# A Quick and Dirty Analysis of the Impact of Hurricane Katrina on the US, the Southeast and Georgia

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Typically a natural disaster like a hurricane is over once it has passed over an area, done with its destruction, and is followed by recovery and relief crews moving in to begin the rebuilding process within days. By that metric, this event is now getting over for Alabama and Mississippi but is still playing out in tragic terms for New Orleans and Louisiana. These three states together account for 3.3% of US personal income, and the personal income generation of New Orleans area is about $40 billion a year.

The chart (see chart 1) calculates the damage done by past hurricanes for the states where they hit and the subsequent recovery. The metric I am using is personal income as it is a timely indicator (released only 3 months

**Chart 1**

## Local Impact of Hurricanes

| Name | Date | States Impacted | Personal Income Growth | | |
|---|---|---|---|---|---|
| | | | Before | After | |
| | | | Q2 | Q3 | Q4 |
| Hugo | Sept 1989 | South Carolina | 3.2 | -19.3 | 40.6 |
| | | North Carolina | 5.3 | -1.0 | 10.8 |
| Andrew | Aug 1992 | Florida | 5.1 | -12.7 | 37.8 |
| | | Louisiana | 7.6 | 0.3 | 12.2 |
| Floyd | Sept 1999 | North Carolina | 4.2 | -1.1 | 12.5 |
| Charley Frances Jeanne | Aug-Sept 2004 | Florida | 9.1 | 2.5 | 14.8 |
| Ivan | Sept 2004 | Alabama | 7.9 | 2.2 | 10.3 |

Source: EFC Calculations

after a quarter ends) and can truly capture the loss of income flows from the destruction of farms, homes, office buildings and business establishments. As you can see, a typical hurricane causes a sizeable drop in personal income in the quarter it hits (always the 3rd quarter). The farther personal income falls, the stronger the recovery in the subsequent quarter. According to the chart, it looks as if all the income lost in the 3rd quarter is more than made up for in the 4th quarter. The estimate is a bit skewed as rebuilding of capital stock (i.e. destroyed property) gets counted as income whereas its destruction is not a deduction. Thus, one can say that typically a hurricane's negative impact lasts for only one quarter and the recovery is also completed in one quarter. The employment data doesn't capture this effect as the period in which you are without employment is typically very small (a few weeks) and the reconstruction employment is larger than the job losses.

This above analysis applies to Alabama and Mississippi with one small caveat--the destruction of casinos in the Gulfport-Biloxi area from the latest pictures looks to be more substantial than before. The negative impact now may even last two quarters as it will take longer to get these casinos back to full operation.

The national impact of a typical hurricane is insignificant and may even be positive in certain cases. The slack from displaced services is picked up by other areas, and the rebuilding even adds stimulus to the economy. This is what usually occurs as no hurricane has ever affected national consumer confidence and/or price of oil and gasoline. Prior hurricanes have hit in areas that were important in the service sector rather than in oil production, refineries and gas pipelines. Finally, no hurricane in recent memory has generated the massive refugee problem that we are now seeing from Katrina. This is the biggest random factor in this forecast.

Based on the importance of New Orleans in oil, gasoline production, and shipping in the Mississippi river, the impact will be national and felt through many channels. The first channel is that of gasoline prices, which will remain high (apart from oil price being high) and will impact the consumer's discretionary spending. The futures market for gasoline is, however, suggesting declines starting in October. The expectation right now is that refineries will be back online by the end of next week, and it takes a few weeks for them to operate at full capacity. It will take another few weeks after supplies are normalized for prices to come down at the pump. This is what I expect will happen by the end of September. Any delay here will be detrimental.

Unfortunately, the loss of Gulf oil production will linger for longer. It may take over three months to get some kind of production flowing out from the Gulf to the refineries located there. This will keep oil prices in the $70 dollar per barrel range as world consumption led by China is still strong. If China slows suddenly, it will give us a break on oil prices at home, but the chances for that happening are very low.

Next, how long will the city of New Orleans be out of commission? Hurricane Betsy in 1965 flooded the city for a month and the city did rebuild. But this time is different. The city is (was?) much bigger now (about 1.4 million people in the metro area), more important for oil and gas, and the damage to the levees is more severe. The minimum time I hear on TV is three months before the water is pumped out and the rebuilding process can even begin. The unknown here are the pollution issues which can delay or even imperil rebuilding to the extent of permanently reducing the size of the city. This issue has implications for the state of Louisiana's recovery time as well as its future. If New Orleans gets back to rebuilding by early January 2006 and the hotel and tourism industry is back to normalcy by early summer, then the negative impact of the hurricane will last about a year. The longer it takes to rebuild, the greater the pain for Louisiana.

One issue that has arisen with the refugees moving to neighboring states is whether they will even come back to New Orleans. Once you put your kids in school, and hopefully find a job, the incentive to return may be greatly diminished. Ironically, if the regional labor market in the Southeast becomes weaker, it will actually aid the return of evacuees to New Orleans as they have trouble finding jobs in the new places they have settled. The labor markets in the Southeast, with the exception of Florida, aren't the most booming ones right now for white collar work.

Hence, one thing is clear for the next nine months or so, the monthly production of personal income from the New Orleans area will be reduced to a trickle (only the police, bureaucracy and FEMA guys will get paid initially until the water clears, and only then will rebuilding pump back some income). My best estimate is that about $30 billion of income will be lost from New Orleans, which, on a base of $125 billion of income for the state of Louisiana, is a very substantial loss. No other state in previous hurricanes has suffered any loss of income in a twelve month period. What happens to Louisiana afterwards depends upon what shape and size the city of New Orleans takes on its rebirth.

The loss of tourism in New Orleans is actually going to go to other cities such as Atlanta, Charlotte, Houston, Memphis or even Miami. The conventions and tourists will go to alternate destinations. Thus there is no net effect on the US economy, but a positive one for these other cities at the expense of New Orleans. Same analysis goes for spending by refugees (either from their own pocket or from government relief checks) and it adds to the purchasing power in the cities they will be living, which to some extent mitigates the negative effect of higher gasoline prices. Thus, I am not inclined to lower the job growth estimates for Georgia and Atlanta for 2006 but will need to adjust the numbers for the rest of this year. The unknown at this point is how the lack of supplies for homebuilding will affect the desire for building in the local metro area. Delta's chances for falling into bankruptcy have increased very substantially but were factored into the forecast presented on the 24th of August, 2005. With that said, the impact of the refugee crisis currently playing out on TV and not expected to subside soon will affect consumer confidence sharply in September and October. High gas and oil prices don't help much and thus the hit to the economy is spread over the next two quarters. To explain this behavior I have to explain my assumptions for this new forecast, which are as following:

1. Oil gets to $75 and stays there for the 4th quarter, then moderates to below $60 in 2006q1. This is the best proxy for damage from high gasoline prices from refining shortages.

2. Consumer confidence takes a hit in this quarter but more so in the fourth quarter. As New Orleans starts its road to normalcy, consumer confidence gets restored in 2006.

3. The FED does not change its course. They will persist with their measured hike strategy as high inflation in the coming months ties their hands and takes away any chance of an easing. The threat of inflation is more insidious, adding liquidity at this time will just add fuel to the inflation fire. What about the argument that they should stand still? Wrong--the rest of the economy is fine except for the gasoline/oil disruption. This classic supply shock has only one cure: tightening, which will bring demand in balance with the reduced supply. The lesson learnt from the 70's when we accommodated oil shocks was that this medicine is worse than the disease. By the same logic, wouldn't they have to tighten more than I am forecasting now? No, this shock is temporary, not a permanent one as with the 70's oil embargo. Staying the course will do the job of guiding this economy out of this travesty.

4. For the next few months there will be a flight to liquidity which will keep the

**Chart 2**

## National Impact of Hurricane Katrina

Change from August 2005 Forecast

| Change In | 2005Q3 | 2005Q4 | 2006Q1 | 2005 | 2006 |
|---|---|---|---|---|---|
| GDP Growth | -0.7% | -0.9% | -0.5% | -0.2% | -0.2% |
| Cons. Growth | -0.5% | -0.5% | -0.8% | -0.1% | -0.3% |
| Employment | -51K | -310K | -499K | -90K | -363K |
| 10-Year Bond | -0.3 | -0.3 | -0.3 | -0.2 | -0.1 |
| Housing Starts | -4.8% | -10.9% | -6.0% | -3.8% | -3.9% |
| Auto Sales | -0.6% | -1.2% | -2.4% | -0.6% | -1.8% |

Source: EFC Calculations

10-year bond from rising even though inflation pressures are present. This actually moderates the negative effect of reduced consumer confidence.

The chart (see chart 2) lists the impact on GDP growth and other major indicators for the next three quarters (including the current one) and the full years 2005 and 2006 compared to the August 2005 forecast. The biggest impact is in 4th quarter of 2005 for GDP and in the 1st quarter of 2006 for consumption. The effects are slightly bigger than the 0.5% effect I had initially thought. However, when one does the annual calculations, the impact is a small 0.2% drop in growth 2005 and 2006.

Why? Although the drop in car sales, housing starts and consumption happens now, the impact is over by mid-2006, and the rebound effect is strong enough to lift growth in late 2006 from the August 2005 forecast. This keeps the overall damage low. The comparisons to the August 05 forecast to the current simulation are shown in detail in the appendix table.
To conclude, the analysis is preliminary based on incomplete and constantly changing news on the status of oil, gas, pipelines and refineries. It also depends upon certain factors that are out of the forecasting realm, such as another hurricane not hitting the region in the next few months (the season isn't over yet), and the psychological impact of the first refugee crisis of this proportion in modern US history. The situation is fluid and every day brings more information. I will revisit this issue at my Sponsors' Seminar on October 5th. I will end this note with a caveat that I have learned from my forecasting experience: all initial negative estimates tend to get revised downward, i.e. reduced by a factor of five (9/11 experience) to ten (past hurricanes). Let's hope this episode lands in this revision range and not outside.