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A High Bar in CCAR 2015

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Abstract

The 2015 U.S. bank stress-testing process is officially under way. The Federal Reserve recently released the Comprehensive Capital Analysis and Review economic scenarios that 31 major banks must run through their balance sheets and income statements to determine if they are appropriately capitalized.

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The 2015 U.S. bank stress-testing process is officially under way. The Federal Reserve recently released the [Comprehensive Capital Analysis and Review](#) economic scenarios that 31 major banks must run through their balance sheets and income statements to determine if they are appropriately capitalized.

This is the sixth round of stress tests since testing began in early 2009, during the worst of the Great Recession. The test was first instituted to re-establish confidence in the faltering U.S. financial system, by requiring the nation's biggest banks to raise enough capital to withstand conditions as bad as those experienced in 1933 and 1934, two of the worst years in U.S. economic history.

The rigor and transparency of the tests convinced everyone, including the banks themselves, that the system was financially sound. Nine of the 19 banks that took this first test failed it and were required to raise an additional \$75 billion in capital, much of it via the Troubled Asset Relief Program fund (see Chart 1). Although the process was painful for the banks and their stakeholders, confidence was revived, credit began to flow, and the economic downturn ended a few months later.

The 2015 stress tests are equally rigorous. Banks are required to consider three economic scenarios, including: 1) a baseline scenario consistent with the consensus view of the near-term outlook; 2) an adverse scenario featuring a mild recession with a slow recovery, but high inflation and interest rates and a flat yield curve; and 3) a severely adverse scenario, characterized by a downturn that by some measures is even more severe than the Great Recession. The scenarios begin in the current quarter and run for three years to the end of 2017.

CCAR 2015 will ensure that the U.S. banking system is extraordinarily well-capitalized and that credit will flow freely, further sup-

porting the economic expansion. Stress-testing has limitations and can be improved, but it is one of the principal reasons to think that the U.S. banking system is on solid ground.

Baseline

The CCAR baseline economic outlook is a consensus forecast that is similar to the Moody's Analytics baseline forecast. The baseline represents the middle of the distribution of possible economic outcomes.

In the baseline, real U.S. GDP growth remains near 3% during most of the forecast horizon through 2017, with unemployment declining to just over 5%. This is close to most estimates of the natural, or full-employment, rate, and thus consumer price inflation settles in close to the Federal Reserve's target of just over 2%. The Fed largely normalizes monetary policy by the end of 2017, and long-term interest rates

Asset prices increase at a pace consistent with historical norms in the baseline outlook. Stock prices rise close to 5% per year and house prices expand at a 3% annual pace. Corporate credit spreads remain consistent with current spreads.

An ostensible tension in the baseline is

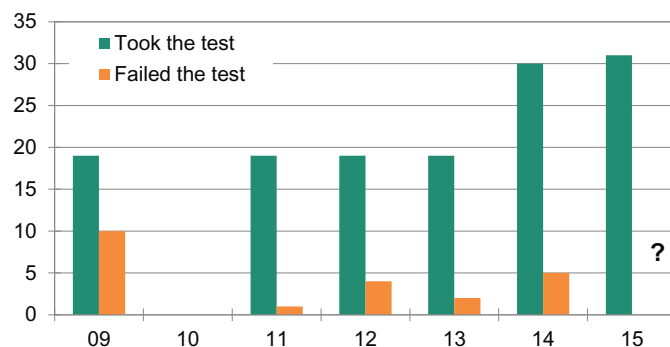
that the unemployment rate stabilizes in 2016 and 2017, despite what appears to be above-trend GDP growth. Most estimates put the economy's potential real GDP growth rate closer to 2%. One reasonable explanation for this is the absorption of labor market slack not captured by the unemployment rate, including discouraged workers who had stepped out of the labor force but will come back as job opportunities improve, and part-timers who would like to work full time.

Severely adverse scenario

The CCAR severely adverse scenario is comparable in severity to the Great Recession, if not more severe. It is somewhat more severe than the Moody's Analytics S4 scenario, which is designed to have a probability of 4%. That is, there is only a 4% probability that the economy will perform worse.

Chart 1: U.S. Stress Tests Succeeded

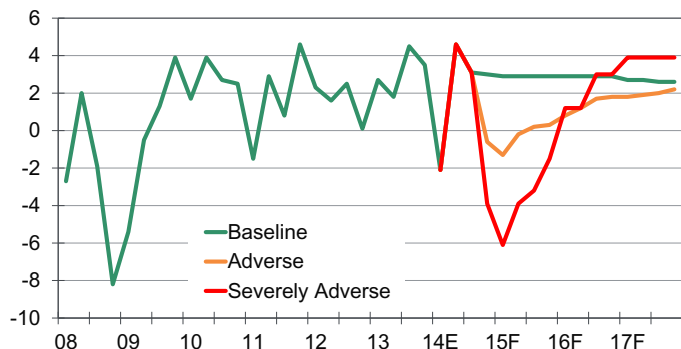
of banks that...



Sources: Federal Reserve, Moody's Analytics

Chart 2: A Downturn Like the Great Recession...

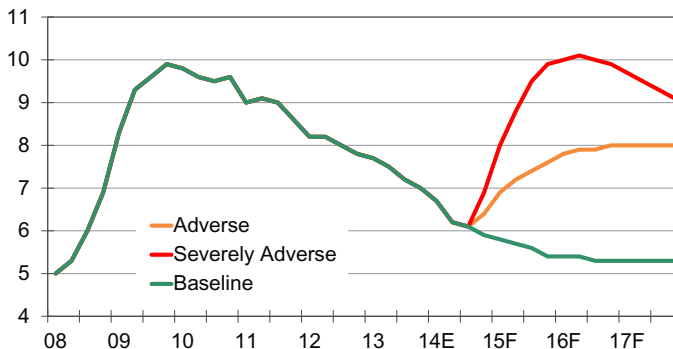
Real GDP, % change, annual rate



Sources: BEA, Federal Reserve, Moody's Analytics

Chart 3: ...With Unemployment Peaking at 10%

Unemployment rate, %



Sources: BLS, Federal Reserve, Moody's Analytics

The GDP decline in this year's CCAR severely adverse scenario (4.5% peak to trough), and the increase in unemployment (to a peak of 10%), is similar to what happened in the Great Recession and to the CCAR test performed last year and the year before (see Charts 2 and 3). If anything, this year's test is more stringent: In the Great Recession, the unemployment rate quickly receded from its 10% peak, while in this year's test the unemployment rate lingers there for more than a year.

Past CCAR tests have had higher peak unemployment rates. Indeed, as recently as 2012, the CCAR severely adverse scenario had the unemployment rate peaking above 12%. However, this does not mean the test was more rigorous, as the actual unemployment rate at the time was close to 9%. Unemployment is currently below 6%. The decline in GDP in the 2012 CCAR severely adverse scenario was not much different than in the current CCAR test.

It is reasonable to argue that the current test creates a higher bar for the banks given the strengthening economy, continued deleveraging by households and businesses, and generally appropriately valued asset markets. Job growth is about as strong as it gets in economic expansions, and the quality of the jobs being created is increasingly favorable. The household debt-service burden is at a record low, and by most measures the balance sheets of nonfinancial American businesses are strong. The housing and stock markets appear roughly appropriately valued, and corporate credit spreads, which

looked somewhat frothy earlier this year, have since corrected back to near historical norms. Given all of this, the chance of another Great Recession in the next several years seems about as low as it has been for some time.

Driving the downturn

The principal catalyst for the CCAR severely adverse scenario is a deep global economic downturn. Europe and oil-dependent emerging economies are hammered in the scenario, which is not far-fetched given that Europe and a number of key emerging economies are currently flirting with recession. A jump in oil prices back over \$100 per barrel (from their current level closer to \$85) before 2015 also contributes to the global pullback.

Stock prices, housing values, and commercial real estate prices also plunge in the severely adverse scenario. Stock prices bottom out close to their 2009 lows, as do commercial real estate values. The 25% peak-to-trough decline in house prices is similar to what was experienced in the Great Recession, but given that current house prices are a long way from recovering from the bust, they bottom out well below their 2009 lows (see Chart

4). This is another reason to argue that the 2015 stress test is more stringent than those the banks took during the recession.

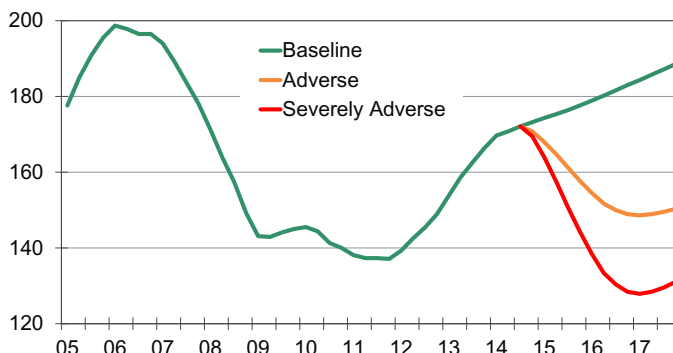
Another driver of the severely adverse scenario is a sharp increase in financial market risk aversion, particularly for corporate credit. Corporate bond yields increase significantly despite lower U.S. Treasury yields, and thus yield spreads widen again, to near their peak in the Great Recession. The Federal Reserve's description of the CCAR scenarios makes pointed reference to this, consistent with regulators' recently voiced concerns about banks' overly aggressive leveraged corporate lending. Having said this, however, the Fed's narrative seems stronger than is represented in the widening in credit spreads.

Stronger recovery

While the severely adverse scenario features a downturn similar in length and

Chart 4: Another Housing Crash but Even Worse

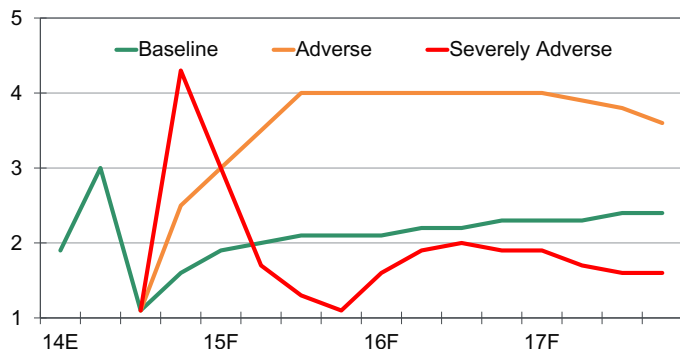
House prices, index



Sources: Federal Reserve, Moody's Analytics

Chart 5: Adverse Scenario Boosts Inflation...

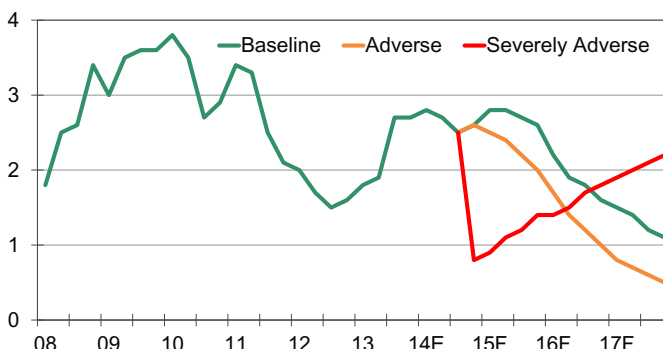
CPI, % change, annual rate



Sources: BLS, Federal Reserve, Moody's Analytics

Chart 6: ...Flattening the Yield Curve

10-yr Treasury yield less 3-mo Treasury bill, ppt



Sources: Federal Reserve, Moody's Analytics

duration to the Great Recession, the subsequent recovery appears stronger than the economy's actual recovery from the Great Recession. Real GDP growth in 2017 in the scenario is almost 4%. Actual real GDP growth in the current recovery has not greatly exceeded 2% in any year.

In the scenario, easier monetary policy contributes to the recovery, with the Fed's zero-interest rate policy remaining in place through 2017. Long-term Treasury yields also fall, declining below 1% earlier in the scenario and never rising above their current 2.2%. This occurs despite the assumption of no additional quantitative easing. More QE would be consistent with the Fed's conduct of monetary policy during the current recovery, but it is not needed to get long-term Treasury yields as low as they are in the scenario. The Fed would be more likely to step in with purchases of mortgage securities and perhaps even corporate bonds, but this is not evident in the scenario's mortgage and corporate bond rates.

It is also assumed that fiscal policy offers no support to the economy other than through the automatic stabilizers in federal taxes and spending. This is also inconsistent with the recent behavior of fiscal policymakers, who provided substantial temporary tax cuts and government spending increases during the recession to support the recovery. However, it appears consistent with the severity of the decline in real disposable income in the scenario: If tax cuts had been part of the scenario, the decline would have been less severe.

Without additional monetary and fiscal stimulus it is unclear what motivates the stronger recovery in the Fed's severely adverse scenario. It is hard to imagine that after such a massive downturn, the economy would pull out of it as quickly as envisaged in the scenario without substantial policy support.

Adverse scenario

The adverse scenario is even harder to imagine. It is driven by a significant acceleration in inflation. Consumer price inflation jumps from less than 2% currently to 4% a year from now (see Chart 5). This is similar in spirit to the Moody's Analytics stagflation scenario (which includes higher inflation and slower growth), but the odds of its occurrence in the near term are nil.

The pickup in inflation prompts an immediate tightening in monetary policy by the Federal Reserve, with short-term rates rising sharply. A modest recession quickly ensues and unemployment rises, but the Fed continues to tighten policy as inflation remains stuck at 4%. By the end of 2017, the Fed has pushed short-term rates to almost 5%, well above the level (below 4%) at which most economists and most Federal Open Market Committee members believe short-term rates should settle in the long run.

Long-term interest rates also rise in the adverse scenario to above their long-run equilibrium, but not as much as short-term rates. The yield curve thus flattens substantially (see Chart 6). By the end of 2017, the gap between 10-year Treasury yields and

three-month T-bills is only about 50 basis points, compared with 100 basis points in the baseline and 200 basis points in the severely adverse scenario.

The recession quickly gives way to a recovery in this scenario, but the recovery is tepid. Growth is so slow that unemployment remains stuck at 8% through late 2016 and all of 2017.

The adverse scenario tests the banking system quite rigorously, as it features much higher inflation and interest rates, slow growth, and a flat yield curve. Such a stagflation scenario could be debilitating to banks. Yet the odds of it occurring soon are low. Disinflation and even deflation plague growing parts of the global economy. Global commodity prices are soft and the U.S. dollar is strong.

It is thus hard to motivate this scenario, and the Federal Reserve does not attempt to. Given deflation in Europe and Japan and severe disinflation in the U.K. and developing Asia, higher U.S. inflation is unlikely to be driven by higher oil and commodity prices. A productivity shock that causes U.S. productivity to decline, pushing up business costs and prompting businesses to raise prices more aggressively, is also not consistent with the GDP growth and unemployment assumptions in the scenario.

The immaculate acceleration in inflation in the adverse scenario could perhaps be caused by more idiosyncratic developments such as stronger rent growth due to a tightening rental housing market or stronger healthcare inflation if the Afford-

able Care Act collapses. But assuming such developments could inappropriately make the stress tests favor some banks over others. For example, a multifamily lender would benefit if stronger inflation were due primarily to stronger rent growth. Therefore, it is assumed that the acceleration in inflation in this scenario is broad-based across all goods and services.

Likes and dislikes

The 2015 CCAR is an appropriately stressful stress test. Banks must have enough capital to withstand at least another Great Recession. They must also be prepared for a potentially debilitating stagflation scenario, even though that is arguably less likely to occur.

The scenarios are also internally consistent. That is, the changes in GDP are consistent with the changes in unemployment and real disposable incomes. The scenarios are not fully motivated, but economic and financial shocks often come out of the blue, and the forces driving them are hard to identify, particularly *ex ante*.

The Federal Reserve's expanded narratives describing the scenarios are also helpful.

Moody's Analytics takes the 28 economic and financial variables provided by the Federal Reserve for each scenario and drives them through our global macro, subnational, house-price and credit-risk models to produce a wide range of variables for banks to use in their stress-testing. The guidance provided in the narratives makes this work easier and more sensible.

The guidance also states that the impact of the scenarios on house prices should vary across states and metropolitan areas. This is encouraging: Those areas that have experienced larger recent price gains should experience larger price declines in the scenarios. This probably should be refined so that metro areas where prices have risen considerably faster than household incomes and rents should experience larger price declines in the scenarios. Some areas have experienced big price gains recently only because prices were inordinately depressed by a surge in foreclosures and short sales.

Having said this, the Fed should consider expanding the list of variables it provides. Corporate credit spreads are not particularly useful for testing the banks' leveraged corporate lending. Moreover, none of the

28 variables gets at the recent weakening in underwriting in the auto lending business. Moody's Analytics provides the Manheim used car price index consistent with the scenarios, but it would be more effective if it came from the Fed.

The scenarios' three-year horizon also seems too short. It is difficult to appropriately stress a mortgage portfolio, for example, over such a short period. As is clear from our recent experience, it can take a decade for losses on many types of lending to fully materialize. Moody's Analytics extends the CCAR scenario for 10 years for clients' use, and thus makes a wide range of assumptions regarding how these scenarios play out after year three.

Bank stress-testing was among the most productive policy steps taken in the wake of the financial collapse. It quickly restored our financial system to health and was key to the subsequent U.S. recovery, which has been among the strongest in the world. The process has its problems and it must continue to evolve, but CCAR 2015 is a strong next step in its evolution and should ensure the U.S. banking system is in excellent health.

About the Author

Mark Zandi

Mark M. Zandi is chief economist of Moody's Analytics, where he directs economic research. Moody's Analytics, a subsidiary of Moody's Corp., is a leading provider of economic research, data and analytical tools. Dr. Zandi is a cofounder of Economy.com, which Moody's purchased in 2005.

Dr. Zandi's broad research interests encompass macroeconomics, financial markets and public policy. His recent research has focused on mortgage finance reform and the determinants of mortgage foreclosure and personal bankruptcy. He has analyzed the economic impact of various tax and government spending policies and assessed the appropriate monetary policy response to bubbles in asset markets.

A trusted adviser to policymakers and an influential source of economic analysis for businesses, journalists and the public, Dr. Zandi frequently testifies before Congress on topics including the economic outlook, the nation's daunting fiscal challenges, the merits of fiscal stimulus, financial regulatory reform, and foreclosure mitigation.

Dr. Zandi conducts regular briefings on the economy for corporate boards, trade associations and policymakers at all levels. He is on the board of directors of MGIC, the nation's largest private mortgage insurance company, and The Reinvestment Fund, a large CDFI that makes investments in disadvantaged neighborhoods. He is often quoted in national and global publications and interviewed by major news media outlets, and is a frequent guest on CNBC, NPR, Meet the Press, CNN, and various other national networks and news programs.

Dr. Zandi is the author of *Paying the Price: Ending the Great Recession and Beginning a New American Century*, which provides an assessment of the monetary and fiscal policy response to the Great Recession. His other book, *Financial Shock: A 360° Look at the Subprime Mortgage Implosion, and How to Avoid the Next Financial Crisis*, is described by the New York Times as the "clearest guide" to the financial crisis.

Dr. Zandi earned his BS from the Wharton School at the University of Pennsylvania and his PhD at the University of Pennsylvania. He lives with his wife and three children in the suburbs of Philadelphia.

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Economic & Consumer Credit Analytics

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Moody's Analytics added Economy.com to its portfolio in 2005. Now called Economic & Consumer Credit Analytics, this arm is based in West Chester PA, a suburb of Philadelphia, with offices in London, Prague and Sydney. More information is available at www.economy.com.

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