaik updates his analysis, published in the Spring 2010 *Brookings Papers,* of an alternative measure of GDP: an income-based measure, GDP(I), rather than the headline, expenditure-based

one, GDP(E). Although these measures are conceptually identical, they are based on different source data that yield divergent results. By any metric, the income-side measure (conventionally called gross domestic income, or GDI) does much better than its expenditure-side counterpart: it better predicts future GDP (however measured) and is more highly correlated with a wide range of independent business cycle indicators. When GDP(E) is revised, moreover, it usually moves toward GDP(I). Importantly, the income-side measure showed that the 2007–09 recession was worse than the expenditure-side measure suggested.

Since Nalewaik's original paper was published, both measures of GDP have been further revised for the period he analyzed. The GDP(E) measure was revised toward the GDP(I) estimate, confirming that the Great Recession went deeper and began earlier than initially thought, and that the GDP(I) estimate got the timing and the magnitude much closer. On the other hand, the income-side measure has been revised away from the expenditure-side measure. These new facts strengthen the claim that GDP(I) provides a much better real-time picture of the trajectory of the economy over the business cycle than does GDP(E).