

**STUDY TITLE:** Gulf of Mexico University Initiative: Studies of Long-Term Effects of Oil and Gas Production

**REPORT TITLE:** OCS Development and Coastal Income Inequality: A Comparative Analysis

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**BACKGROUND:** This research contrasts income inequality in an area with extensive onshore and offshore oil and gas development with a similar, undeveloped area. Despite growing concerns about the social, cultural, and economic effects of oil and gas development, there is relatively little documentation of socioeconomic effects. In view of the paucity of such research, an income distribution analysis is an undertaking of the highest priority. One reason for the lack of socioeconomic research has been the absence of viable data that span both the expansion and contraction of development off the Louisiana coast. Some coastal parishes are remote, and some are sparsely populated. Consequently, the only reliable and valid available data for such areas are decennial censuses. The release in 1993 of county-level summary data from the 1990 Census made it possible to develop inequality measures from three consecutive decennial censuses.

**OBJECTIVES:** 1) To conduct a comparative analysis of coastal income inequality in 1970, 1980 and 1990; and 2) to conduct a modeling of income inequality for the same time period. The comparative analysis contrasts inequality patterns in coastal Louisiana

parishes and panhandle counties of north Florida where there has been little onshore or offshore activity. Thus, the Florida counties are treated as a control group contrasted with Louisiana parishes. To maximize the utility and validity of comparisons, efforts were made to pair and/or match counties and parishes as closely as possible on relevant baseline (1970) social, demographic, and economic characteristics.

**DESCRIPTION:** The study areas consisted of all Louisiana parishes adjacent to the Gulf of Mexico (except Jefferson Parish) and Florida Panhandle counties adjacent to the gulf from Santa Rosa to Taylor.

The comparative analysis of family income inequality employed parish- and count-level data from the 1970, 1980, and 1990 Censuses. The focus of the analysis was trends in family income inequality in coastal Louisiana parishes adjacent to the substantially developed Outer Continental Shelf (OCS). The comparative analysis design permitted inequality trends in Louisiana parishes to be compared to inequality trends in coastal counties of the Florida panhandle where there has been no significant OCS development. Inequality trends in the parishes and counties along the Gulf of Mexico were also compared to state-wide family income inequality in Louisiana and Florida. The analysis design permitted a temporal comparison across key decades in the recent history of the oil and gas industries. While the decade of the 1970s was one of rising oil prices and greatly expanded industry development, the 1980s saw prices fall and industry activity decline. This change in development patterns is an important reason to study inequality trends in the 1970-1980 and 1980-1990 periods. Following conventions of inequality analysis, trends in family income inequality were gauged with multiple measure of inequality computed with decennial census data. The inequality was then modeled with ordinary least squares and pooled time-series, cross-sectional estimators.

**SIGNIFICANT CONCLUSIONS:** While Florida inequality primarily moves downward across time, inequality in Louisiana exhibits a great deal of volatility and, by 1990, is higher than in 1970 in several cases. The volatility is uniform across all types of Louisiana households. The Louisiana patterns indicate a substantial impact of oil and gas development primarily on coastal families in the middle to upper middle portions of the income distribution. Variables introduced in inequality models generally did not eliminate the sharp differences between coastal Louisiana parishes and panhandle counties of Florida or the volatility in the Louisiana patterns. Local manufacturing employment in Louisiana, however, did show some promise, we must look beyond typically important variable such as education, race, industry mix, and the national economy. The Louisiana inequality patterns clearly follow the expansion and contraction of oil and gas industry activity much more than they follow any factors introduced in our models.

**STUDY RESULTS:** An initial review of per capita income and median family income figures indicated lower 1970 income in Louisiana parishes than in Florida counties. By 1980, the income relationship in coastal areas was reversed with Louisiana parishes generally exhibiting higher incomes--some precipitously higher--than Florida counties. Louisiana statewide and coastal 1990 incomes, however, were well below those of

Florida. After taking inflation into account, coastal 1990 median family income levels in Louisiana were actually lower than they were in 1970.

A comparative inequality analysis revealed very different patterns of income inequality for statewide and coastal areas of Florida and Louisiana. While Florida inequality primarily tended downward across time, inequality in Louisiana exhibited a great deal of volatility and, by 1990, was higher than in 1970 in several cases. The Louisiana patterns suggest a substantial impact of oil and gas development on coastal families in the middle to upper middle portions of the income distribution. There is little evidence to indicate impact on lower income families.

In the modeling phase of the analysis, we attempted to account for these inequality patterns by controlling for important factors known to influence inequality. At best, the models accounted for roughly half the variance in the observed inequality. Moreover, through the modelling procedures, we were unable to eliminate the sharp differences between coastal Louisiana parishes and panhandle counties of Florida or the volatility in the Louisiana patterns.

**STUDY PRODUCT:** Tolbert, Charles, M. 1994. Oil and Gas Development and Coastal Income Inequality: A Comparative Analysis. A final report by Louisiana Universities Marine Consortium for U.S. Dept. of the Interior, Minerals Management Service, Gulf of Mexico Region, OCS Office, New Orleans, LA. Contract No. 14-35-0001-30470. OCS Study MMS 94-0052. 82 pp.