Gulf Coast unemployment trends, 2000 to 2010: hurricanes, recessions, oil spills

The recession of 2007–2009 caused the largest increases in unemployment rates in the states and along the coastline counties bordering the Gulf of Mexico; Hurricanes Katrina and Rita, touching land in 2005, had the next-largest effect

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our major events had the potential to adversely influence the unemployment rate of the coastline counties along the Gulf of Mexico from 2000 to 2010: the 2001 recession, the 2005 hurricane season, the 2007–2009 recession, and a major oil spill caused by an explosion on the Deepwater Horizon drilling rig in April 2010. This report examines changes in the unemployment rates in the Gulf coastline counties and compares them with their statewide unemployment rate changes and with changes in the U.S. unemployment rate. The primary data used for the analysis are unemployment rate data from the Bureau of Labor Statistics (BLS, the Bureau).1 Unemployment rate data also were obtained from the state government of Louisiana for five parishes from September 2005 to June 2006; these data are not available from the Bureau.²

Coastline counties defined

This study adheres to the definition of coastline counties used by the U.S. Census Bureau. In a 2010 Census Bureau report authored by Steven Wilson and Thomas Fischetti, coastline counties were defined as counties "adjacent to water classified as bay, estuary, gulf, sound, ocean, or sea."3 Using the Census Bureau's Topologically Integrated Geographic Encoding and Referencing (TIGER®) system, Wilson and Fischetti identified 56 coastline

counties (parishes in Louisiana) along the Gulf of Mexico. A list of the coastline counties and parishes used in the analysis that follows is given in exhibit A–1 in the appendix.

Gulf coastline unemployment rates

In order to examine the region of the Gulf of Mexico as a whole, an unemployment rate for all 56 coastline counties and an unemployment rate for the coastline counties in each of the five states along the Gulf were calculated. The unemployment rate for all 56 coastline counties was produced by summing the labor force and unemployment levels for all counties and then dividing the total unemployment level by the total labor force for the region. The unemployment rate for the coastal region of each of the five states was constructed in a similar manner. Mathematically,



Analyzing data not seasonally adjusted

The Bureau does not calculate seasonally adjusted unemployment rates at the county level.

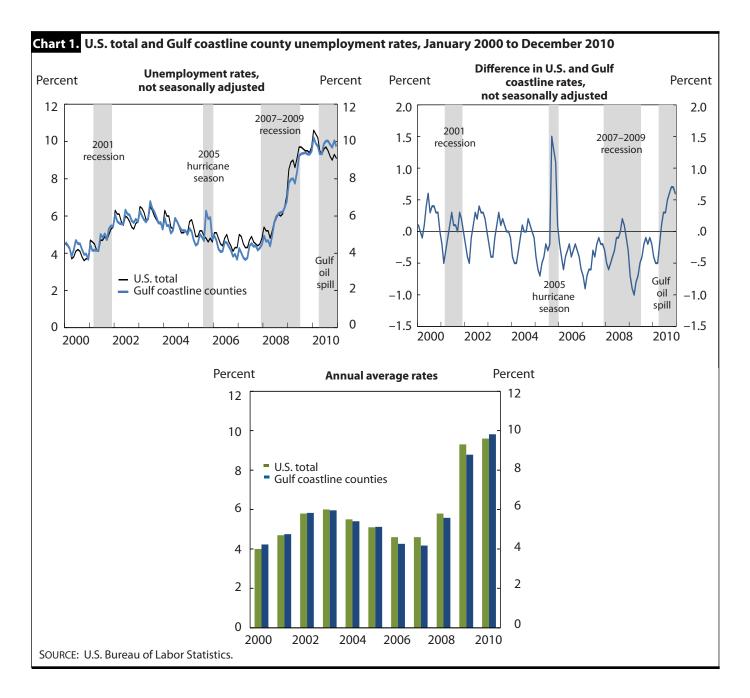
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Therefore, monthly occurring series used in this report are not seasonally adjusted and contain seasonal factors—cyclic movements in the data—that occur at the same time each year. In order to isolate the underlying trends from the seasonal factors, changes over time are calculated by comparing data for a given period with data for the same period in the previous year. That way, deviations from the seasonal movements may be uncovered. For example, a change in unemployment between January and April of one year must be compared with the change over the same period the previous year. Noteworthy changes are changes

that are substantially different from those posted for the same period the previous year.

Unemployment trends, 2000 to 2010

Chart 1 illustrates the unemployment rate trend in the Gulf Coast and in the United States as a whole from 2000 through the end of 2010. The top left panel plots the monthly unemployment rate, not seasonally adjusted, for each series. The seasonal factors in the monthly data are clearly evident in the cyclic peaks and troughs that occur at regular intervals



in most years. During the 2000–2010 period, the unemployment rate in the Gulf coastline counties tracked the national unemployment rate closely. The top right panel of chart 1 plots the difference in the two monthly series and reveals that the unemployment rate of the Gulf coastline counties was never more than 1 percentage point away from the national unemployment rate, with the exception of the 2005 hurricane season. The unemployment rate of the Gulf coastline counties was below the national unemployment rate 58 percent of the time from 2000 to 2010, but overall the two rates were very close, with the Gulf Coast rate just one-tenth of one percentage point below the national rate, on average.

The bottom panel of chart 1 plots the annual average unemployment rates for the United States and the Gulf of Mexico coastline counties. From 2000 to 2010, the annual average unemployment rate for the nation was as low as 4.0 percent and as high as 9.6 percent. The annual average unemployment rate for the coastline counties of the Gulf dipped as low as 4.2 percent and reached as high as 9.8 percent during the 2000-2010 period. The counties along the Gulf Coast had an annual average unemployment rate (rounded) equal to or lower than the U.S. annual average from 2001 through 2009. The annual average unemployment rate for the Gulf coastline counties was greater than the national unemployment rate only in 2000 and 2010.

The 2001 recession

The 2001 recession lasted from March through November, according to the National Bureau of Economic Research (NBER), the official arbiter of beginning and ending dates of recessions.⁴ During that time, the unemployment rate (not seasonally adjusted) for the coastline counties of the Gulf of Mexico rose by 1.3 percentage points. The unemployment rate for these counties fell by 0.3 percentage point during the same period (March through November) of the previous year, resulting in a difference of 1.6 percentage points. For the United States as a whole, the unemployment rate (again, not seasonally adjusted) increased 0.8 percentage point during the 2001 recession, slightly lower than the increase exhibited in the Gulf coastline counties. The national unemployment rate fell by 0.6 percentage point during the same period the previous year, for a difference of 1.4 percentage points. (See table 1.)

The coastline counties of Florida showed the largest unemployment rate increase of all gulf coastline counties during the 2001 recession, a rise of 1.6 percentage points. The unemployment rate for Florida's coastline counties was unchanged (0.0) over the same period the previous year, producing a difference of 1.6 percentage points. Florida also had

Table 1. Unemployment rate changes during the 2001 recession, 1 not seasonally adjusted				
Geographical area	Total change during 2001 recession	Total change in 2000	Difference (total change during 2001 recession minus total change in 2000)	
United States	0.8	-0.6	1.4	
Gulf coastline counties	1.3	3	1.6	
Alabama				
Statewide	1.2	.2	1.0	
Gulf coastline counties	1.1	2	1.3	
Florida				
Statewide	2.0	1	2.1	
Gulf coastline counties	1.6	.0	1.6	
Louisiana				
Statewide	.9	.4	.5	
Gulf coastline counties	1.2	.5	.7	
Mississippi				
Statewide	.8	-1.1	1.9	
Gulf coastline counties	1.0	-1.7	2.7	
Texas				
Statewide	1.2	6	1.8	
Gulf coastline counties	1.0	7	1.7	

¹ The recession lasted from March 2001 to November 2001. Source: U.S. Bureau of Labor Statistics.

the largest statewide unemployment rate increase of all gulf states, 2.0 percentage points, a figure that contrasted with a 0.1-percentage-point decline from March to November of 2000. The difference was 2.1 percentage points.

The largest unemployment rate increase (not seasonally adjusted) of the 2001 recession in any single county occurred in Gulf County, Florida, 2.4 percentage points. During the same period the previous year, the unemployment rate fell by 1.3 percentage points, resulting in a difference of 3.7 percentage points. Seven of the ten coastline counties with the highest unemployment rate increases (again, not seasonally adjusted) during the 2001 recession were in Florida. The remaining three were in Texas. (See table 2.)

The 2005 hurricane season

The 2005 hurricane season devastated the states along the Gulf of Mexico, with Louisiana and Mississippi sustaining the most damage. Hurricane Katrina landed on the Louisiana coast on August 29, and Hurricane Rita followed less than a month after, landing on the border between Texas and Louisiana on September 24. These two hurricanes caused such damage to the Gulf region that the effects are still evident 7 years later, in 2012.

Data abnormalities. The destruction caused during the 2005 hurricane season resulted in disruptions to the normal data

Table 2. The 10 Gulf coastline counties with the highest unemployment rate changes during the 2001 recession,1 not seasonally adjusted

County and state	Total change during 2001 recession	Total change in 2000	Difference (total change during 2001 recession minus total change in 2000)
Gulf County, Florida	2.4	-1.3	3.7
Bay County, Florida	2.3	.5	1.8
Calhoun County, Texas	2.3	.0	2.3
Cameron County, Texas	2.0	1	2.1
Pinellas County, Florida	2.0	-1.3	3.3
Pasco County, Florida	1.9	.0	1.9
Monroe County, Florida	1.8	.0	1.8
Kenedy County, Texas	1.8	.1	1.7
Hernando County, Florida	1.8	-1.9	3.7
Hillsborough County, Florida	1.8	.2	1.6

¹ The recession lasted from March 2001 to November 2001.

Source: U.S. Bureau of Labor Statistics.

collection and production methods used to produce employment data for the region. Several adjustments were made by both BLS and the Census Bureau to ensure the continuation of accurate estimation of employment data for the region.⁵ Despite such precautions, BLS unemployment data are not available for the five coastline Louisiana parishes—Jefferson, Orleans, Plaquemines, St. Bernard, and St. Tammany—that are included in this report. The problem was insufficient responses from the households and business establishments that provide the raw data used to produce the unemployment estimates. As a result, the Bureau does not publish unemployment data for September 2005 to June 2006 for these parishes. Estimates for these coastline parishes are available from the Louisiana Workforce Commission, but because official data regarding the number of people evacuated following Hurricanes Katrina and Rita are not yet available, the estimates are subject to revision.

Labor force changes. The labor force in the coastline counties of Louisiana and Mississippi changed considerably during the 2005 hurricane season. Just how much of the change resulted directly from the hurricanes is difficult to determine, because "official estimates of the population shifts associated with the evacuation and relocation of Louisiana, Mississippi, and Alabama residents [were] not available" as of June 2011, according to the Bureau.8

Regardless of the specific causes, it is clear that the labor forces of Louisiana and Mississippi, and especially the Gulf coastline counties of those states, contracted dramatically in 2005 and 2006. (See charts 2 and 3.) This contraction is

important because the labor force is the basis for calculating those states' unemployment rate. From 2005 to 2006, the annual average labor force level fell 13 percent in the coastline counties of Louisiana and 10 percent in the counterpart counties of Mississippi. Through 2010, the labor force in both regions remained below the levels seen in the first half of the decade. The 2010 annual average labor force level remains 5 percent below the 2005 level in Louisiana and 3 percent below the 2005 level in Mississippi.

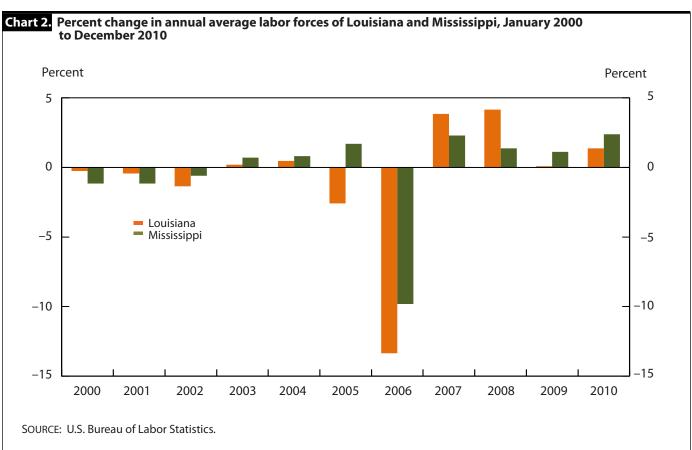
Unemployment rate changes. Since Hurricane Katrina touched land at the end of August, increases in unemployment in the affected region were not reflected in the data until September 2005. Also, it is difficult to identify a clear distinction in the unemployment data between Hurricanes Katrina and Rita, because Katrina caused so much damage on its own and Rita struck very soon after. Therefore, the discussion that follows will not attempt to assign causation to either hurricane specifically, but rather will examine the changes in unemployment for the entire period in question.

The unemployment rate (not seasonally adjusted) for the coastline counties of the Gulf of Mexico rose by 1.6 percentage points in September 2005, compared with a decrease of 0.2 percentage point in September of the previous year. The national unemployment rate (again, not seasonally adjusted) fell by 0.1 percentage point in September 2005, a decrease similar to the 0.3-percentage-point decline in September 2004.

The impact on the unemployment rate from the 2005 hurricane season was higher in the coastline counties of Louisiana and Mississippi than in any other state along the Gulf. Unemployment rates (not seasonally adjusted) for the coastline counties of Louisiana and Mississippi reached more than 10 percent in September 2005, the first time the unemployment rate (not seasonally adjusted) for any of these regions grew beyond 10 percent in the history of the data used for this report (beginning in January 2000). ¹⁰ The high unemployment rates in Louisiana and Mississippi statewide—but especially in their coastline counties—exhibited in September 2005 are well above the rates of the previous year. (See table 3.)

The 2007-2009 recession

The 2007–2009 recession lasted from December 2007 through June 2009, according to NBER. This recession was severe and drove unemployment rates up in most parts of the country, including states bordering the Gulf of Mexico. BLS economic comparisons used annual average unemployment rates for 2007 and 2009 in order to avoid comparing changes for periods longer than 1 calendar year.



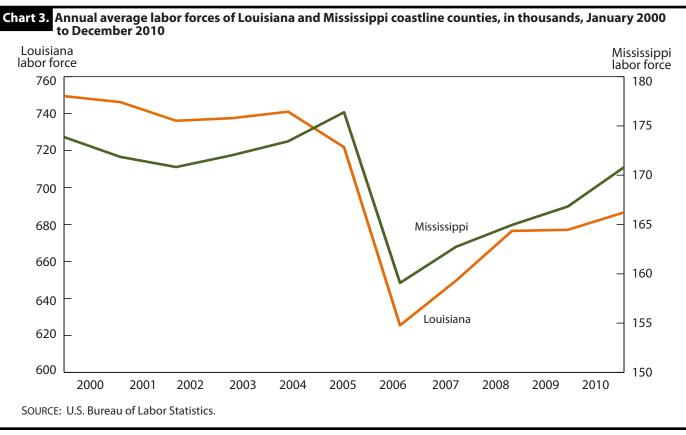


Table 3. Unemployment rates during the 2005 hurricane season, not seasonally adjusted								
Consumbled and	2005			2004				
Geographical area	September	October	November	December	September	October	November	December
United States	4.8	4.6	4.8	4.6	5.1	5.1	5.2	5.1
Gulf coastline counties	6.3	5.9	5.9	4.7	5.3	5.2	5.2	5.0
Alabama								
Statewide	3.7	3.6	3.3	3.3	4.9	4.7	4.5	4.3
Gulf coastline counties	4.4	3.8	3.5	3.3	5.4	5.4	5.1	4.7
Florida								
Statewide	3.8	3.5	3.6	3.1	4.7	4.6	4.4	4.2
Gulf coastline counties	3.7	3.3	3.4	2.9	4.3	4.2	4.2	3.9
Louisiana								
Statewide	11.0	10.6	10.9	5.8	5.3	5.2	5.2	5.1
Gulf coastline counties	12.8	12.9	13.3	6.9	4.7	4.9	5.0	4.8
Mississippi								
Statewide	9.6	8.9	8.6	8.0	6.5	6.9	6.6	6.8
Gulf coastline counties	23.8	20.3	18.0	15.6	5.6	6.2	5.8	5.7
Texas								
Statewide	5.3	5.0	5.2	4.9	5.7	5.6	5.7	5.6
Gulf coastline counties	6.1	5.9	5.9	5.5	6.3	6.2	6.3	6.1
Source: U.S. Bureau of Labor S	Statistics.							

Table 4.	Annual average unemployment rates during
	the 2007–2009 recession1

Geographical area	2009	2007	Difference (total change from 2007 to 2009)
United States	9.3	4.6	4.7
Gulf coastline counties	8.8	4.2	4.6
Alabama			
Statewide	9.7	3.4	6.3
Gulf coastline counties	9.6	3.2	6.3
Florida			
Statewide	10.2	4.0	6.2
Gulf coastline counties	10.5	4.1	6.4
Louisiana			
Statewide	6.6	3.8	2.8
Gulf coastline counties	6.2	3.3	2.9
Mississippi			
Statewide	9.6	6.2	3.4
Gulf coastline counties	8.1	5.5	2.6
Texas			
Statewide	7.6	4.4	3.2
Gulf coastline counties	7.8	4.5	3.3

¹The recession lasted from December 2007 to June 2009; annual averages from the first and last year of the recession are used for comparisons. Source: U.S. Bureau of Labor Statistics.

The annual average unemployment rate in the counties along the Gulf Coast increased by 4.6 percentage points from 2007 to 2009. The annual average unemployment rate for the nation increased by a similar 4.7 percentage points during the same period. At the end of the recession in 2009, both the national unemployment rate and the unemployment rate of the Gulf coastline counties were more than double their 2007 annual averages. Alabama and Florida showed the largest changes in annual average unemployment rates from 2007 to 2009, 6.3 and 6.2 percentage points, respectively. The unemployment rate in the coastline counties in each of those states grew by similar amounts. Annual average unemployment rates statewide and in the coastal counties in Louisiana, Mississippi, and Texas grew by about 3 percentage points from 2007 to 2009, less than half the unemployment rise seen in Alabama and Florida. (See table 4.)

Florida's statewide and Gulf coastline county annual average unemployment rates were more than 10 percent in 2009, so it is no surprise that, of the 10 coastline counties with the highest annual average unemployment rates that year, 9 were in Florida. Hernando County, Florida, had the highest annual average unemployment rate of all Gulf coastline counties in 2009, 12.9 percent, an increase of 7.3 percentage points from the county's 2007 annual average. Willacy County, Texas, was the only Gulf coastline county outside Florida in the top 10, with an annual average unemployment rate of 11.9 percent. All counties in the top 10 had annual average unemployment rates of 11 percent or higher in 2009. (See table 5.)

The Deepwater Horizon oil spill

On April 20, 2010, an explosion on the Deepwater Horizon oil rig operating at the Macondo Prospect in the Gulf of Mexico caused an oil leak that released more than 4 million barrels of crude oil into the Gulf before the well was capped

Table 5. The 10 Gulf coastline counties with the highest annual average unemployment rates during the 2007–2009 recession¹

County and state	2009	2007	Difference (total change from 2007 to 2009)
Hernando County, Florida	12.9	5.6	7.3
Lee County, Florida	11.9	4.5	7.4
Willacy County, Texas	11.9	8.2	3.7
Citrus County, Florida	11.7	4.9	6.8
Pasco County, Florida	11.6	4.8	6.8
Charlotte County, Florida	11.5	4.9	6.6
Manatee County, Florida	11.2	4.0	7.2
Dixie County, Florida	11.1	4.2	6.9
Levy County, Florida	11.1	4.1	7.0
Sarasota County, Florida	11.0	4.3	6.7

¹ The recession lasted from December 2007 to June 2009; annual averages from the first and last year of the recession are used for comparisons.

almost 3 months later, on July 15. This disaster resulted in the temporary closure of Gulf fisheries and a moratorium on new drilling activity in the Gulf. Because the event occurred after the BLS reference week, unemployment data for April 2010 were unaffected. Therefore, the period examined in the analysis that follows lasts from May 2010 through December 2010.

Like most parts of the country in May 2010, the Gulf region had not yet recovered from the high unemployment brought on by the 2007–2009 recession. As a result, the unemployment rates in each state and county along the Gulf Coast in 2010 are high compared with previous years' rates. The recession ended in June 2009, less than a year before the Deepwater Horizon oil spill, a timeframe which makes it difficult to observe any unemployment changes that can be separated from the persistent influence of the 2007 recession. Table 6 shows changes in the unemployment rates of Gulf states and their coastline counties following the Deepwater Horizon oil spill. All of the areas listed had high unemployment rates, but little growth in unemployment, for the period from May 2010 through December 2010, compared with the same period the previous year. In fact, most areas had larger unemployment increases during the 2007–2009 recession.

Except for Jefferson County, Florida, the 10 counties with the highest unemployment rate changes following the Gulf oil spill also show little difference from the rates they exhibited during the same period the previous year. (See table 7.) An interesting detail is that none of the counties along the Alabama, Louisiana, or Mississippi coasts had unemployment increases from May 2010 to

Table 6. Unemployment rate changes following the Deepwater Horizon oil spill in the Gulf of Mexico, not seasonally adjusted1

Geographical area	2010, post oil spill change	Previous year's (2009's) change	Difference (total change from May 2010 to December 2010, minus change during 2009)
United States	-0.2	0.6	-0.8
Gulf coastline counties	.4	1.1	7
Alabama			
Statewide	2	.8	-1.0
Gulf coastline counties	1	1.6	-1.6
Florida			
Statewide	.8	1.2	4
Gulf coastline counties	.7	1.4	7
Louisiana			
Statewide	.0	.6	6
Gulf coastline counties	1	7	8
Mississippi			
Statewide	6	1.1	-1.7
Gulf coastline counties	2	1.6	-1.9
Texas			
Statewide	.1	.6	5
Gulf coastline counties	.3	.9	6

¹ The period of interest is May 2010 (the month following the oil spill) through December 2010.

Source: U.S. Bureau of Labor Statistics.

Table 7. The 10 Gulf coastline counties with the highest unemployment rate changes following the Deepwater Horizon oil spill in the Gulf of Mexico, not seasonally adiusted1

County and state	2010, post oil spill change	Previous year's (2009's) change	Difference (total change from May 2010 to December 2010, minus change during 2009)
Bay County, Florida	2.7	2.6	0.1
Jefferson County, Florida	2.6	.9	1.7
Gulf County, Florida	2.0	2.8	8
Franklin County, Florida	1.7	2.0	3
Walton County, Florida	1.7	1.9	2
Matagorda County, Texas	1.3	1.4	1
Kenedy County, Texas	1.3	1.6	3
Okaloosa County, Florida	1.2	1.5	3
Cameron County, Texas	1.2	1.3	1
Escambia County, Florida	1.1	1.4	3

¹ The period of interest is May 2010 (the month following the oil spill) through December 2010.

Source: U.S. Bureau of Labor Statistics.

December 2010 large enough to make it into the top 10. News coverage of the Gulf oil spill focused heavily on the Alabama, Louisiana, and Mississippi coastlines, but the

Source: U.S. Bureau of Labor Statistics.

direct effect of the spill on unemployment cannot clearly be separated from the lingering effects of the 2007–2009 recession. Although the Deepwater Horizon oil spill undoubtedly affected the Gulf region in an important way, the unemployment data following the event do not clearly reflect the impacts sustained.

OVER THE 2000–2010 PERIOD, the unemployment rate (not seasonally adjusted) in the Gulf coastline counties tracked the national unemployment rate closely. Indeed, the unemployment rate of the Gulf coastline counties was never more than 1 percentage point away from the national unemployment rate, except for the 2005 hurricane season. During the 2001 recession, the unemployment rate (not seasonally adjusted) in the Gulf coastline counties rose by slightly more than the U.S. unemployment rate. The highest unemployment rate changes in the Gulf coastline counties occurred in Florida.

The 2005 hurricane season had a severe impact on the Gulf Coast, especially in Louisiana and Mississippi. Although the unemployment data are subject to revision, it is clear that unemployment rates remained high in the coastal counties of Louisiana and Mississippi months after Hurricanes Katrina and Rita hit. The 2007-2009 recession caused the largest increase in unemployment during the 2000–2010 period. The average annual unemployment rate in the Gulf coastline counties grew by 4.6 percentage points from 2007 to 2009. Finally, the Deepwater Horizon oil spill severely damaged the Gulf Coast in many ways, but its effect on the unemployment rate of the region is difficult to separate from the long-lasting unemployment rate changes caused by the 2007–2009 recession.

Further research might inform this examination of labor force levels by considering population levels in the gulf coastline counties after the hurricanes and contrasting the employment-population ratio with the unemployment rate. Also, it might be instructive to learn whether the occupational employment mix in the region changed dramatically after the hurricanes. Similar considerations could apply to the aftermath of the oil spill.

Notes

- ¹ See "Local Area Unemployment Statistics" (U.S. Bureau of Labor Statistics, updated monthly and annually), http://www.bls.gov/lau.
- ² See "What's Hot in Labor Market Information" (Louisiana Workforce Commission, updated monthly), http://voshost.com/analyzer/ default.asp.
- ³ Steven G. Wilson and Thomas R. Fischetti, "Coastline Population Trends in the United States: 1960 to 2008" (U.S. Census Bureau, May 2010), p. 3, http://www.census.gov/prod/2010pubs/p25-1139.pdf.
- ⁴ See "U.S. Business Cycle Expansions and Contractions" (Cambridge, MA, National Bureau of Economic Research, Sept. 20, 2010), http://www. nber.org/cycles/cyclesmain.html.
- ⁵ See "BLS Information: Effects of Hurricane Katrina on Local Area Unemployment Statistics" (U.S. Bureau of Labor Statistics, Oct. 20, 2005),

http://www.bls.gov/katrina/lausquestions.htm.

- ⁶ For a complete list of the counties and parishes affected by Hurricanes Katrina and Rita, see "Labor Market Statistics Prior to Disaster for Areas Affected by Hurricanes Katrina and Rita" (U.S. Bureau of Labor Statistics, Jan. 27, 2006), http://www.bls.gov/katrina/data.htm#5.
 - ⁷ See the agency's home page, http://www.laworks.net.
 - ⁸ See "BLS information: Effects of Hurricane Katrina."
- ⁹ The unemployment rate is equal to the number of unemployed divided by the labor force. (See "Local Area Unemployment Statistics: Estimation Methodology" (U.S. Bureau of Labor Statistics, Sept. 11, 2009), http://www.bls.gov/lau/laumthd.htm.)
- ¹⁰ County-level unemployment data from 1990 on are available. (See "Local Area Unemployment Statistics.")

APPENDIX: Coastline counties along the Gulf of Mexico

Exhibit A-1. Gulf o	oastline counties
State	Coastline counties or parishes
Alabama	Baldwin, Mobile
Florida	Bay, Charlotte, Citrus, Collier, Dixie, Escambia, Franklin, Gulf, Hernando, Hillsborough, Jefferson, Lee, Levy, Manatee, Monroe, Okaloosa, Pasco, Pinellas, Santa Rosa, Sarasota, Taylor, Wakulla, Walton
Louisiana (parishes)	Cameron, Iberia, Jefferson, Lafourche, Orleans, Plaquemines, St. Bernard, St. Mary, St. Tammany, Terrebonne, Vermilion
Mississippi	Hancock, Harrison, Jackson
Texas	Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Harris, Jackson, Jefferson, Kenedy, Kleberg, Matagorda, Nueces, Refugio, San Patricio, Victoria, Willacy
Source: U.S. Censu	s Bureau.