
**Spatial Restructuring and Fiscal Impacts
in the Wake of Disaster: The Case of the
Oil and Gas Industry Following
Hurricanes Katrina and Rita**

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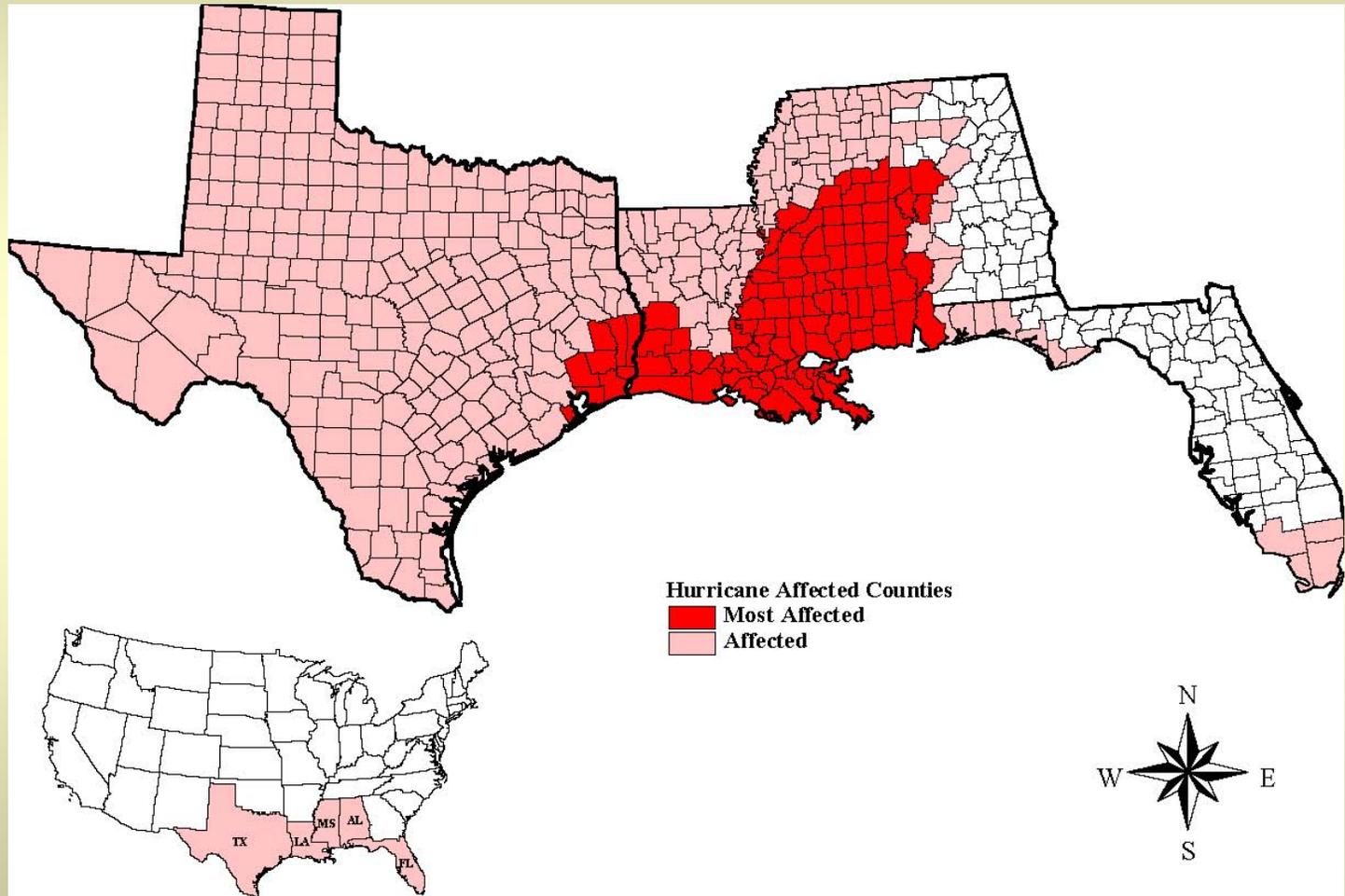
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The Context

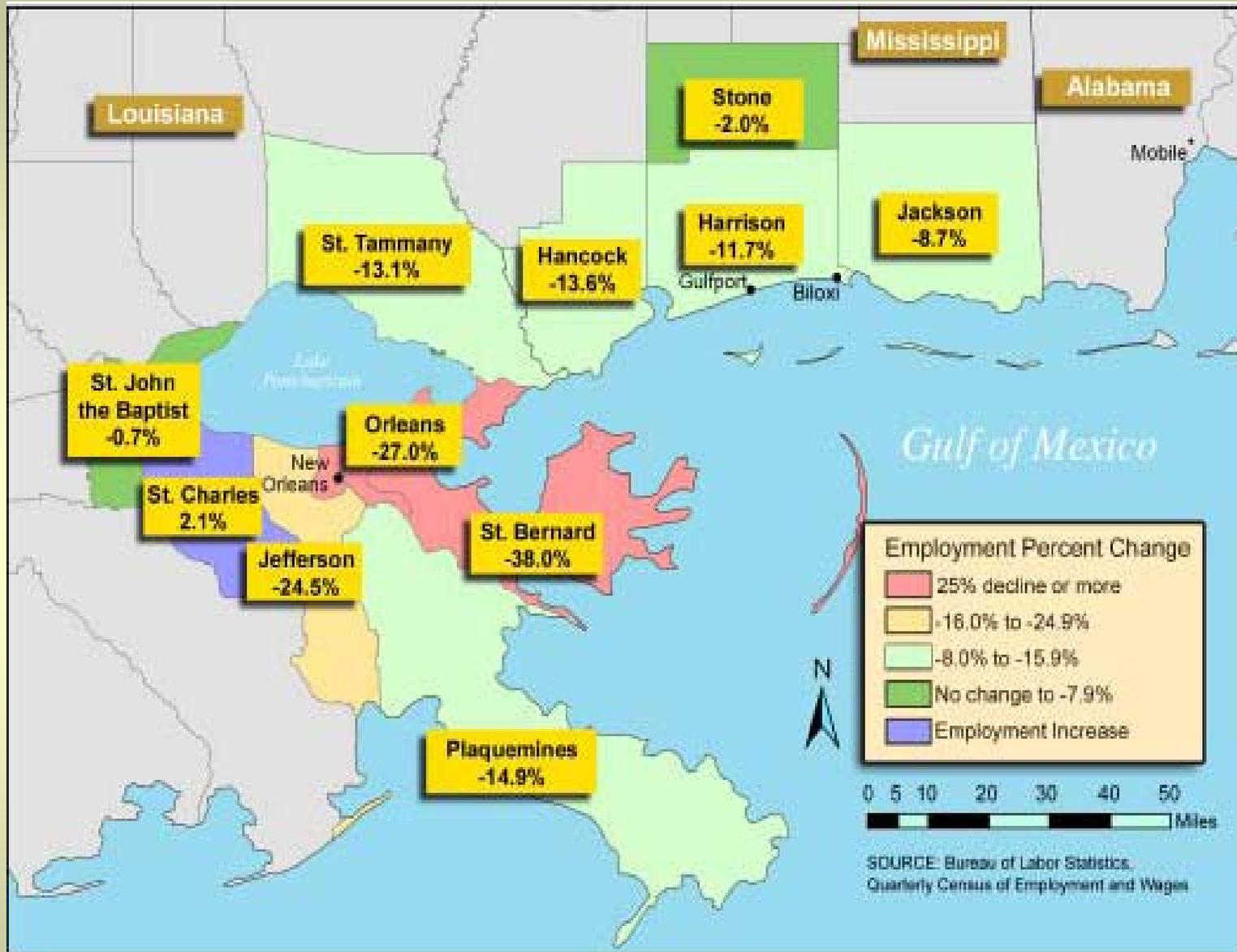
- On 29 August 2005, Hurricane Katrina made landfall along the Louisiana/Mississippi state border.
 - One of the deadliest and costliest storms in U.S. history
 - Catastrophic damage to coastal communities, including widespread flooding in New Orleans
 - On 24 September 2005, Hurricane Rita made landfall along the Louisiana/Texas state border.
 - Caused extensive damage, particularly in the coastal parishes of southwest Louisiana
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Counties/Parishes Designated for Public and/or Individual Assistance from FEMA



The Context

- Storms led to major disruptions in the labor markets of the affected region.
 - Approximately 38% of business establishments in Louisiana and Mississippi were within a 100 mile corridor of Katrina's path.
 - FEMA-designated damage zones contained approximately 17% of Louisiana employment and 5% of Mississippi employment.
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Note: Over-the-year percent change in employment from September 2004 to September 2005

The Context in Sum

- Storms led to major labor market disruptions.
 - There were differential impact on various economic sectors.
 - The ability of the region to rebuild and recover depends heavily on how the oil and gas industry and other sectors of the economy respond in the wake of these disasters.
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Research Questions

- What role will the oil and gas industry play in providing employment stability in the affected region in the aftermath of the hurricanes, and how will this change over time?
 - Will spatial shift in employment occur in response to the hurricanes? If so, which areas stand to benefit and which areas stand to suffer from these changes?
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Research Questions

- How will the response of the oil and gas industry in the wake of these storms compare to other major industrial sectors in terms of its impact on employment?
 - What are the broader implications for coastal communities, states, and GOM region?
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Research Design

- Mixed method design
 - Extensive **literature review** on the socioeconomic dimensions of disaster (over 240 references cataloged to date)
 - **Guided conversations** with local leaders and industry representatives
 - Analysis of **secondary data** to develop a statistical portrait of economic change and its relationship with social vulnerability

Guided Conversations

- Objective is to gain insights from key informants regarding the economic impacts of the storms and implications for the broader community
 - Guided conversations with community and industry representatives in:
 - Biloxi/Pascagoula, Mississippi; New Orleans/St. Bernard/Plaquemines, Baton Rouge, Lafayette, and Lake Charles/Cameron, Louisiana
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Guided Conversations

- “Preliminary” results from Biloxi/Pascagoula
 - Framing hurricane as a development “opportunity”
 - Major economic drivers reestablished
 - Biloxi: Resort/gaming; Keesler Air Force Base
 - Pascagoula: Military vessel/aircraft fabrication; oil refining and OCS servicing
 - Land prices skyrocketing
 - Small businesses being squeezed
 - Dearth of affordable housing
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Secondary Data Analysis

- Paints a statistical portrait of economic change in the impacted region
 - Uses County Business Patterns (CBP) data to monitor trends
 - Provides annual employment data (collected by Census Bureau) for all U.S. counties/parishes
 - Provides most detailed data available on regional economies
 - Allows for tracking employment changes in oil and gas industry and other industrial sectors
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Secondary Data Analysis

- Two limitations of CBP data for our purposes
 - Data suppression, particularly in rural areas
 - New technique developed by Isserman and Westervelt (2006) to overcome suppression
 - Time lag associated with data availability
 - Data reflecting impact of storms will not be released until Summer 2007
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Secondary Data Analysis

- Using counties as unit of analysis, will analyze how economic changes are related to measures of social vulnerability
 - Following Cutter, Boruff, and Shirley (2003) creates plan to construct a social vulnerability index (SoVI) for the GOM region
 - Tests for relationships between dimensions of SoVI and economic change
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Secondary Data Analysis

- Approach rooted in the hazards-of-place model of vulnerability
 - Idea is that social vulnerabilities of place influence susceptibility to disasters and ability to respond in their wake
 - Concepts include aggregate measures of SES, demographic structure, industrial structure, rural/urban, special needs populations ...
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Secondary Data Analysis

- County-level data compiled on over 60 variables suggested by the literature
 - Data drawn from 2000 Census, County and City Data Book, and U.S.A. Counties
- Data reduction techniques (factor analysis) to be employed to construct an index pertinent dimensions of social vulnerability
 - Result will be a GOM region-specific SoVI

Summary

- Use primary and secondary data to assess the impacts of the hurricanes on the economic structure of the GOM region, the oil and gas industry in particular.
 - The study develops SoVI for GOM region.
 - The study draws implications for coastal communities, states, and the GOM region.
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References

- Cutter, S.L., B.J. Boruff, and W.L. Shirley. 2003. Social vulnerability to environmental hazards. *Social Science Quarterly* 84(2):242–261.
- Isserman, A.M. and J. Westervelt. 2006. 1.5 million missing numbers: Overcoming employment suppression in County Business Patterns data. *International Regional Science Review* 29(3):311–335.
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