American Enterprise Institute for Public Policy Research

Economic Outlook

October 2005

Can Disasters Be Good for Growth?

By John H. Makin

The U.S. economy was in recession when the 9/11 terrorist attacks struck New York and Washington, D.C. Yet within a few months, despite fears of a collapse in confidence, consumption growth surged to a fourth-quarter annualized rate of nearly 5 percent, up sharply from a 1 percent rate during the third quarter. That consumption surge was enough to drag the economy out of what turned out to be a mild recession. By the first quarter of 2002, overall growth reached a booming 5 percent rate.

On August 29, 2005, Hurricane Katrina slammed into the southeastern Louisiana and Mississippi Gulf Coast causing massive property damage. The next day, the catastrophe was compounded when three levees protecting New Orleans failed, putting 80 percent of the city under water. The total direct damage to the Gulf Coast region will total well over $100 billion—probably closer to $150 billion—the largest losses from a natural disaster in U.S. history by a factor of four.

The economic damage to the region was sufficient to produce a measurable effect on the national economy. The ports in the New Orleans area, the largest in the nation, were closed for a time and will be operating at reduced capacity in coming months. The region's oil production and refining, along with its natural gas extraction, were cut by over 90 percent. By mid-September, 56 percent of oil production and 37 percent of natural gas production were still shut down as the need to prepare for winter heating supplies grew. As a result of the refinery disruptions, gasoline prices shot up above $3 per gallon, about 43 percent above their level in June, nearly 60 percent above their year-ago levels, and 100 percent above levels two years ago. Additionally, natural gas prices rose above $11 per million BTU, more than 50 percent above July prices.

Once the immediate damage assessments in the energy sector were completed, about 5 percent of the nation's refining capacity and 3 to 5 percent of its natural gas extraction capacity looked likely to be out of operation for several months. Since each had been operating virtually at capacity, higher prices have become necessary to ration available supplies. The ability of the ports in the New Orleans area to resume normal operations is still being determined, with the outcome critical for the flow of goods, including Midwest agricultural products moving abroad and the flow of critical imports through the Gulf Coast region into the United States.

Meanwhile, during the two weeks following the Katrina catastrophe, the stock market remained insouciant—rising by about 3 percent. Looking at storm-related disruptions, most analysts cut third-quarter growth forecasts from a 4 percent to a still-respectable 3 percent rate, but most fourth quarter forecasts were largely unaltered at about 4 percent. Most growth forecasts for 2006 rose given the expected surge in rebuilding efforts in the Gulf Coast region, which are to be buttressed by a surge in federal government aid expected to total nearly $150 billion.

While there will be an extensive rebuilding effort in the Gulf Coast region on a scale sufficient to affect national economic statistics, markets and analysts—perhaps influenced by the remarkable post-9/11 resilience of the U.S. economy—may be taking an overly sanguine view of the outlook

John H. Makin (jmakin@aei.org) is a visiting scholar at AEI.

for the coming year. The 9/11 attacks created a crisis of confidence and inflicted intensive damage in lower Manhattan and at the Pentagon. Katrina has inflicted extensive physical damage to a region that includes critical energy suppliers and port facilities.

Importance of Pre-Katrina Assumptions

The outlook for the U.S. economy during the second half of 2005 and early into 2006 has been volatile over the past several months. A spring "soft spot" was followed by a strong pickup in spending, which depleted inventories late in the second quarter. Growth forecasts for the second half of 2005 had, by late-July, been raised to nearly 5 percent.

During August, evidence began to appear that the U.S. economy was, again, losing momentum. Retail sales were weaker than expected while manufacturing slowed. One of the reasons for sharply elevated growth expectations in the second half of the year was the depletion of inventories during the second quarter that would require an acceleration in production to rebuild. However, little evidence of inventory building appeared during July and August—either in the inventory data or in the production data.

More broadly, the loss in growth momentum that appeared during August (prior to Katrina) probably reflected an underlying tension in the U.S. economy. A 1 percentage point growth drag from persistent increases in energy prices has been offset by a 1 percent growth boost from household equity extraction out of the housing sector that, in turn, helped to support consumption. As energy prices have continued to rise and activity and prices in the housing sector have weakened, the net effect has been slower growth.

Assumptions about underlying U.S. growth prior to the near-term negative effects from Katrina are important. A number of analysts lowered third-quarter growth forecasts from 5 percent to about 3.5 percent after Katrina. Growth of 3.5 percent would still be slightly above the long-term trend for the U.S. economy. If, alternatively, the expectation for third-quarter growth prior to Katrina was 3.5 percent, a reduction by 1.5 percentage points from the Katrina effect, and possibly owing to some uneasiness about momentum in the third quarter, would take growth down to a more unsettling 2 percent level.

In fact, it is difficult to identify the timing of the growth impact of Katrina given uncertainties about the way in which the data is collected and reported, how the storm affects activity nationwide, and the rate at which federal government aid to the region is actually expended. Suffice it to say that, during the last four months of 2005, Katrina will have a negative impact on growth of somewhere between 1 and 2 percentage points at an annual rate. Some positive growth effects can be anticipated during the first-half of 2006 based largely on government-financed extensive rebuilding efforts in the region.

Despite the sanguine initial analysis of the near-term effects of Katrina on the economy, there is reason to be cautious. A good case can be made that the underlying growth rate during the final four months of 2005, prior to the negative Katrina impact, was about 2.5 percent. Subtracting 1 percentage point from that rate takes year-end growth down to an uncomfortable 1.5 percent rate while subtracting 2 percentage points takes it down to a near-recession level of 0.5 percent. A loss of economic momentum that resulted in a growth rate below 1 percent, especially during uncertain times, would be of serious concern to policymakers.

Why Growth May Be Lower than Expected

Three factors may contribute to a sharper slowdown in growth during the last four months of 2005 and perhaps into 2006. The first is the cumulative negative impact from a persistent increase in energy prices over the last two years. The second is the less certain, though potentially negative, impact on investment spending arising from elevated ambiguity attributable to Katrina and its aftermath. Finally, the extent of the slowdown in the housing sector will influence growth—especially consumption growth.

At about $3 per gallon, the average retail price of U.S. regular unleaded gasoline is 100 percent above its level of two years ago, about 60 percent above its level a year ago, and about 43 percent above its level in June. The price increase during August alone was 18 percent. The retail price of gasoline, not to mention the prices of heating oil and natural gas, has been rising at an erratic pace for two years. In other words, while the 18 percent increase during August (caused largely by the Katrina disruption) may be dramatic, it is only the latest in a series of persistent increases in energy prices.

The rise in energy prices through June was sufficient to impart about a negative 1 percentage point drag on U.S. growth from mid-2005 through mid-2006. The additional energy price increases since then (including the 43 percent increase in the retail price of gasoline) will impart another 1 percentage point drag on economic growth, probably beginning in the fourth quarter of 2005 and carrying through to 2006. If one sets the underlying U.S. growth rate at about 3.5 percent, which happens to be the long-run average over the past decade as well as the average growth rate during the first-half of 2005, and then subtracts 1 to 1.5 percentage points from an energy drag, 2 to 2.5 percent growth is the result.

If one also factors in a reduced boost from the housing sector of half a percentage point, it is easy to see a 2 percentage point drag on growth during the fourth quarter, resulting in a 1.5 percent growth rate. Any additional drag from Katrina, especially on disposable real income (to spend on non-energy items) could take growth perilously close to zero by the end of this year.

The second impact from the Katrina disaster may be to raise uncertainty resulting in hesitation among corporate managers regarding investment growth. The "uncertainty-hit" to investment growth from the 9/11 tragedy coupled with the fact that the economy was in recession, resulted in negative investment spending that reduced U.S. growth by 1.5 percentage points during the fourth quarter of 2001 and the first quarter of 2002. While part of that negative contribution was due to the negative cyclical impact from recession on investment spending, the unusually large investment growth drag was probably partly attributable to the uncertainty tied to the 9/11 attacks.

As a negative supply shock, Hurricane Katrina both reduces near-term growth prospects and increases near-term inflation prospects. However, there is reason to be optimistic about the inflation outlook.

During the last two quarters, business fixed investment has contributed an average of about 0.8 percentage points to growth—well above the long-run average contribution since 2001 of 0.2 percentage points. If the growth contribution of business fixed investment reverts to its average over the next two quarters, the reduction in the contribution to overall growth from the first half of the year would be about half a percentage point of GDP growth. Consequently, it will be important to watch the data on investment spending and corporate confidence closely in the coming months.

Inflation Outlook

As a negative supply shock, Hurricane Katrina both reduces near-term growth prospects and increases near-term inflation prospects. However, there is reason to be optimistic about the inflation outlook. Most important measures of U.S. inflation were falling from their peaks prior to the hurricane. While overall inflation is rising at a 3.4 percent year-over-year rate, most of the increase is due to higher energy prices, and that figure is down from a peak year-over-year rate of 3.6 percent earlier in 2005. Excluding energy, the core Consumer Price Index is rising at a 2.2 percent rate, down from a peak earlier this year of a 2.4 percent year-over-year rate. The core consumption price deflator (closely watched by the Federal Reserve) is rising at a 1.8 percent year-over-year rate, again down from its peak earlier this year of 2.3 percent. Long-term inflation expectations derived from yields on ten-year TIPS (inflation-protected treasury notes) are about 2.4 percent, below their average level over the past year.

Before Katrina, pipeline core measures of inflation were also declining. In August, year-over-year inflation as measured by the Producer Price Index was 2.4 percent, about equal to its average for the previous three months. The core inflation rate in the intermediate category for PPI had fallen to 3.2 percent year-over-year, down from 5.4 percent in May. Core crude goods inflation was actually negative during July and August, down sharply from a 9.4 percent growth rate in May.

Historically, natural disasters have produced a positive impact on inflation lasting two to three months. Given the slowing momentum in the economy, this is likely to be the case in the months following Katrina.

The Policy Environment

At the time of the terrorist attacks on New York and Washington, D.C., the federal funds rate was 3.5 percent—just as it was when Katrina hit. However, during the three months following 9/11, the Fed reduced the rate by 175 basis points to 1.75 percent.

The Fed raised the federal funds rate by 25 basis points to 3.75 percent on September 20, indicating that it saw "no persistent threat" from Katrina to the economy. Repeating the statement from previous meetings in the tightening cycle, the Fed indicated that "accommodation can (continue to) be removed at a pace that is likely to be measured." The statement signals that the central bank intends to continue raising the fed funds rate to at least 4 percent, a level which some at the Fed consider neutral—neither stimulative nor contractionary.

The full path of the federal funds rate over the balance of the year remains to be determined, but it is probably upward, in sharp contrast to the response by the Fed to a perceived steep elevation of financial risks after the 9/11 tragedy. Needless to say, were evidence to appear that fourth-quarter growth is slowing sharply, the Fed would probably stop increasing rates, but it could well have moved the fed funds rate to 4 percent either by November 1 or December 13, before clear evidence of a sharply slowing economy emerges. The Fed's own view is that the underlying economy is robust. That means that if the economy is actually losing momentum, the risk of overtightening by the Fed is high.

> Historically, natural disasters have produced a positive impact on inflation lasting two to three months. Given the slowing momentum in the economy, this is likely to be the case in the months following Katrina.

Fiscal policy at the time of the 9/11 tragedy was fortuitous. Tax cuts and transfers for lower-income taxpayers had been enacted in June and were on track to boost the government's contribution to growth from its usual 0.5 percentage points to a full 1.5 percentage points during the fourth quarter of 2001. The government contribution to growth remained close to 0.9 percentage points, about 0.4 percentage points above average, during the first half of 2002. Now in 2005, the government contribution to growth is slightly below average at about 0.4 percentage points. Bonuses and the exercise of stock options have boosted personal income levels enough to sharply increase tax collections. As a result, estimates for the fiscal year 2005 federal deficit have gone down nearly $80 billion to about $325 billion.

Going forward, federal spending on rebuilding the Gulf Coast region will contribute an average of about 0.5 percentage points to growth, probably spread over the next five or six quarters. The federal government has already appropriated an additional $62 billion in funds for flood and hurricane aid and will probably appropriate another $80 to $90 billion in coming months. However, the timing of the growth impact depends on the actual outlay of funds, which may occur at a rate of $20 to $25 billion per quarter based upon estimates for actual spend-out rates after previous natural disasters. The current, often-repeated estimate that the government is spending $2 billion a day on Katrina relief is an exaggeration. The government has been obligating itself to additional expenditures at a rate of roughly $2 billon per day, while the actual spend-out, currently close to its highest level, is between a half a billion and one billion dollars per day.

It is also important to distinguish between the effect of fiscal stimulus that offsets substantial losses by households and businesses from the effect of fiscal stimulus in the form of increased transfers or tax cuts. The total annual spending by a low-income household that receives an extra check from the federal government (like that provided in 2001) is likely to be greater than the spending by a household receiving a check from the federal government to compensate for the loss of its home or livelihood.

Broadly speaking, the interruption of economic activity in the Gulf Coast region will probably reduce growth by between one-half-of-one percentage point and one percentage point over the balance of the year and that negative growth effect may just be offset by the transfer of government payments. As we move into 2006, government outlays should produce a net positive effect on the region and the national economy amounting to something on the order of half a percentage point of growth—perhaps during the first-half of 2006.

Negative Wealth Effects from Katrina

Given that Hurricane Katrina constitutes the largest natural disaster by far in U.S. history, it is worth estimating the negative wealth effects from the storm that will occur in addition to the negative impact on economic activity from storm disruptions. The tri-state region of Louisiana, Alabama, and Mississippi accounts for about 3.2 percent of national GDP. While the entire region was not directly impacted by Hurricane Katrina, economic activity and resources underlying the activity in the region were broadly affected, while homes and business facilities directly affected by the storm suffered destruction or extensive damage. Of the nation's $12.5 trillion in GDP, 3.2 percent amounts to about $400 billion. The national wealth-to-income ratio is about four, suggesting that total wealth in the tri-state area is about $1.6 trillion. If just 15 percent of that wealth was destroyed by Hurricane Katrina, the total wealth loss amounts to about $240 billion or about 16 percent of the average annual national wealth gain over the past five years. That is a substantial sum that may negatively impact growth and spending in the Gulf Coast region for years to come. While insurance payments will cover some, perhaps a quarter of the losses (flood damage is not covered by most private insurance policies, and there are caps on lightly subscribed federal flood insurance), the net impact on national wealth is small since it represents a transfer from insurance companies to policyholders.

Looking Ahead

The full impact of Katrina on the regional and national economy, not to mention the substantial human tragedy it entails, is yet to unfold. As with any crisis, the Katrina catastrophe carries with it some opportunities to substantially improve the economic prospects for the region as well as, unfortunately, possibilities to harm the prospects for the region. The key lies with recognizing the need for substantially enhanced flood control measures in the New Orleans area.

Tragically, Hurricane Katrina revealed the inadequacy of the levee system that was designed to protect New Orleans from a category-three storm along with the serious problems tied to the atrophy of marshes at the mouth of the Mississippi River. The atrophy of the marsh wetlands has reduced the protection from storm surges tied to hurricanes in the New Orleans area. Rebuilding the levees and reversing the atrophy of the wetlands is a substantial engineering project that long has been advocated. It seems a logical candidate for public spending to repair the infrastructure of the region. The cost will probably be between $20 and $30 billion and might well be financed by the issue of hundred-year bonds by the federal government. Such bonds are in great demand, a fact that would reduce the cost of financing a public works project, which is a crucial part of any effort to restore the New Orleans region to viability.

The technology for such an undertaking has been contemplated for a long time and is readily available. Following massive floods in 1953, the Dutch rebuilt a levee system to preserve their nation from immersion under the North Sea during storms. Part of that system was a buffer-flood plain that allows levees to be intentionally breached by storms in order to reduce pressure upon them. The low-lying areas of New Orleans may be a candidate to serve as such flood plains. This would require relocating much low-income housing away from that area, but it is hard to imagine anything more irresponsible to begin with than the reconstruction of such housing directly in harm's way.

Tragedies like the 9/11 attacks on New York and Washington, D.C., and unprecedented natural disasters on the scale of Katrina can, like all crises, present opportunities to improve growth and future prospects for the population at large. However, it is wise not to be too optimistic in the immediate aftermath of such events, especially in view of elevated recession risks and the need to proceed cautiously to rebuild critical infrastructure. Crises may include opportunities for those who react wisely, but simply assuming a positive-growth outlook and rebuilding without enhanced flood protection in the wake of a natural disaster on the scale of Hurricane Katrina would be unwise.