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ABSTRACT

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1. EXECUTIVE SUMMARY

The oil and gas industry often is seen as the historical force driving economic activity along the Gulf of Mexico (GOM) from Louisiana to Texas. In capital-intensive industries populated by large companies substantial portions of the returns generated go to non-resident individuals and institutions. The objective of the study is to understand how the evolution of the offshore oil and gas industry, as it developed reserves under federal jurisdiction, affected incomes of people living in the coastal parishes of Louisiana. Specifically, did offshore development result in cumulative economic effects that differentiate their economic experience and circumstances from the residents of Louisiana's non-coastal parishes?

Growth in per capita personal income in 19 coastal parishes in Louisiana is compared with 45 non-coastal parishes over the 1969 to 2000 time period. The time period is divided into the 1969 to 1980 domestic "energy boom," the 1981 to 1985 "price erosion and collapse," the 1986 to 1990 "recovery" and 1991 to 2000 "energy lull."

Per capita personal income is decomposed into the components accounting for its rate of growth—improvements in industry mix, changes in relative wages, participation in the labor force, receipt of transfer payments, and property income for each of the four phases of the 1969 to 2000 period. The decomposition is a way to compare systematically the economic experience of the residents of coastal parishes with the experience of those farther removed but still affected by the same changes in the regional and national economies. This same format was used to compare the five states bordering on the Gulf of Mexico and to compare Louisiana's eight metropolitan areas.

There is remarkably little difference between the average growth rates of the coastal and non-coastal parishes over the entire study period, or for any of the sub-periods considered separately.

Comparing the components of the growth, however, shows this equality is misleading during the initial two phases of "energy boom" and "price collapse." During the initial "boom" incomes in coastal parishes grew more from increased labor force participation (2.4 percentage points v. 0.5 percentage points) while in non-coastal parishes the contribution from transfer payments was much larger (1.75 percentage points v. 0.04 percentage points). Conversely, during the "collapse" the shock to incomes of coastal residents was transmitted through decreased labor force participation with little change in non-coastal parishes (−2.59 percentage points v. −0.03 percentage points) while incomes in coastal parishes were sustained by growth in transfer payments at twice the rate observed in non-coastal parishes (2.01 percentage points v. 0.91 percentage points).

During the "recovery" and "lull" phases of the period the components as well as the total growth rates for the two groups were very similar to each other. Over the entire 31-year period, they are nearly identical. This same pattern is observed when the petroleum intensive states (Louisiana and Texas) are compared to the other Gulf Coast States

(Alabama, Florida, and Mississippi) and when the metropolitan statistical areas (MSAs) in coastal Louisiana are compared to the MSAs in non-coastal Louisiana.

Rates of change in population and net migration are compared within this same chronological framework and no consistent patterns were found that distinguished the coastal parishes from the non-coastal parishes.

Relating changes in per capita income very precisely to the development of offshore oil and gas resources is complicated. First, there were major changes in the energy markets and institutions during the study period. World energy prices quadrupled and domestic prices of oil and gas not subject to regulations rose rapidly, national oil companies became dominant producers, and energy markets became less regulated and more transparent.

Secondly, and more central to our study, the temporal pattern of production of oil and gas from onshore reserves is quite different from the pattern of offshore production during the study period. Specifically:

- Onshore production of oil from Louisiana's coastal parishes peaked in 1970 when it was selling for about $2/barrel.
- After reaching this peak, onshore production fell extremely rapidly—dropping by 600 percent in 10 years—despite escalating crude oil prices.
- In contrast, offshore production peaked only temporarily in 1970 and fell only

interest rates, stagnating wages in the 1990s—affected all parts of the national economy including coastal and non-coastal parishes in Louisiana.

- The unusual "seven (or 14) days on, seven (or 14) days off" work schedules used on many offshore drilling rigs and production platforms facilitate more offshore workers residing outside of coastal parishes (or the state) and dilutes the secondary economic effects of offshore employment on coastal parishes.

Untangling the factors interacting exceeds the scope of the study, but the implications for the more limited analytical objectives of this essay are:

- Offshore production was largely a stabilizing force counterbalancing the sudden decline in onshore production during the 1970s and the serious deterioration of the oil and gas industry after the collapse of world oil prices in 1985.
- If one wants to look for the type of "boom-town" or cumulative economic effects that might be caused by offshore production, specifically; the relevant period would be the mid-1980s to the end of the 1990s—not the energy boom and bust of the 1970s and early 1980s.
- And, to reiterate, there is no discernable difference in the patterns of change in the components of per capita income or of population between coastal and non-coastal parishes observable during this latter period. In other words, the differential economic and social effects of the offshore oil and gas industry on the residents of the coastal parishes of Louisiana appear to have been temporary and transitory rather cumulative or permanent.

2. INTRODUCTION

The vicissitudes of the oil and gas industry usually are seen as the driving if not dominating force in the evolution and performance of the economy spread along the Gulf of Mexico (GOM)—especially in Louisiana and Texas. Some give oil and gas much of the credit for these states' economic successes, for others the cumulative effect of the industry's activity has been to create not only environmental but also economic and social problems.[1]

As exploration and production in the region have shifted to the petroleum resources located offshore on the outer continental shelf (OCS) under federal rather than state jurisdiction, the socioeconomic effects of OCS development on coastal economies and communities have become a relevant incarnation of this controversy. The Minerals Management Service, which manages OCS development for the federal government, includes such effects in the periodic assessments it is required to make of the consequences of its major policies, plans, and actions.

To understand the magnitude and duration of the effects that OCS development may have had on the Gulf Coast economy, other changes in the national and regional economy affecting the region need to be accounted for and made comparable. Without a comprehensive perspective that accounts for changes in the wider regional and national economy, the relationship between changes in the offshore energy sector and changes in the economies of coastal states and communities can be distorted. A narrow, two-sided comparison of trends and events on the OCS and trends and events in coastal states and communities can result in an illusion of causality inconsistent with either economics, history, or, occasionally, common sense.

Finding consistent patterns by objectively comparing the experiences of a wide range of localities and jurisdictions is the method used in this study. The method is not theoretically or statistically complex. However, applying it to data from the last third of the past century gives results at variance with conventional wisdom, namely, that the energy sector's economic importance to, or dominance of, coastal communities on the Gulf Coast has been exaggerated.

The energy perturbations set off by the Arab oil embargo of 1974, and the collapse of global oil prices and expectations in the mid 1980s, disproportionately affected coastal economies in oil and gas producing states like Louisiana and Texas, but probably not by as much as is generally believed. Since that time, however, long-term or cumulative effects of energy development seem weak or non-existent even in localities closely tied to the development of offshore oil and gas resources.

[1] The term "cumulative effects" has several dimensions. As pointed out by Richard Hildreth at a Minerals Management Socioeconomic Workshop (Hildreth, 2004), the relevant legal requirement is that "an EIS cumulative-effects study must identify (1) the area in which the effects of the proposed project are felt; (2) the impacts that are expected in that area; (3) other actions—past, proposed, and reasonably foreseeable—that have or had been expected; (4) the impacts or expected impacts [that] are allowed to accumulate; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate; (Fritiofson v. Alexander, 772 F.2d 1225 (5th Cir. 1985) p. 52."

Evaluating the performance of the national economy over roughly the same period we consider here, William Nordhaus (2004) concluded:

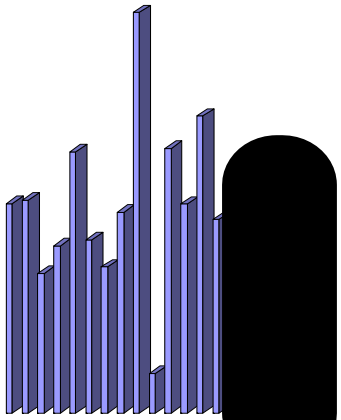
> But the past is not prologue, and the 1970s productivity slowdown has over the last decade been overcome by a productivity growth rebound originating primarily in the new-economy sectors. As the economy made the transition from the oil age to the electronic age, the aftershocks of the energy crises have died off and productivity growth has attained a rate close to its historic norm.

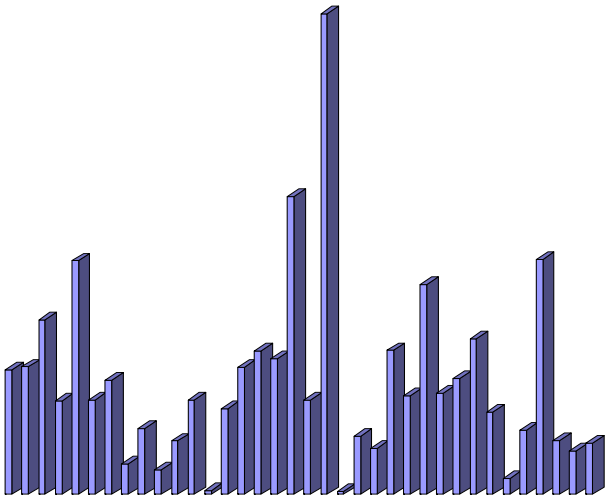
The application or implication of Nordhaus' conclusion for the Gulf Coast economy is that the repercussions of the energy boom and collapse of the 1970s and 1980s should not be confused with the cumulative economic effects of the exploration and production of oil and gas from the federal OCS. Louisiana is the nation's most energy intensive state and although it may still be closer to the oil than to the electric age, twenty years later the coastal parishes of Louisiana don't seem to be any worse off or any better off than the rest of the state now that the energy adjustments have been made. Louisiana's economy lags the rest of the country in economic and social improvement, but offshore oil and gas development clearly has mitigated rather than reinforced this unfortunate trend.

3. ENERGY AND THE GULF COAST ECONOMY

There is little doubt that the energy sector is very important on the Gulf Coast. As figures 1a and 1b and 2a and 2b illustrate, the "energy intensity," measured as units of oil or gas consumed per $1,000 of Gross State Product (GSP), is higher for the five GOM states—Texas, Louisiana, Mississippi, Alabama and Florida—than for any other contiguous regional configuration of states. Figures 1a and 1b compare the oil intensity of the states in 1980 and 2000 and Figures 2a and 2b make the same comparison for natural gas. Oil intensity in each of GOM states exceeded the national average in both years. Louisiana was more "oil intense" than any other state. Comparing 1980 to 2000 shows intensity has declined substantially in all states, but less so in Louisiana. Relative to the other states, Louisiana's oil intensity has increased.

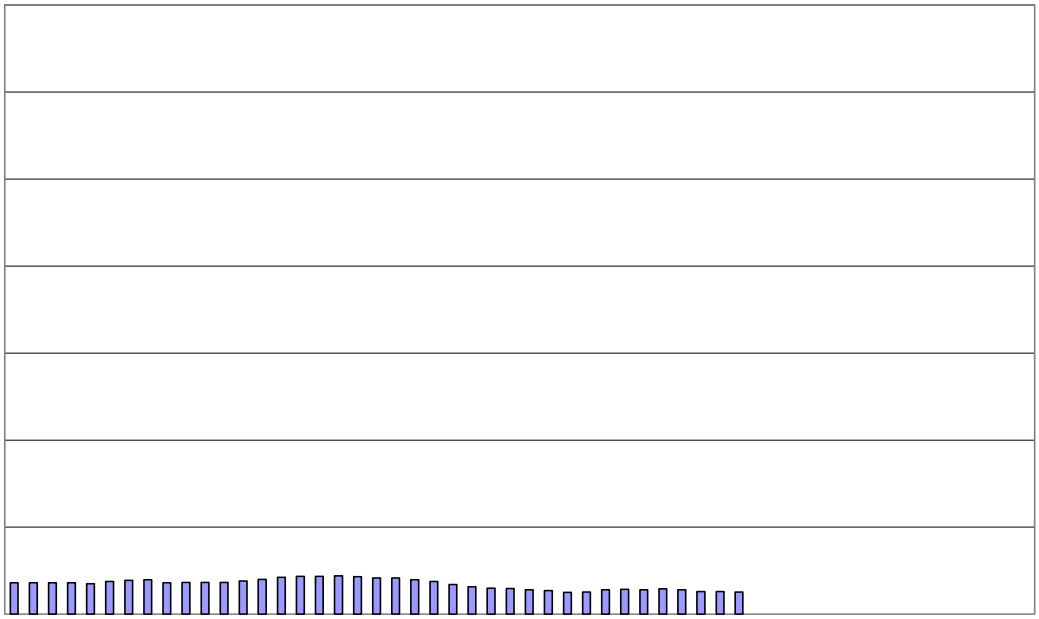
The picture for natural gas is similar, but the relative discrepancy among states is greater. In 2000, Alaska replaced Louisiana as the most "gas intense" state, but the relative difference between those two states and the other 48 widened. Florida is the only GOM state whose gas intensity is below the national average.

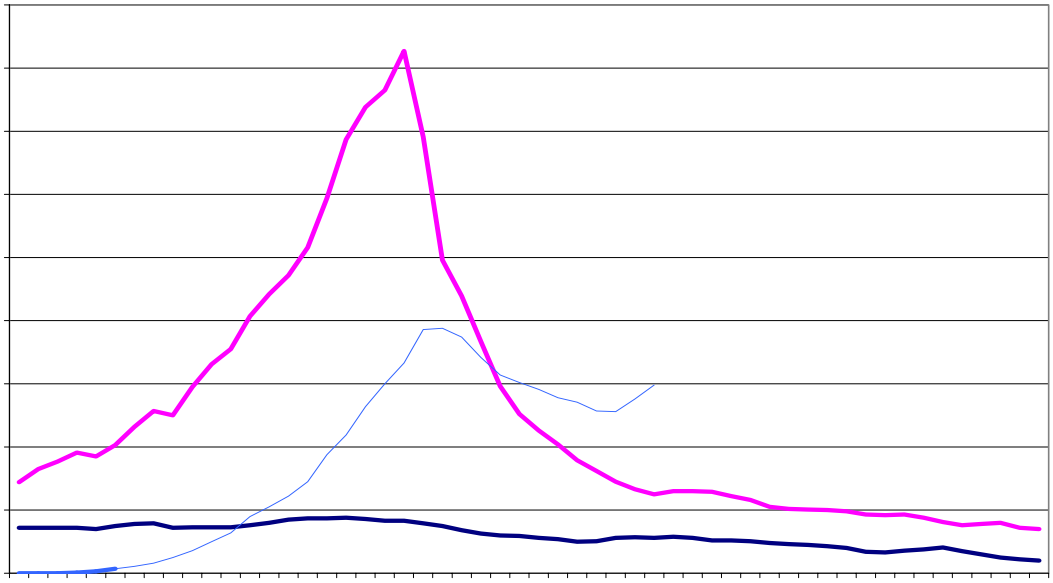




Despite their energy intensity, the economic effects of the development of oil and gas resources from the federal OCS on GOM states are difficult to isolate. First, as Figures 3a and 3b depict, the production of oil and gas from "on-shore" fields—including those located offshore but in the "state waters" that extend roughly three-miles out from Louisiana's eroding coast, peaked in 1970. The figures divide the state's on-shore production between 19 coastal parishes and 45 non-coastal parishes and then compare them to OCS production. Production of oil and gas in non-coastal parishes declined slowly but steadily throughout the 53-year period shown, while production from the coastal parishes rose rapidly from 1950 to 1970 and then declined even more rapidly. Figures 4a and 4b show the same data but on a disaggregated, rather than combined or "stacked" basis, a format that makes it easier to compare production from the three regions shown.

There is a common misperception that oil and gas production from the federal offshore and the state onshore jurisdiction boomed throughout the 1970s and early 1980s and then collapsed when the price of oil fell off its widely presumed path to $50 dollars a barrel in the mid-1980s.





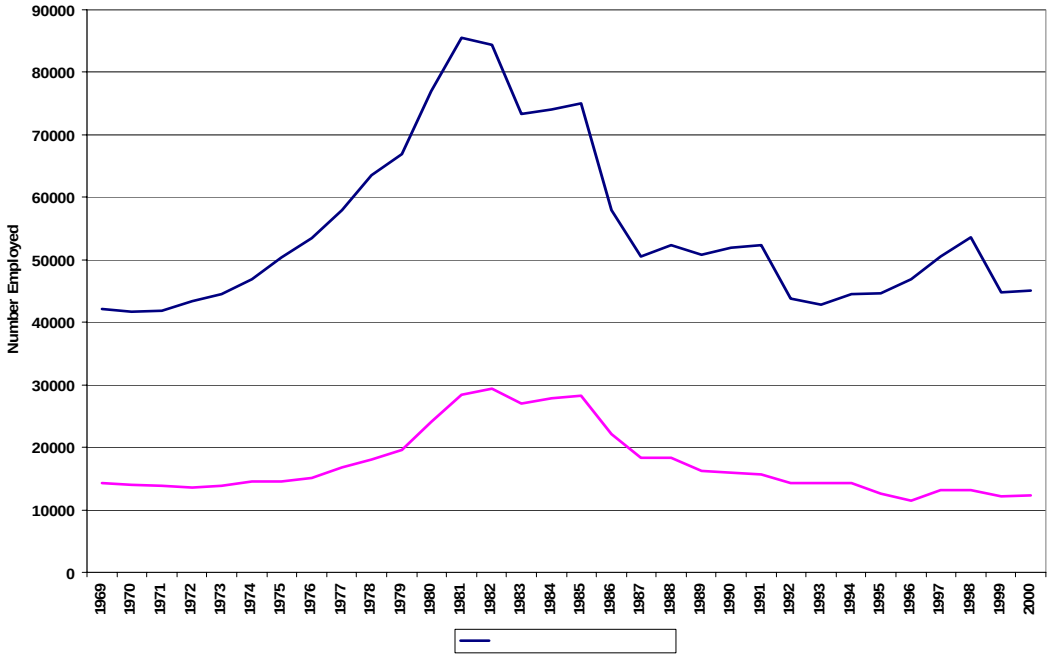
Oil and gas produced on the OCS each exceeded their corresponding coastal counterparts in 1976 and since then have accounted for a steadily increasing share. In 1997, oil produced on the OCS exceeded its previous 1970 peak and has continued to increase through 2003. This pattern of steady increase in production from the federal offshore since well before the drastic decline in world oil markets in 1985, in the case of gas, and a much less precipitous decline following the 1970 peak and then a subsequent renewal of growth in 1982, in the case of oil, suggests that economic activity attributable to development of the federal offshore has been a steady source of stability for the Gulf Coast economy for the past two decades.

The apparent disconnect between production, as shown in Figures 4a and 4b and measures of oil and gas activity, such as energy sector employment depicted in Figure 5 (and the rig count illustrated later in Figures 13a and 13b), underscores the importance of perceptions and expectations in explaining oil and gas activity on the Gulf Coast.

On-shore peak production occurred when oil was selling for a little more than $2 per barrel—as it had been doing for the preceding two decades, but as uncertainty spread and prices rose with the 1974 oil embargo, activity on the Gulf continued unabated in the face of a historically steep and sudden decline in production. This phenomenon is illustrated in Figure 5, showing employment in mining (which in Louisiana is almost exclusively to oil and gas exploration and production) in both coastal and non-coastal parishes over the 1969 to 2000 period. Employment peaked in 1980 and fell steeply in 1985--after marching through the 1970 peak in production and subsequent historically steep decline without even a discernable pause.

Similarly, Figure 6 shows net migration for Louisiana on an annual basis from 1969 to 2000. The state gained from migration from 1969 to 1983 with the exception of a small loss in 1973. Starting in 1983, however, migrants left the state at an increasing rate that exceeded 100,000 in 1987. The negative net migration diminished thereafter, nearly becoming positive in 1992, but since then remaining modestly but consistently negative.

A contributing factor that may be partly responsible for this misperception is the public awareness of the importance of oil and gas revenues, such as severance taxes and royalties, to the state's budget. In 1970, about 50 percent of Louisiana's undedicated state revenues came from special taxes levied on the petroleum industry (Richardson and Scott, 1988, page 128). Special taxes means paid only by them, i.e., it does not include general taxes like sales or corporate income taxes. The negative effects of the post 1970 production slide on public revenues were to some extent offset when prices began to rise in 1974. The effect was at first muted by the conglomeration of price regulations classifying oil as "old" or "new," but this effect weakened as the decade progressed.


Number Employed
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
1969
1970
1971
1972
1973
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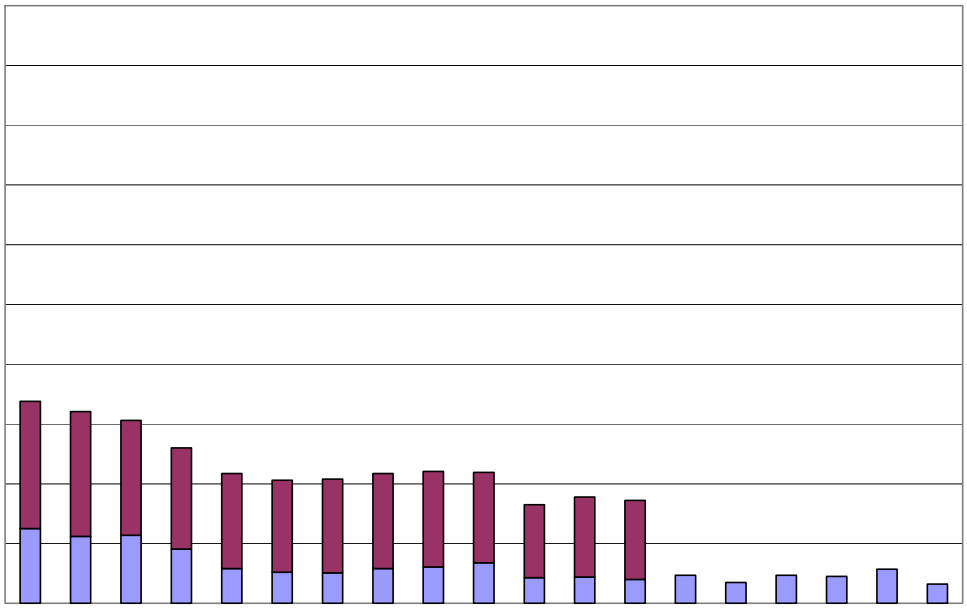
Another major shift that complicates the analysis is the greatly increased reliance on imported crude oil by Louisiana's refineries, as illustrated in Figure 7. Today only about 8 percent of the state's refinery input is produced within its own jurisdiction, with 17 percent coming from the federal offshore and 41 percent imported from other countries. Presumably, oil produced within its own jurisdiction or on the federal OCS could have been replaced by imported oil but at a somewhat higher cost. If imports were to have replaced OCS production, the consequence would have been many fewer jobs in petroleum exploration, production, and service sectors as well as in their support industries. Higher input and feedstock prices similarly would have resulted in fewer refineries and chemical plants. Estimating more precisely the impact of using imports rather than developing the OCS on coastal economies and communities, however, would be a substantial analytical undertaking.

Similar conceptual complications are created by structural shifts with the oil and gas industry such as increased centralization of technical, research, and managerial functions in Houston—with a shift of personnel from New Orleans and other locations along the coast; increased use of migratory contractors for construction, maintenance, and operation of offshore facilities—globally as well as in the GOM; and the ability to control many offshore operations and facilities by remote control and management.



Rather than try to disentangle 40 or 50 years of such trends, discontinuities and what-might-have-beens, the approach followed here is a simpler one of comparing economic activity in coastal areas associated, both historically and geographically, with the development of the federal offshore, with areas further removed and presumably less affected. By making these comparisons over an extended time period during which there were major perturbations within the oil and gas sector, the goal is to identify and understand how the response by the industry has affected coastal economies, whether any effects were cumulative or transitory, as well as how coastal economies were affected by changes in public policy and the larger economy.

4. THE STUDY AREA

Nineteen coastal parishes and 45 non-coastal parishes in Louisiana and the Metropolitan Statistical Areas they contain are the primary geographic units most closely studied and compared. The two groupings are shown in Figure 8 and production of oil and gas from them is shown in Figures 3a, 3b, 4a, and 4b previously discussed. Both include urban, suburban, and rural communities. The coastal parishes include the urban areas centered on New Orleans[2], Lafayette, and Lake Charles. The non-coastal parishes include urban areas centered on Alexandria, Baton Rouge, Monroe, and Shreveport.

Figure 8: Study Area - Coastal and Non-Coastal Parishes.

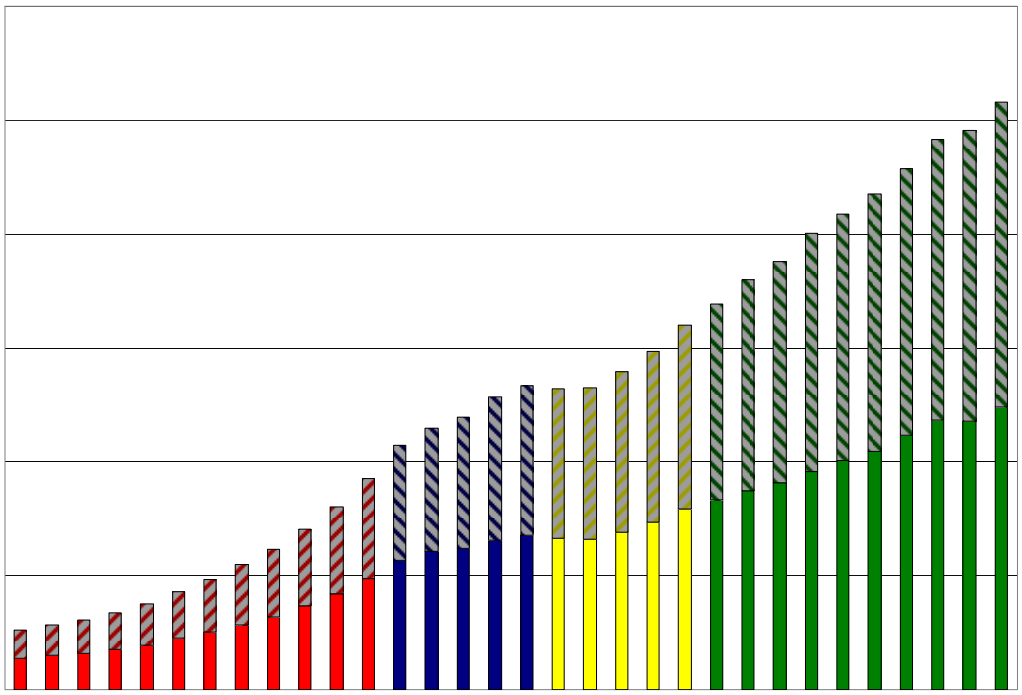
The 19 coastal parishes as defined here differ from the 19 Louisiana parishes designated as in the "coastal zone" for the purposes of coastal zone management (CZM). The CZM designation is based largely on geographic and ecological criteria unrelated to petroleum

[2]

reserves or activity. The classification we use is intended to reflect economic activity related to oil and gas development. The principal differences are that the CZM classification includes three parishes on the north shore of Lake Pontchartrain that are not included in our group of coastal parishes, and our group includes Jefferson Davis, Acadia, and Lafayette parishes.[3] Lafayette is a major regional management center for offshore oil, and in our view clearly should be included in the group hypothesized to be affected by offshore activity.

Figure 9 depicts total personal income for the coastal and non-coastal parishes over the study period. The land area and number of non-coastal parishes is considerably larger than the coastal parishes, but the proportion of total personal income received by Louisiana residents in the coastal and non-coastal parishes has been roughly equal over the study period, with a modest increase in the proportion received in non-coastal parishes over time. The share received by non-coastal parishes increased from 48 percent in 1969 to 52 percent in 2000, with the share of coastal parishes, of course, dropping from 52 percent to 48 percent over the same period. The trend was relatively steady with each group of parishes accounting for approximately 50 percent of the state's personal income in 1985.

[3] A pione over



5. CHANGES IN PER CAPITA PERSONAL INCOME

Income per person is a good measurement of an economy’s performance for regional analysis. Conceptually, it refl

Table 1

Average Annual Percentage Change in Per Capita Personal Income for GOM States, Louisiana Parishes and SMSAs, 1950 to 2000, for Selected Periods

Parish/ SMSA Parish	1959/ 1950[a]	1968/ 1959	1980/ 1969	1985/ 1981	1990/ 1986	2000/ 1991	2000/ 1969	2000/ 1950
U.S.[b]	3.8	4.7	8.1	5.3	4.8	4.0	6.4	5.8
Louisiana	4.1	4.9	9.3	3.8	4.7	3.7	6.5	5.9
Texas	3.6	4.7	9.0	4.6	4.1	4.6	6.7	5.9
Mississippi	4.8	5.7	9.0	4.6	5.0	4.3	6.8	6.5
Alabama	5.2	5.0	8.8	5.7	5.1	3.7	6.8	6.4
Florida	4.3	4.8	8.3	5.5	4.7	3.7	6.4	6.0
Coastal Par & SMSAs[c d]	4.7	5.1	10.0	2.4	4.6	3.6	6.5	6.2
Non-Coast Par & SMSAs	4.2	5.2	9.0	4.7	4.7	3.6	6.6	6.3
Coastal Parishes								
Acadia	3.4	5.2	9.9	4.0	4.2	4.1	6.7	6.2
Assumption	5.1	3.5	10.7	2.2	4.7	4.2	6.8	6.4
Cameron	6.7	6.7	10.1	3.2	5.0	3.0	6.1	6.1
Iberia	4.1	5.1	10.9	0.8	4.4	3.6	6.6	6.0
Jefferson Davis	3.3	5.4	9.6	4.1	4.4	3.2	6.2	5.4
LaFourche	6.1	3.1	10.5	1.2	4.3	5.0	6.7	6.5
St. Charles	5.0	6.2	10.4	0.9	5.5	2.9	6.5	6.1
St. James	5.8	6.8	10.2	4.4	6.0	2.3	6.3	6.4
St. John the Baptist	n.a	n.a	10.1	1.5	5.8	2.8	6.7	n.a
St. Martin	1.7	5.7	10.7	1.5	4.8	4.0	6.8	6.6
St. Mary	6.1	6.4	9.9	1.8	4.2	4.5	6.4	6.4
Terrebonne	6.2	5.3	10.8	0.9	4.2	4.0	6.5	6.4
Vermillion	6.1	3.9	10.1	3.1	4.4	4.0	6.6	6.3
Coastal SMSAs/Parish								
Lafayette	4.3	4.3						
Lafayette			11.6	2.3	4.1	4.4	7.1	
Lake Charles	3.9	4.6						
Calcasieu			9.6	1.7	5.6	3.3	6.3	
New Orleans	3.3	4.2						
Jefferson			8.7	4.1	3.8	4.0	6.3	
Orleans			8.5	4.5	5.1	3.3	6.3	
Plaquemines			10.2	2.7	4.3	2.5	6.2	
St. Bernard			8.5	2.9	3.2	3.8	5.9	
St. Tammany			9.3	4.0	5.0	4.3	6.9	

[a] Data for 1959/50 and 1968/59 are taken from (Scott et al., 1971, pages 98-164).
[b] Data for U.S and these states during the 1950-59 and 1959-68 are from (USDOC, BEA. 2006a).
[c] St. Tammany is a part of the New Orleans Standard Metropolitan Statistical Area (SMSA) but not considered a coastal parish in this report and not included in the coastal parish average.
[d] Averages for parish classifications are arithmetic means of each cell for which data is available.

Table 1 (continued)

Average Annual Percentage Change in Per Capita Personal Income for Louisiana Parishes, 1950 to 2000, for Selected Periods

Parish/ SMSA	1959/ 1950	1968/ 1959	1980/ 1969	1985/ 1981	1990/ 1986	2000/ 1991	2000/ 1969	2000/ 1950
Non-Coastal Parishes and SMSAs								
Allen	4.2	3.5	8.9	3.1	4.2	3.9	6.2	5.6
Ascension	5.0	10.5	9.8	3.3	6.2	4.0	6.8	7.1
								6.3
								6.0

Table 1 (continued)

Average Annual Percentage Change in Per Capita Personal Income for Louisiana Parishes, 1950 to 2000, for Selected Periods

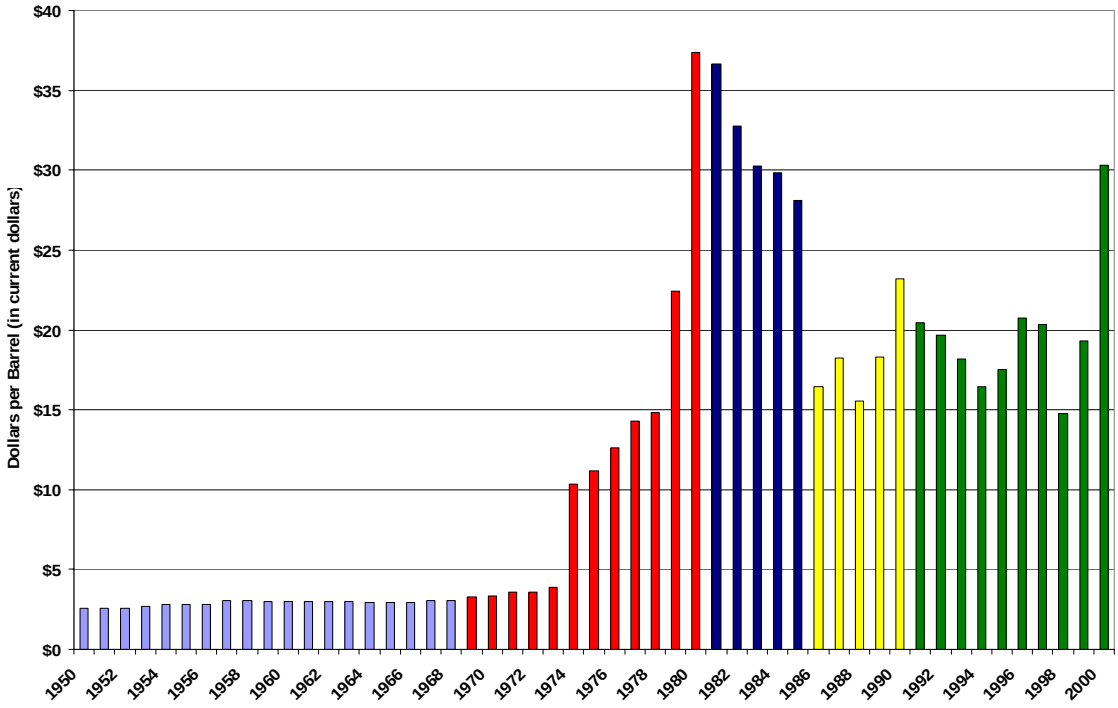
Parish/ SMSA	1959/ 1950	1968/ 1959	1980/ 1969	1985/ 1981	1990/ 1986	2000/ 1991	2000/ 1969	2000/ 1950
Webster	3.7	7.6	8.2	5.2	3.2	3.6	6.0	5.6
West Baton Rouge	4.6	5.2	10.4	4.6	5.4	4.1	7.1	6.9
West Carroll	5.1	4.7	9.0	5.1	4.4	3.8	6.8	6.5
West Feliciana	1.6	11.3	10.9	7.0	1.9	5.4	7.2	6.4
Winn	4.2	5.6	8.8	5.6	4.8	2.8	6.3	5.9
Non-Coastal	3.0	4.3	9.1	4.7	4.7	3.6	6.5	
SMSA Parish								

exemplified by terms like “Sun Belt” and “Rust Belt.” Economic theory would suggest that economic activity would migrate from higher cost regions to lower cost regions. Whether reality in fact followed this suggestion also has motivated a number of economic studies (Baro and Sala-I-Martin, 1991; Blan

6. THE EVOLUTION AND PERTURBATION OF OIL AND GAS MARKETS

Prior to the embargo declared by the Organization of Arab Petroleum Exporting Countries (OAPEC) in the fall of 1973, prices in U.S. oil and gas markets were extensively "administered" or regulated by governmental agencies or industry organizations. The annual variation in nominal oil prices was recorded in pennies not dollars. Regulations evolved at the state and national level to guard against prices falling because of excess domestic capacity and the availability of cheaper imports.

The Federal Power Commission regulated the price of natural gas moving between the states. Thus factors changing the demand or supply of either product were not automatically, nor necessarily, reflected in the prices paid for the commodity. Complicating the picture were import controls and the prorationing system that was in effect in the 1960s, the wage and price controls set up in 1972 by the Nixon Administration and excess profit taxes levied to prevent energy producers from reaping windfall profits from the escalation of prices internationally that



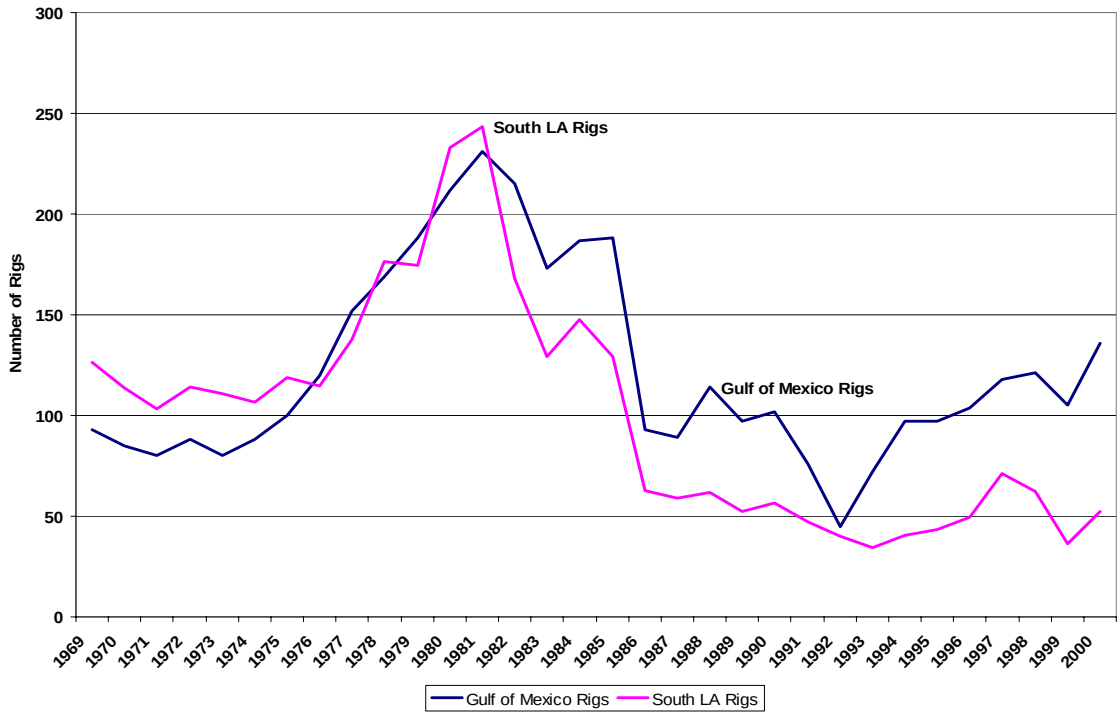
Source: Energy Statistics Sourcebook & USDOL, BLS. 2006.

Figure 12: Posted Price for West Texas Intermediate Beginning of the Month (in current dollars).

Unrealistic expectations engendered by these events on the part of energy producers and consumers (and analysts), however, was probably the more consequential result: namely, the widespread assumption during the 1974 to 1980 run-up that price increases and shortages would continue unabated into the future. Fifty-dollar-a-barrel crude oil and two-dollar-a-gallon gasoline were the conventional expectations.

The effects on the oil and gas industries

The modest increase in offshore activity reflected in the figure does not, however, reflect an important change in the offshore industry—the movement to the "deep gulf." Drilling in very deep waters without fixed platforms means that the size of drilling and development projects, and their associated budgets, has increased very significantly. Much larger platforms are involved in the deep gulf and many more wells are drilled from each platform. This development, however, did not start until the mid-1990s, thus although a simple "rig count" may tend to underestimate the recovery, the effect is probably limited to the last few years of the study period.



Source: Louisiana Energy Indicators & Baker Hughes.

Figure 13b: Rig Count - Gulf of Mexico

7. COMPONENTS OF CHANGE IN PER CAPITA PERSONAL INCOME

Edward Dennison and others developed "growth accounting" in the Bureau of Economic Analysis of the U.S. Department of Commerce in the 1970s to better understand the slowing of the rapid economic growth experienced during the 1950s and 1960s. The technique is based on the following identity summarized mathematically as:

$$\textbf{(1)}\ \frac{TPI}{N} = \frac{H}{J} \times \frac{E}{H} \times \frac{J}{N} \times \frac{FI}{E} \times \frac{TPI}{FI},$$

Where TPI is total personal income, N is total population, H is hypothetical earnings—essentially what earnings in the parish or metropolitan area would be if those employed in the sectors or industries in the region were to be paid the national average wage of that industry or sector, J is the number of jobs, E is earnings actually paid in the region, and FI is factor income (property income plus earnings). The comparisons used here are the percent change in these components which sum to the overall growth rate. These components are called:

- The industry-mix (H/J) component measures the contribution to growth in per capita personal income attributable to industries paying higher wages growing faster relative to industries paying lower wages in the jurisdiction.[5]
- The relative wage component (E/H) measures the extent to which wages in the parish increased or decreased relative to the average wage paid nationwide, with the mix of industries kept constant.
- Labor force participation (J/N) refers to changes in personal income attributable to changes in the proportion of the population that participates in the paid labor force.
- Transfer payments (TPI/FI) include social insurance, public assistance, and other

- The five Gulf Coast States of Alabama, Florida, Louisiana, Mississippi, and Texas.
- The metropolitan statistical areas (MSAs) in Louisiana, four in the coastal parishes and four in the non-coastal parishes.
- Louisiana's 19 coastal parishes and the 45 non-coastal parishes.

8. COMPONENTS OF PER CAPITA PERSONAL INCOME GROWTH IN THE GULF COAST STATES

The five Gulf Coast states include about 13 percent of the nation's land area and 17 percent of the nation's population. The composition of their economies differs significantly. Florida's population has been growing rapidly with tourism, retirement, and services providing much of the impetus. The state's population grew more than four times faster than Alabama, Mississippi, and Louisiana and almost twice as fast as Texas. Personal Income in the aggregate also grew at a faster rate in Florida, although the difference was not nearly as great—about twice as fast as Alabama and Mississippi, two and a half times as fast as Louisiana and about 40 percent faster than Texas.

The relationship of growth in per capita personal income among the states, however, is reversed. Over the 1969-to-2000 time period per capita personal income in Florida grew

Table 4

Growth Rates of Personal Income and Its Components for Gulf Coast States, 1969-2000

Period: 1969-2000 **STATE**	**ΔPersonal Income/Person**	**Industry mix**	**Relative wage effect**	**Labor Force Participation**	**Property Income Ratio**	**Transfer Payment Ratio**
1969-1980						

8.1. Embargo, War and Rising Energy Prices: 1969-1980

During the initial period of the embargo, the Iran/Iraq war, and the end of administered and controlled energy prices, the two principal energy producing states, Louisiana and Texas, were among the states with the fastest rates of growth in per capita personal income, as was Mississippi with a much smaller energy sector—only eight percent of gross state product compared to 38 and 21 percent in Louisiana and Texas respectively in 1980. During this period only Wyoming and Alaska grew faster than Louisiana, and the growth rates in Louisiana, Texas and Mississippi all were more than one standard deviation above the mean for all states. Only Wyoming and West Virginia gained more from improvements in industry mix than did Louisiana. Mississippi had the next largest improvement. Texas, however, had a more modest gain.

Although an improving industry mix is by far the largest contributor in all of the Gulf Coast States, the contributions from other factors reveal significant differences among the roots of the growth. In Louisiana and Texas, increases in wages relative to the rest of the nation, and labor force participation were major factors. But in Mississippi and in Florida, after improvements in industry mix, the next largest contributor to growth was an increase in transfer payments. Although the increases in labor fo

states and the other Gulf Coast states or be

personal income in Louisiana grew at 3.73 percent per year, only about 80 percent as fast as Texas.

Relative wages in Louisiana made a negative contribution to growth and were more than one standard deviation below the national mean.

The only other components that fell beyond plus or minus one standard deviation from the national mean for the period were: (1) transfer payments, where negative contributions in Florida and Texas and a positive contribution in Alabama were outside that range; and (2) property income, where the positive contribution in Texas led the nation.

8.5. The Long-Term View

Looking at the change in per capita personal income over the entire 1969 to 2000 study period for the five Gulf Coast states suggests that the effects of oil and gas development were largely limited to the early embargo/war/deregulation cycle. During that period the two most energy intensive states, Louisiana and Texas, grew at faster rates than the rest of the nation and their

9. COMPONENTS OF PER CAPITA PERSONAL INCOME GROWTH IN LOUISIANA'S PARISHES

Table 5 summarizes the growth rates for the 19 coastal parishes and 45 non-coastal parishes shown in Figure 8. The overall growth rate was allocated among its five components for each parish. A normalized standard deviation, or "Z score," was calculated for each contributor in each parish based on the distribution of the value among all the parishes in the state. The means for the overall growth rate and for each of the five contributors were computed, and means for the group of 19 coastal parishes were compared to the corresponding means of the 45 non-coastal parishes for each of the four time periods. The results are summarized in the following table.

Table 5

Changes in Per Capita Personal Income and Its Components, 1969-2000

Period Group	Δ Personal Income/ Person	Improved Industry Mix	Relative Wage Effect	Labor Force Participation	Transfer

9.1. 1969 to 1980: Embargo, War, Rising Energy Prices and Expectations

9.1.1. Period Summary: This period was one of exceptional improvement in both coastal and non-coastal parishes, but despite the similarity of their overall growth rates, the components of the growth were discernibly different in the two groups of parishes.

About three-fourths of the growth was attributable to an improvement in industry mix, i.e., higher wage industries or sectors grew faster relative to lower wage sectors, using average national wage levels to define high- and low-wage sectors of the economy. This was true for both groups of parishes.

The contribution of the other major factors differed significantly between the two groups:

- Keeping the mix of industries constant, wages increased relative to the national average in both coastal and non-coastal parishes, but they increased in coastal parishes about 25 percent more rapidly than in the non-coastal parishes.
- The regional wage effect was small relative to industry mix improvements, however, contributing about six percent of the total in coastal parishes and about five percent of the total in non-coastal parishes.
- Change in the extent to which the population participated in the labor force contributed 2.4 percentage points to the growth rate of

development, were the growth leaders, while Orleans, St. Bernard, and Jefferson (all in the New Orleans metropolitan area) grew more slowly than the average of the non-coastal parishes. Only three non-coastal parishes grew at a rate greater than one standard deviation greater than the state average, and major construction projects are the most likely explanation in each instance.

9.1.3. Industry Mix: The contribution of changes in the industry mix in the parish to the change in per capita personal income in the parish was about the same in the coastal and non-coastal parishes. The average contribution was about 7.5 percentage points in absolute terms or three-fourths of the total change in relative terms in coastal parishes compared to 6.9 percentage points, also about three-fourths in relative terms, in the non-coastal parishes. The contribution was at least one standard deviation greater than the mean in 59 percent[6] of the coastal parishes compared to none of the non-coastal parishes. In 23 percent of the non-coastal parishes the contribution was at least one standard deviation below the mean.

9.1.4. Relative Wage Effects:

In some non-coastal parishes, transfer payments accounted for more than half of the change in per capita personal income—54 percent in Franklin, 71 percent in Tensas, and 60 percent in Webster. In six of the coastal parishes the contribution of transfer payments was at least one standard deviation below the average for all parishes in the state.

9.1.7. Property Income: Income from property was a small net negative change in both groups of parishes.

year and 17 (38 percent) grew at 5 percent or faster. The growth rate in 10 of the 19 coastal parishes (53 percent) was at least one standard deviation below the state mean and the growth rate in none of the coastal parishes was one standard deviation faster than the mean. None of the non-coastal parishes grew one standard deviation slower than the mean, and 18 percent of the parishes grew at least one standard deviation faster than the mean.

9.2.3. Industry Mix: The contribution of higher paying industries to per capita income growth declined from the previous period, but not as much as the overall rate. The contribution to the growth rate declined by about 55 percent, from 7.5 to 3.5 in the coastal parishes, and by about 35 percent, from 6.9 percent to 4.46 percent in the non-coastal parishes. The contribution of industry mix was below that of the state mean in all of the 17 coastal parishes for which it can be calculated, and for ten of the 17, the difference exceeded one negative standard deviation.

In the non-coastal parishes the contribution exceeded one standard deviation in 11 parishes, Avoyelles, Concordia, East and West Carroll, East Feliciana, Madison, Red River, Richland, St. Helena, and Tensas. Several of these parishes are among the poorest in the state, and the apparent positive performance may reflect an initial low base.

9.2.4. Relative Wage Effects: The contribution of changes in regional wages relative to the average wage paid in the same industry in the rest of the nation was negative for both groups of parishes. But the negative effect was about 30 percent larger in the coastal, −1.31 in the coastal parishes, and −1.04 in the non-coastal parishes. In those parishes for which data is available to make the calculation, wages declined relative to the nation in every coastal parish except Orleans, and in 30 of the 38 non-coastal parishes.

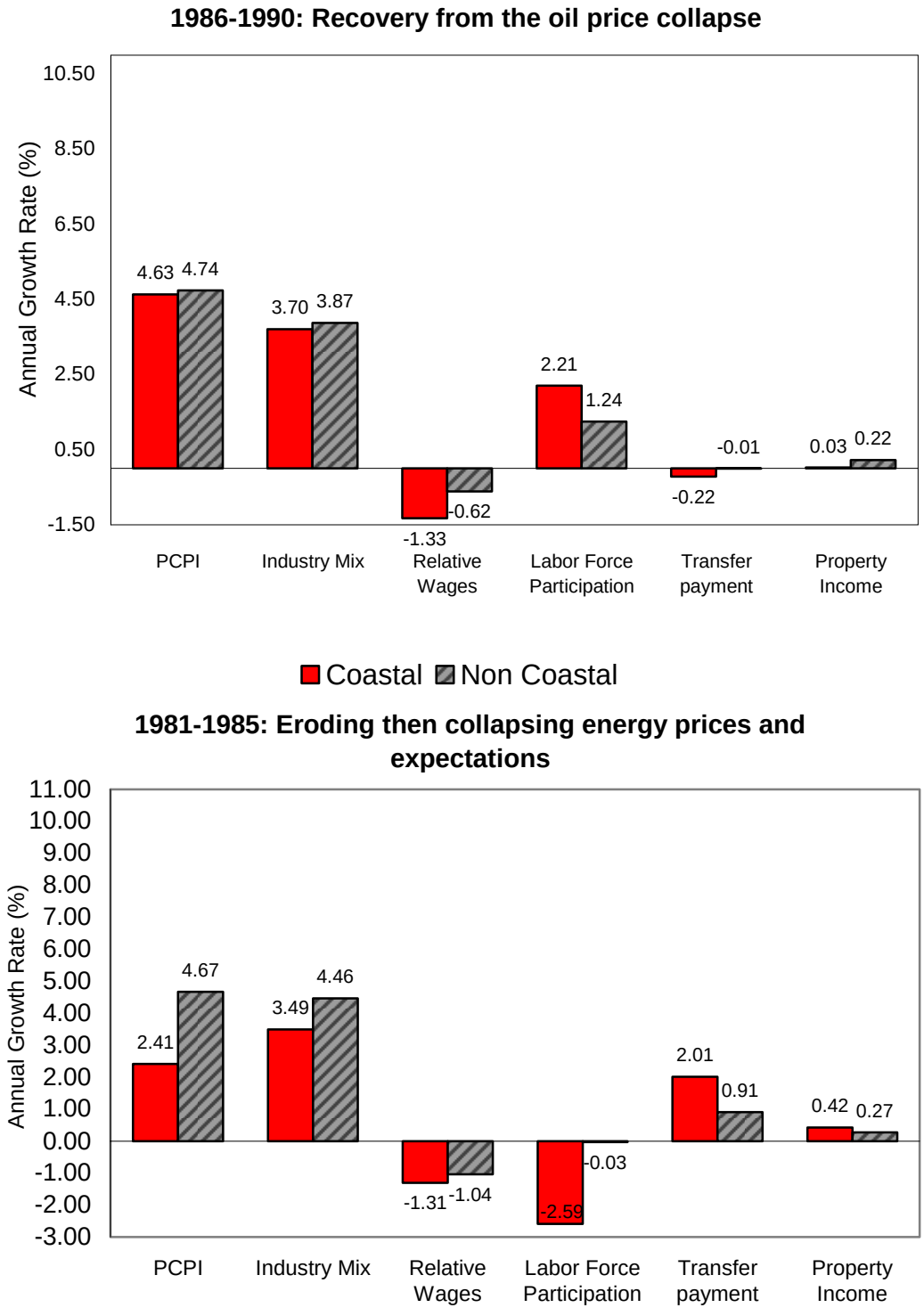
9.2.5. Labor Force Participation: Changes in the extent of the participation of the population in the labor force was a significant negative contributor in the coastal parishes, on average subtracting about 2.6 points from the over-all growth rate. The contribution was negative in all coastal parishes except Jefferson and more than one standard deviation below the state average for 47 percent of the coastal parishes and greater than one standard deviation in only Jefferson.

In non-coastal parishes it was not a major contributor to change, subtracting only 0.03 points from the total growth rate. In about 20 percent of the non-coastal parishes, the contribution of increased labor force participation was more than one standard deviation above the state average.

9.2.6. Transfer Payments: In the previous 1969-1980 period, transfer payments made a negligible contribution to the growth of per capita personal income in coastal parishes, 0.04 points of a 10.04 total growth rate, but a significant contribution, 1.75 points of a 9.14 rate, in the non-coastal parishes. The relationship was reversed in the 1981-1985 time period with increases in transfer payments adding 2.01 points to an overall rate of 2.41—a much larger contribution in relation to the total—while adding 0.91 points to a overall rate of 4.67 in the non-coastal parishes. In nine of the 19 coastal parishes

(Assumption, Calcasieu, Cameron, Iberia, Plaquemines, St. Bernard, St. Charles, St. Mary, and Terrebonne) without the contribution of transfer payments the rate of growth of per capital personal income would have been negative as opposed to modestly positive. Among the 45 non-coastal parishes without transfer payments the overall growth rate would have been negative in only Catahoula and De Soto parishes.

9.2.7. Property Income: Changes in income from property made a small positive contribution, as opposed to a small negative contribution in the previous period, for both groups of parishes.



Source: USDOC, BEA. 2006b.

Figure 15: Change in PCPI - 1981-1985 Compared with 1986-1990.

9.3. 1986-1990: Recovery from the Oil Price Collapse

9.3.1. Period Summary:

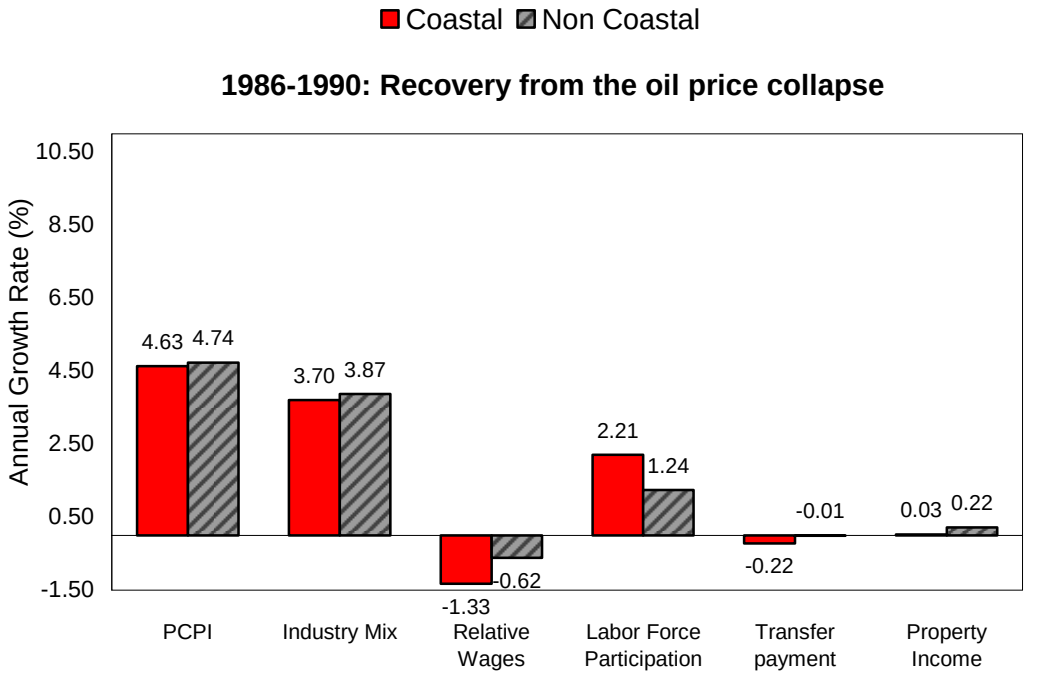
The distribution was also relatively compact among non-coastal parishes, with 5 parishes exceeding the state average by one standard deviation and 7 falling below the one standard deviation mark.

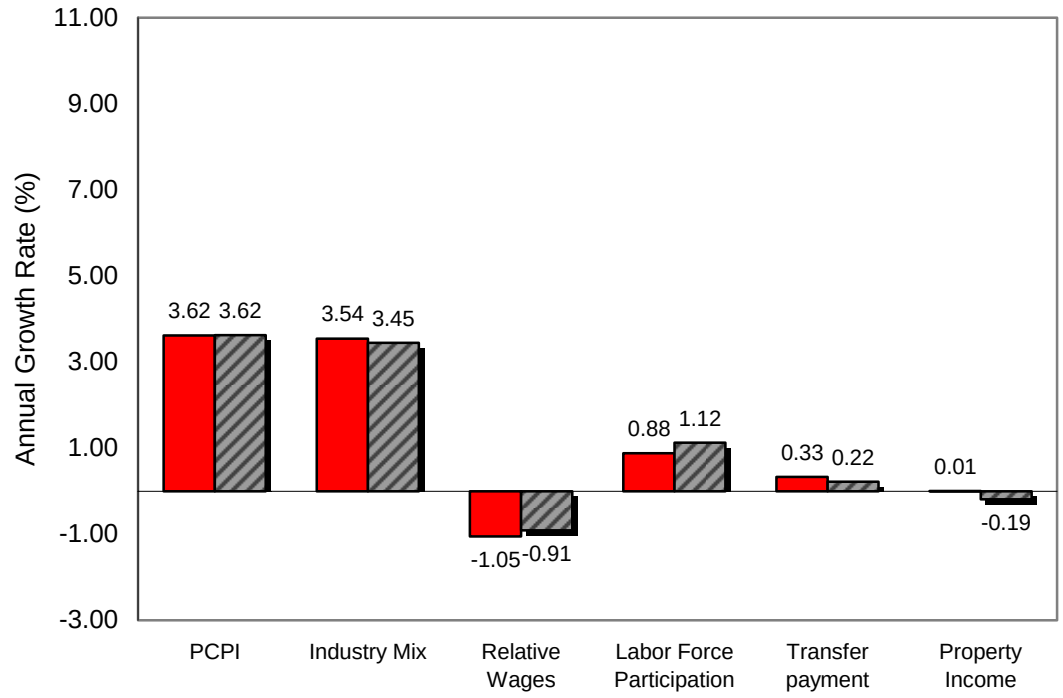
9.3.5. Labor Force Participation: The primary locus of the recovery is the 2.2 percent increase in labor force participation in the coastal parishes. However, in only seven of the coastal parishes was the positive contribution during the recovery larger than the decline experienced during the preceding "bust." The contribution was greater than 4 percentage points in the contiguous parishes of St. Charles and St. John the Baptist, and above 5 percentage points in St. Martin parish. Among non-coastal parishes the contribution was also positive but smaller in magnitude, averaging 1.2 percent for the group.

9.3.6. Transfer Payments: With recovery the effects of transfer payments were diminished in both groups of parishes. The average contribution was −0.22 in coastal parishes and −0.01 in non-coastal parishes. In two of the coastal parishes, St. James and St. Martin, the contribution fell by more than two percentage points—both of which also had significant increases in labor force participation. In only one coastal parish, St. Bernard, did transfer payments add at least one percentage point to the overall growth rate. Among the non-coastal parishes, transfer payments continued to be a significant source of growth for several of the poorer parishes, contributing more than one percent in 11 of the 45 parishes.

9.3.7. Property Income: As in the previous periods, property income was a minor contributor in both coastal and non-coastal parishes.

Thus the recovery from the oil price collapse was moderate at best. Few divergences from the pattern evident during the collapse are evident for the non-coastal parishes, with the sizable increase in labor force participation being the principal avenue of improvement in per capita personal income for the coastal parishes.





Source: USDOC, BEA. 2006b.

Figure 16: Change in PCPI - 1986-1990 Compared with 1991-2000.

9.4. Change in PCPI 1991-2000: The Energy Lull, Sustained But Slower Growth

9.4.1. Period Summary: During the decade-long energy lull of the 1990s there are almost no analytically or statistically significant differences apparent between the two groups of parishes in terms of either the total growth rates or the components of the growth. The decline in the rates of growth observed in the previous two periods continued in the period.

9.4.2. PCPI: The growth rates of PCPI in the coastal and non-coastal parishes were equal to the second decimal place during the decade of the 1990s.

For both groups of parishes, the growth rate was more than a full percentage point slower, or 25 percent, than the rate of the previous period.

9.4.3. Industry Mix: The industry mix components were also nearly identical, and their contributions accounted for more than 95 percent of the oval growth rate for both groups.

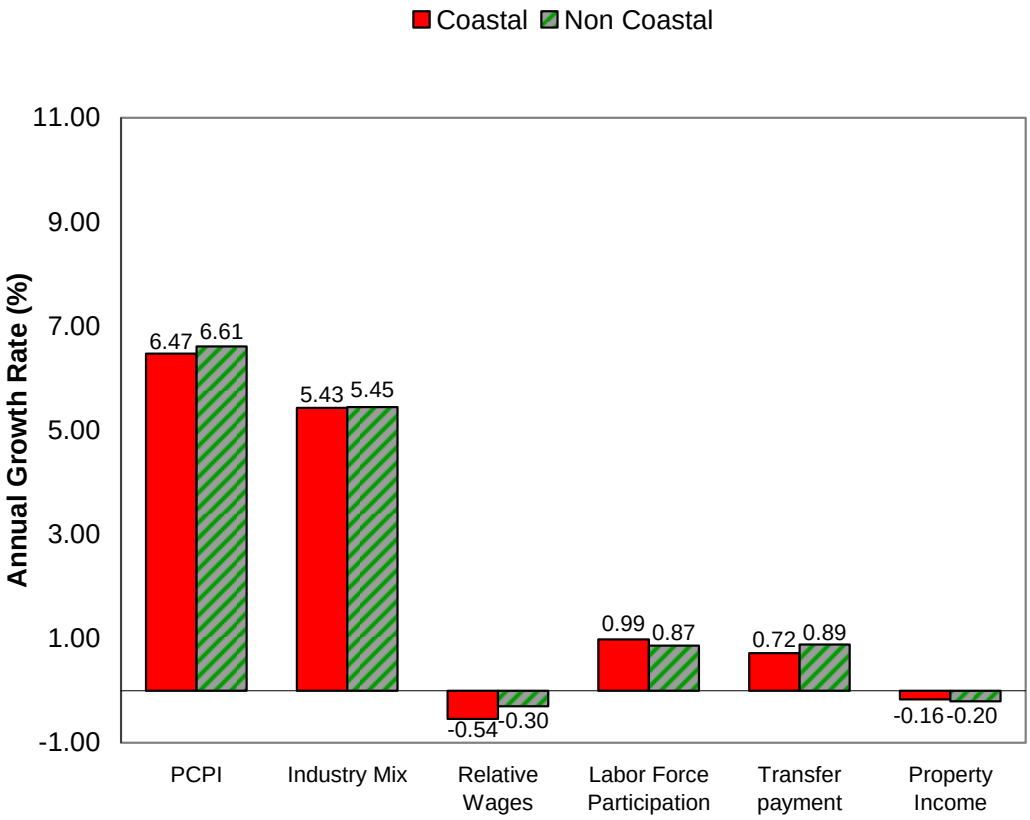
In absolute terms, the contribution of an improved industry mix was slightly less than the previous period.

9.4.4. Relative Wage Effects: In both groups of parishes, wages relative to the nation declined and made a negative contribution to the overall growth rate of about one percentage point.

In relative terms, the negative contribution of relative wages was a little less than a third for the coastal parishes and about a quarter for the non-coastal parishes.

9.4.5. Labor Force Participation: Increased participation in the labor force added a little more than one percentage point to the growth of per capita personal income in the non-coastal parishes (1.12) and a little less (0.88) in the coastal parishes.

In coastal parishes the contribution was less than half that made in the previous period, in non-coastal parishes the contribution was e i0fT93nal 59olates the cntage point to the p53uTc0.01g1



Source: USDOC, BEA. 2006b.

Figure 17: Annual Growth Rate of Per Capita Personal Income and Components for Coastal and Non-Coastal Parishes, 1969-2000.

10. COMPONENTS OF PER CAPITA PERSONAL INCOME GROWTH IN COASTAL LOUISIANA'S METROPOLITAN STATISTICAL AREAS (MSA)

Data on per capita personal income growth and the components of that growth are available for the eight Louisiana MSAs during the 1969-2000 period. MSAs are defined by the federal Office of Management and Budget (OMB) and used to allocate some types of federal grants and other expenditures. Compared to both states and parishes, MSAs have the analytical advantage of being defined by making use of economic relationships and criteria such as commuting patterns, rather than being purely historical, political, or administrative units defined for other purposes.

Another analytical difference is, by definition, the MSA data is not as affected by rural parishes as are the coastal and non-coastal parish comparisons. Similarly, averages for each MSA reflect the relative distribution of population among the parishes of which they are composed. Thus, MSA comparisons provide a rough check on generalizations based on the arithmetic averages of parish-level data.

Unlike parishes or states, however, the composition of an MSA can change over time. In Louisiana's case, during the 1969 to 2000 study period, new MSAs were created, and the composition of others has changed. We were able to put together a consistent data set for the coastal MSAs by using parish-level historical data for the recently created Houma-Thibodaux MSA. Baton Rouge is the only MSA for which we have not been able to construct a data set for all components for all periods. PCPE, transfer payments and property income are available but data required to calculate industry mix, relative wage, and labor force participation contributions are not available in the latter two periods. The following table summarizes the MSA data.

The pattern of the MSA comparisons is consistent with the previous parish- and state-level analysis. Over the entire 1969 to 2000 study period the MSA with the fastest PCPI growth was a coastal MSA, Lafayette (7.12 percent), but so was the slowest growing MSA, Lake Charles (6.31 percent). The average PCPI growth rate for the coastal MSAs (6.59 percent) was not significantly different than the average for the non-coastal MSAs (6.62 percent).

During the 1969 to 1980 boom, both Lafayette and Houma/Thibodaux grew at double-digit rates and the coastal MSAs as a group grew about a percentage point faster than the non-coastal MSAs. The major difference between the two groups was a considerably larger contribution from increased participation in the labor force in the coastal MSAs, as was the case in the parish-level comparisons. Unlike the parish-level comparisons, however, the contribution to PCPI from transfer payments in non-coastal MSAs was considerably more modest, accounting for only about 6.4 percent of the growth rate as opposed to nearly 20 percent in the parishes.

Table 6

Change in Per Capita Personal Income and Its Components for Louisiana MSAs, 1969-2000

Period: 1969-2000 MSA	ΔPersonal Income/ Person	Industry Mix	Relative Wage Effect	Labor Force Participation	Property Income Ratio	Transfer Payment Ratio
1969-2000						
Coastal MSAs						
Houma/Thib.	6.58	5.43	-0.52	1.21	-0.19	0.65
Lafayette	7.12	5.54	-0.25	1.73	-0.16	0.25
Lake Charles	6.31	5.25	-0.50	1.21	-0.11	0.46
New Orleans	6.34	5.24	-0.21	0.84	0.14	0.33
Non-Coastal						
Alexandria[7]	6.80	5.33	-0.06	0.84	-0.06	0.74

Non-C--n

Table 6 (continued)

Change in Per Capita Personal Income and Its Components for Louisiana MSAs, 1969-2000

Period 1969-2000: MSA	ΔPersonal Income/ Person	Industry Mix	Relative Wage Effect	Labor Force Participation	Property Income Ratio	Transfer Payment Ratio
1986-1990						
Coastal MSAs						
Houma/Thib.	4.23	3.42	-1.02	1.56	-0.13	0.40
Lafayette	4.22	3.90	-1.68	2.19	0.08	-0.27
Lake Charles	5.60	3.56	-1.08	3.24	-0.09	-0.03
New Orleans	4.53	3.54	-0.93	1.57	0.33	0.01
Non-Coastal						
Alexandria	5.22	3.57	0.32	1.33	0.32	-0.31
Baton Rouge	5.25	n.a.	n.a.	n.a.	0.70	-0.32
Monroe	4.63	3.68	-0.34	1.37	0.31	-0.38
Shrevprt/Boss	4.33	3.57	-0.54	0.52	0.33	0.46
Coastal Ave	4.65	3.61	-1.18	2.14	0.05	0.028
Non-Coast Ave	4.86	3.61	-0.19	1.07	0.42	-0.14
1991-2000						
Coastal MSAs						
Houma/Thib.	4.50	3.94	-1.08	2.12	-0.13	-0.34
Lafayette	4.38	3.90	-0.75	1.11	0.28	-0.16
Lake Charles	3.24	3.36	-1.35	1.20	-0.09	0.13
New Orleans	3.70	3.48	-0.84	0.85	0.21	-0.01
Non-Coastal						
Alexandria	4.19	3.31	-1.24	1.62	0.20	0.70
Baton Rouge	3.58	n.a.	n.a.	n.a.	-0.12	0.15
Monroe	4.08	3.57	-1.23	1.78	-0.06	0.02
Shrvert/Boss	3.63	3.47	-0.72	1.19	0.09	-0.40
Coastal Ave	3.96	3.67	-1.01	1.32	0.07	-0.10
Non-Coast Ave	3.87	3.45	-1.06	1.53	0.03	0.12

growth in PCPI. However, Houma/Thibodaux and Lafayette were the slowest growing MSAs at 4.23 and 4.22 percent respectively, largely as a consequence of falling relative wages.

Houma/Thibodaux and Lafayette were the fastest and second fastest growing MSAs during the "energy lull" of 1991 to 2000, but Lake Charles fell from the fastest to the slowest growing MSA. These two MSAs also experienced significantly better-than-average improvements in industry mix and healthy, but only about average, increases in labor force participation. This combination of contributors suggests stimulus from the steadily increasing activity on the federal offshore—more specifically the development of the "deep gulf" resources—may have been impacting these two MSAs disproportionately. Petroleum exploration and development and its associated managerial and service industries, including shipbuilding, are prominent in their economies. Lake Charles and Baton Rouge, where petroleum refining and petrochemical manufacturing are more important, on the other hand, were the two slowest growing MSAs. This probably is a reflection of higher natural gas prices and competition for commodity chemicals in export markets. The overall effects, however, were relatively modest. The coastal MSAs did grow faster than the non-coastal MSAs, but by less that one-tenth of a percentage point.

11. PER CAPITA PERSONAL INCOME AND CHANGES IN POPULATION

In the newspaper and at meetings of rotary clubs and chambers of commerce, economic growth is usually closely, if implicitly, associated with a growing population. Economists have argued among themselves about the direction of causation, but they also often assume a direct and positive link between the two phenomena. Economic development practitioners, and the regional business and civic leaders that support them, usually justify public policies to encourage economic activity in a state or locality as necessary to provide jobs for a growing population who other wise would migrate out of the region. The benefits from more jobs will be evidenced as increases in retail sales of goods and services, as well as state and local taxes, which will benefit the existing population as well.

The following section of this essay explores the relationship between population and per capita personal income in Louisiana's coastal and non-coastal parishes using the same time periods used in the previous discussion of the components of change in per capita personal income. First, population changes and net migration into and out of Louisiana's coastal and non-coastal parishes is described. Then a more detailed descriptive framework developed by Paul Gottlieb (2002) to characterize some implications of the relationship between growth rates in per capita personal income and population growth is applied to coastal and non-coastal parishes.

11.1. Population Change in Coastal and Non-Coastal Parishes

Population growth in coastal and non-coastal parishes is consistent with the pattern of the growth of per capita personal income when measured over the time periods used in the previous analysis. Table 7 shows the change in population in coastal and non-coastal parishes during the four periods of the energy boom of 1970 to 1980, the collapse of 1980 to 1985, the recovery from 1986 to 1990 and the energy lull of 1991 to 2000.

Over the entire 1970 to 2000 period non-coastal parishes gained 556,485 people, an increase of 29 percent over 1970 levels, while coastal parishes added 293,731 an increase of 15 percent. The comparison is distorted, however, by the fact that Orleans Parish, the state's largest, tends not only to dominate the total for coastal parishes but also exhibits a different pattern of growth, or more accurately, a pattern of decline. Over the period Orleans parish lost 116,999 individuals, a decline of 18 percent. If coastal parishes were considered without Orleans parish, their gain would be 410,730; an increase of 32 percent.

Table 7

Nominal Population Change for Coastal and Non-Coastal Louisiana Parishes, 1970-2000

	1970-1980	1981-1985	1986-1990	1991-2000	1970-2000

11.2. Net Migration in Coastal and Non-Coastal Louisiana Parishes

Since the change in the population of a parish comes about through the natural increase caused by births and deaths and migration into or out of the parish jurisdiction, a somewhat more precise indicator of differential economic effects on population might be to concentrate only on migration into or out of the parish. Subtracting the natural increase from the change in population yields net migration—the change in population accounted for by persons entering or leaving the parish by means other than the biological routes of birth or death. Regional differences in birth rates, death rates, and the age structure of the parish population can be substantial, and using net migration rather than the nominal change in population can remove such differences from the comparisons.

Table 8 records net migration for Louisiana's coastal and non-coastal parishes for the 1970 to 2000 time period divided into the same intervals used in the previous analysis. Over the entire period, net migration for the state was a loss of 370,998 persons.

Table 8

Net Migration Among Coastal and Non-Coastal Louisiana Parishes, 1970-2000

	1970-1980	1981-1985	1986-1990	1991-2000	1970-2000

Vegas, Nevada, were removed from the sample it would disappear. To a statistician, this is little better than having no relationship at all, since the relationship that exists depends on only two cases" (Gottlieb, 2002, page 3).

Moreover, for the existing resident, population

Table 9

Type and Index of Economic Change by Business Cycles for LA Parishes, 1969-2000

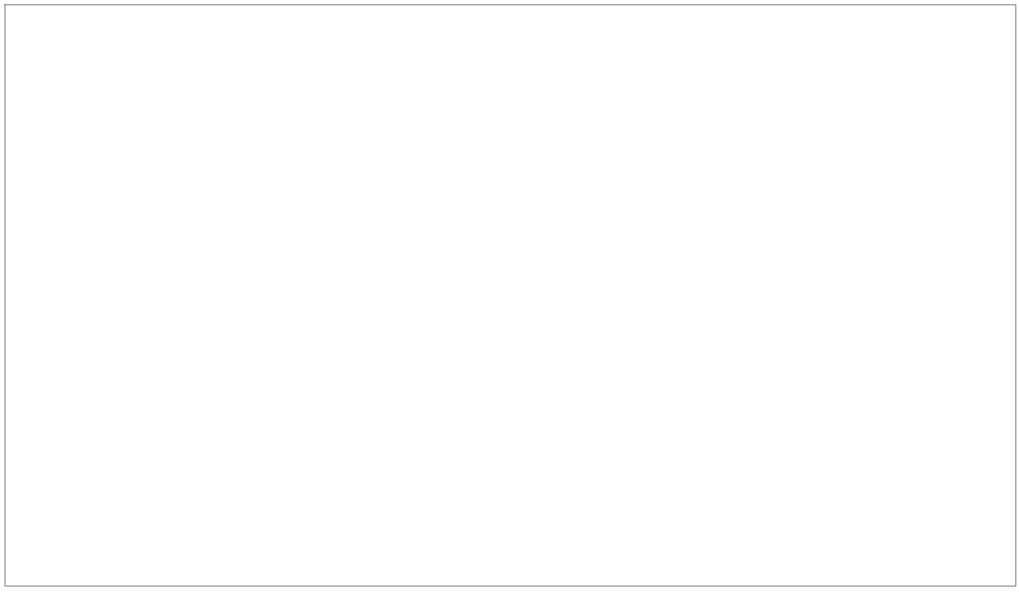
Coastal Parishes	1969-1980	Index	1981-1985	Index	1986-1990	Index	1991-2000	Index	1969-2000	Index
Acadia	WB	9.17	PM	3.40	LGT	5.40	WB	3.63	HGT	6.34
Assumption	HGT	9.60	PM	1.48	PM	5.43	WB	3.90	HGT	6.26
Calcasieu	HGT	8.29	LGT	1.42	HGT	5.99	PM	2.49	PM	5.58
Cameron	HGT	8.85	PM	2.44	WB	6.33	PM	2.39	PM	5.41
Iberia	HGT	9.89	PM	-0.14	PM	4.97	PM	2.96	HGT	5.82
Jefferson	PM	5.91	LGT	3.85	PM	4.47	WB	3.96	PM	5.27
Jefferson Davis	WB	8.81	LGT	1.90	LGT	5.93	LGT	3.00	LGT	6.01
Lafayette	HGT	8.91	PM	0.73	PM	4.65	HGT	3.20	HGT	5.43
Lafourche	HGT	8.81	PM	0.73	PM	4.86	WB	4.61	HGT	5.87
Orleans	LGT	9.12	WB	4.91	WB	6.88	LGT	3.54	LGT	6.93
Plaquemines	WB	9.92	LGT	2.41	LGT	5.16	LGT	2.04	LGT	6.05
St. Bernard	PM	6.24	PM	2.29	PM	3.66	WB	3.75	PM	4.90
St. Charles	HGT	8.29	PM	-0.78	HGT	5.30	PM	1.81	PM	4.88
St. James	WB	9.46	WB	4.18	HGT	6.84	LGT	2.06	LGT	6.02
St. John the Baptist	HGT	7.40	PM	-1.84	HGT	5.90	PM	2.16	HGT	4.78
St. Martin	HGT	8.81	PM	-0.23	HGT	5.48	HGT	3.07	HGT	5.53
St. Mary	WB	9.29	LGT	2.32	LGT	5.85	WB	5.27	LGT	6.80
Terrebonne	HGT	8.79	PM	0.15	PM	4.85	HGT	3.40	PM	5.41
Vermilion	HGT	9.04	PM	1.97	LGT	5.23	HGT	3.30	PM	5.84
Non-Coastal Parishes										
Allen	LGT	8.62	LGT	2.78	PM	4.62	HGT	2.40	PM	5.52
Ascension	HGT	7.12	PM	1.00	HGT	6.30	HGT	1.32	HGT	4.45
Avoyelles	LGT	8.42	WB	4.66	WB	6.78	HGT	3.44	WB	6.47
Beauregard	HGT	7.83	HGT	3.42	WB	5.98	PM	2.27	HGT	5.42
Bienville	LGT	9.09	WB	4.54	PM	4.15	LGT	3.75	LGT	6.63
Bossier	PM	6.64	HGT	4.19	HGT	5.88	HGT	2.40	PM	5.19
Caddo	LGT	811.2(98 Ma6W3.7(3(T)-375)-1.(.)5(2)-74(T)-3759.5(6.)11.2(30)-4588.2v759.5(6.)1875)-4414(07)-e(30)-4GM								4.(M)-46i3(e)6.59.5(6.)1

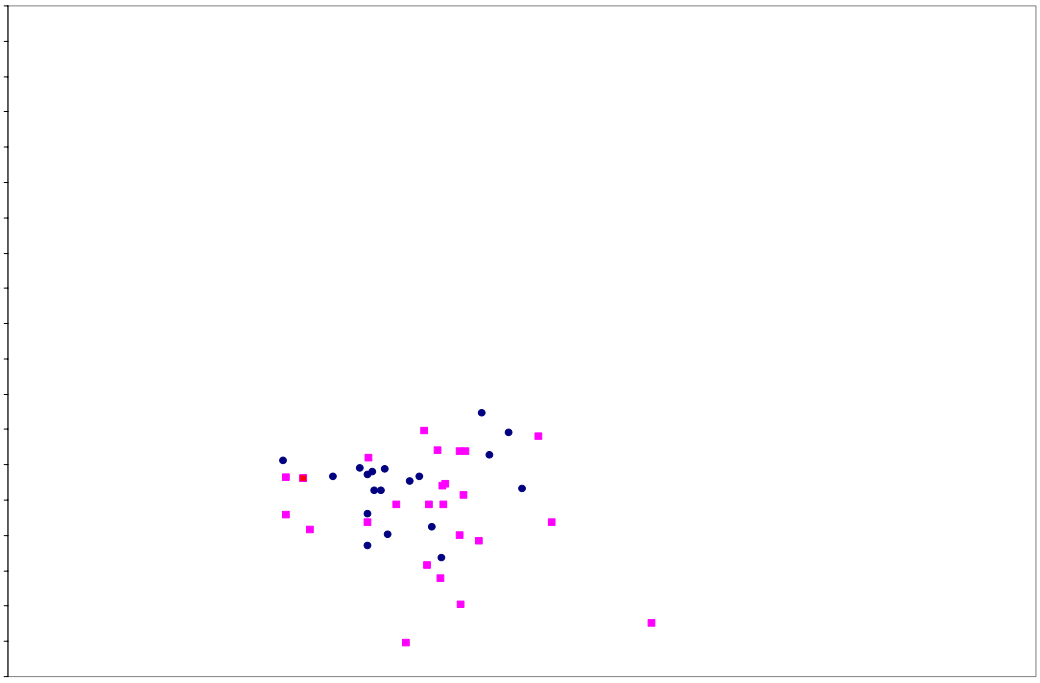
Although the distribution in Figure 18 suggests a weak positive association between population growth and PCPI, echoing Gottlieb's observation cited above, the association appears to be a consequence of three or four "outliers."

The reversal of fortune that accompanied the 1981-1985 "collapse" is clearly illustrated in Figure 19. Nearly 90 percent of the coastal parishes slid into either the "low growth traditional" or "population magnet" categories as growth in PCPI fell below the state median rate. Only two coastal parishes, Orleans and St. James, qualified as "wealth builders," but with PCPI growth rates barely above the median. Although the distribution is more dispersed than it was in the previous period, even with outliers there is no apparent association between population and PCPI growth.

In both the "recovery" of 1986 to 1990 and "lull" from 1991 to 2000, depicted in Figures 20 and 21, the observations are quite tightly packed around the intersection of the state medians with little if any association between the two organizing variables apparent in the distribution.

Looking at the 1969 to 2000 period as a whole, in Figure 22, there is very little difference among the parishes and no apparent relationship between rates of growth in population and in PCPI. This pattern is consistent with the analysis of states, parishes and SMSAs in the previous section and supports the conclusion that although the energy boom of the 1970s and the collapse in the early 1980s affected coastal areas of Louisiana moderately more than the rest of the state, these differences disappear quite soon thereafter.





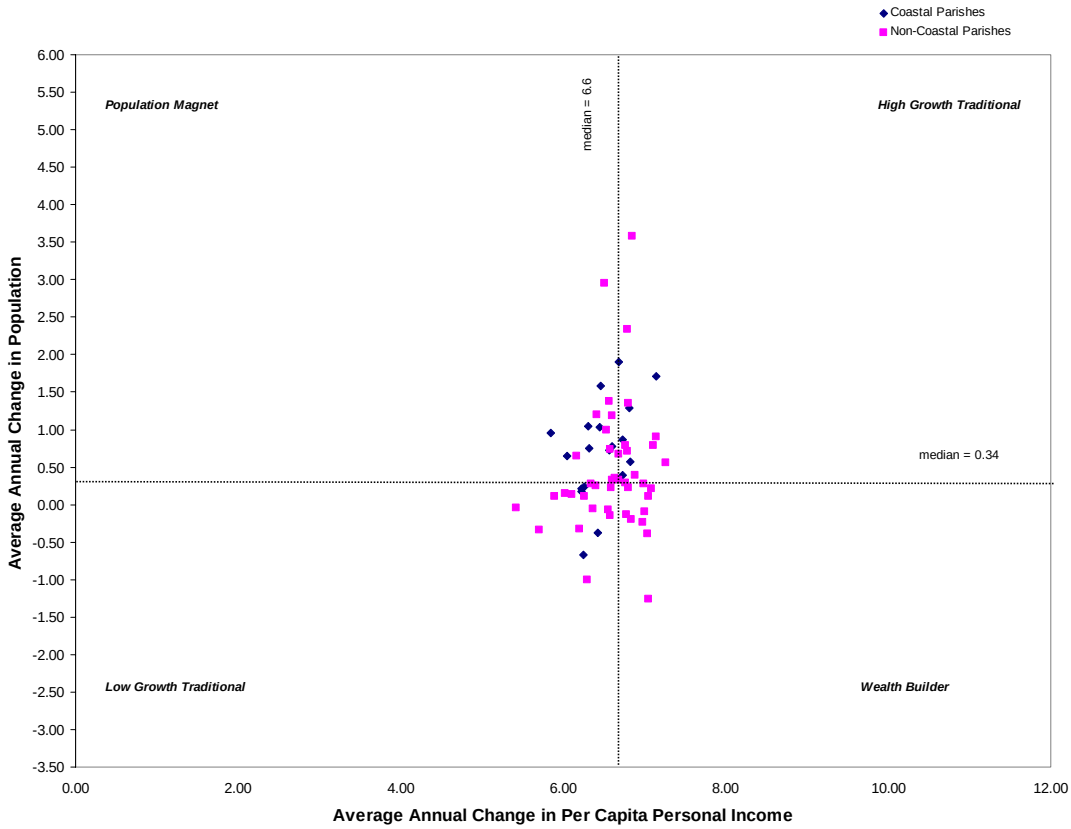
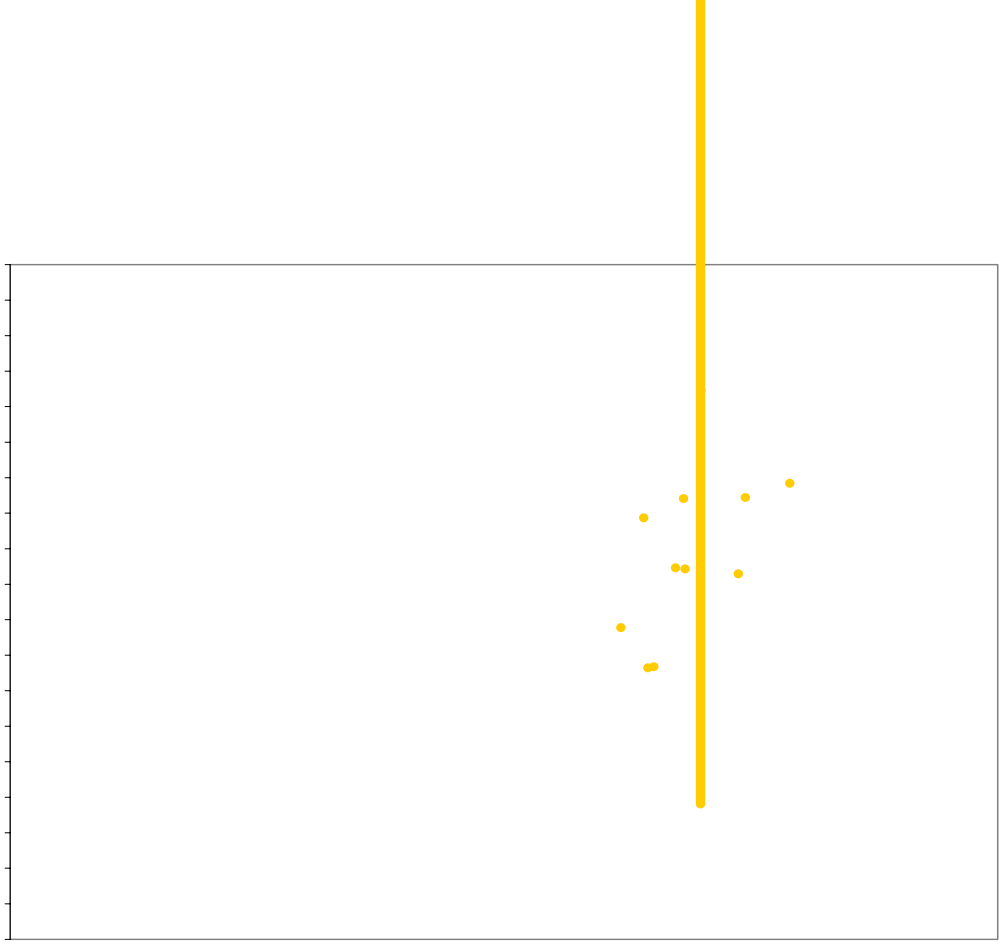


Figure 22: Change in Population and PCPI for Louisiana Parishes, 1969-2000.

In Figures 23 through 27, the same classification system is applied to the 50 states. Although conceptually less applicable or relevant to states because of the range among them in terms of economic diversity and population size, density and distribution the patterns are quite similar to those observed for Louisiana's parishes. The principal empirical continuity throughout the period is that Florida and Texas consistently are



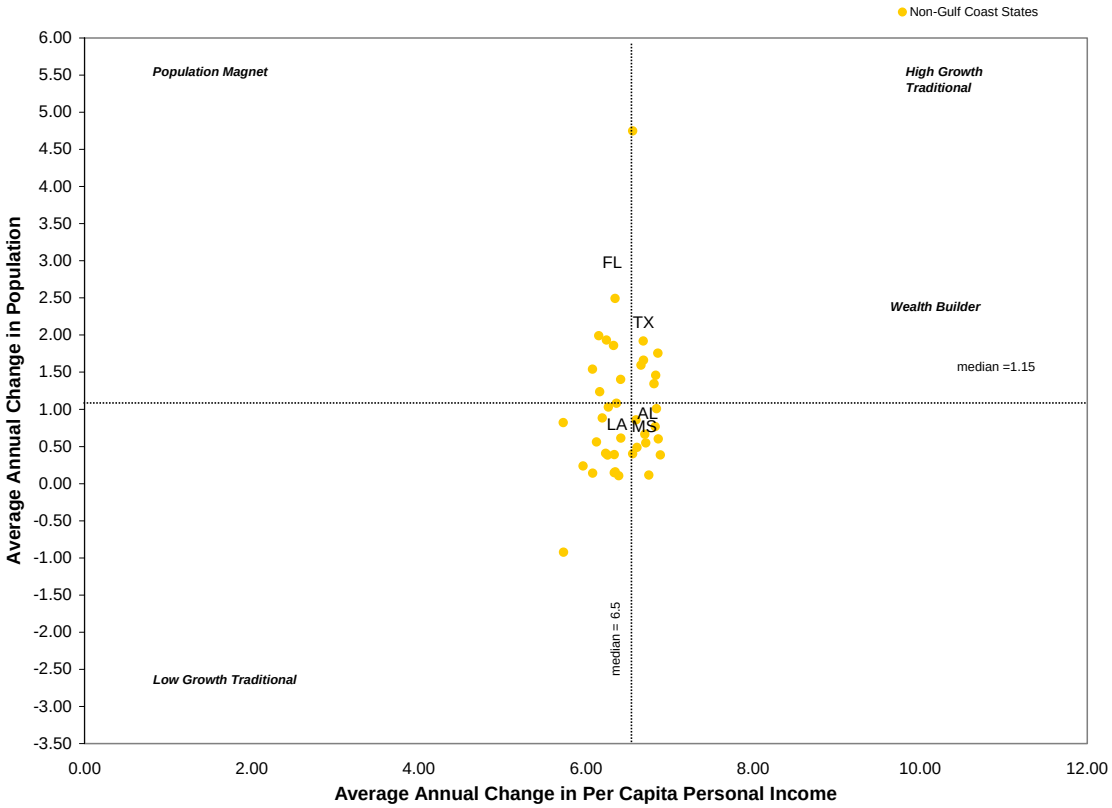


Figure 27: Percent Change in Population and PCPI for the U.S., 1969-2000.

12. CONCLUSIONS AND IMPLICATIONS

Our goal is to understand the effects of the development of the reserves of oil and gas located on the Outer Continental Shelf under Federal jurisdiction on the economies of the communities located in the adjacent coastal parishes of Louisiana. Louisiana is the nation's most energy intensive state. Our two principal methodological or analytical premises are:

1) If cumulative economic effects of OCS development are not evident in Louisiana's coastal parishes, they are not likely to be found in more distant, less energy intensive locations.

2) In order to characterize the magnitude and duration of the effects that OCS development may have had on the Gulf Coast economy, other changes in the national and regional economy affecting the region must be accounted for and made comparable. If this is not done, an illusion of causality can be created simply by the limits of the analysis itself.

The method used in the study to provide a consistent and comprehensive analytical framework is "growth accounting." Growth accounting decomposes changes in per capita personal income into its basic conceptual components; namely, changes in per capita personal income attributable to changes in:

- The mix of industries operating in the region,
- Wages in the region in relation to wages in the nation,
- The proportion of the population in the labor force,
- Transfer payments, and,
- Property income.

These components of change were compared for the 19 coastal parishes and 45 non-coastal parishes in Louisiana, and, to provide context and as a kind of consistency check, also for the five states bordering on the Gulf of Mexico and Louisiana's eight MSAs.

The 1969 to 2000 period saw extreme fluctuation in energy prices and energy production. Oil and gas prices had been abnormally stable in the United States from the end of the Second World War until the Arab oil embargo in 1974. After the embargo, however, there was extreme variation by any historical standard—especially during the oil "boom" of the 1970s and the subsequent "bust" in the mid-1980s.

Variation is an analytical advantage when trying to discern effects and relationships, but there are also analytical disadvantages that complicate the analysis. Major technological and structural changes in the industry occurred as a response to the extreme variation both by market forces and governmental policies. From our standpoint, however, the more serious problem is separating the effects of development on the OCS from the effects of on-shore trends and events.

Production of oil and gas from within the state's jurisdiction rose very rapidly by almost 600 percent from 1950 to its peak in 1970. It then declined even more rapidly, falling back to 1950 levels by 1980. In contrast, offshore oil production declined only modestly during the 1970s, and offshore gas production continued to increase. Offshore oil production resumed growth in 1990 and is currently well above its previous peak 1970 level (see Figures 4a and 4b).

Despite such a precipitous drop in production, other measures of oil and gas activity like the rig count and energy extraction employment continued to rise throughout the 1970s. An implication of the divergent patterns of offshore production and onshore production (shown in Figures 4a and 4b) is that if the sort of cumulative effects usually associated

decreasing modestly during the bust. But it was not nearly as much of an explanation as were changes in labor force participation and transfer payments.

These effects seem limited, however, to these two periods. During the “recovery” of 1986 to 1990 and what we term the “energy lull” from 1991 to 2000, there are no apparent

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APPENDIX A

PARISH DATA

Table A.1a

Growth Rate and Components of Percentage Change in Per Capita Personal Income for Coastal Parishes (1969-1980)

Coastal Parishes

Parish	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Transfer

Table A.1b

Growth Rate and Components of Percentage Change in Per Capita Personal Income for Non-Coastal Parishes (1969-1980)

Non-Coastal Parishes Parish	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Transfer Payments Ratio	Z Score	Property Income ratio	Z Score

Table A.2a

Table A.2b

Growth Rate and Components of Percentage Change in Per Capita Personal Income for Non-Coastal Parishes (1981-1985)

Non-Coastal Parishes

Parish	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Transfer Payments Ratio	Z Score	Property Income ratio	Z Score
Allen	3.05	-0.63	n.a	0.00	n.a	0.00	n.a	0.00	-1.34	-1.18	1.22	1.31

Table A.3a

Growth Rate and Components of Percentage Change in Per Capita Personal Income for Coastal Parishes (1986-1990)

Coastal Parishes

Parish	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Transfer Payments Ratio	Z Score	Property Income ratio	Z Score
Acadia	4.20	-0.56	3.92	0.28	-1.82	-1.00	1.62	0.04	0.56	0.52	-0.07	-0.37
Assumption	4.70	-0.01	4.19	1.09	-1.79	-0.96	2.21	0.49	0.40	0.39	-0.32	-0.78
Calcasieu	5.63	1.03	3.55	-0.79	-1.06	-0.21	3.28	1.30	-0.03	0.03	-0.11	-0.45
Cameron	4.95	0.28	3.80	-0.07	-1.52	-0.68	2.88	1.00	-0.45	-0.31	0.24	0.12
Iberia	4.41	-0.33	3.82	0.00	-1.95	-1.13	2.09	0.40	0.22	0.24	0.24	0.12
Jefferson	3.80	-1.01	3.44	-1.09	-0.82	0.02	1.71	0.11	-0.79	-0.59	0.26	0.15
Jefferson Davis	4.44	-0.30	3.81	-0.02	-0.39	0.47	0.87	-0.52	-0.65	-0.48	0.80	1.03
Lafayette	4.11	-0.67	3.81	-0.01	-1.52	-0.68	1.78	0.17	-0.11	-0.03	0.14	-0.04
Lafourche	4.26	-0.50	3.58	-0.69	-0.31	0.55	1.25	-0.24	-0.28	-0.18	0.03	-0.22
Orleans	5.06	0.40	3.62	-0.59	-0.77	0.08	1.56	0.00	0.24	0.25	0.41	0.41
Plaquemines	4.28	-0.47	3.71	-0.32	-1.33	-0.49	0.83	-0.55	0.92	0.81	0.15	-0.02
St. Bernard	3.22	-1.66	3.31	-1.50	-2.01	-1.18	0.57	-0.75	1.42	1.22	-0.06	-0.37
St. Charles	5.53	0.93	3.17	-1.88	-1.44	-0.60	4.22	2.02	-0.41	-0.28	-0.01	-0.28
St. James	6.01	1.46	n.a	0.00	n.a	0.00	n.a	0.00	-2.93	-2.35	-0.29	-0.74
St. John the Baptist	5.84	1.27	3.61	-0.60	-1.02	-0.18	4.04	1.88	-0.65	-0.47	-0.14	-0.49
St. Martin	4.81	0.11	4.47	1.89	-1.86	-1.04	5.42	2.92	-2.54	-2.03	-0.68	-1.37
St. Mary	4.20	-0.56	3.79	-0.10	-2.11	-1.29	2.52	0.72	0.10	0.14	-0.08	-0.40
Terrebonne	4.20	-0.56	3.30	-1.51	-1.46	-0.62	1.79	0.17	0.81	0.72	-0.24	-0.66
Vermilion	4.36	-0.38	3.76	-0.17	-0.74	0.12	1.10	-0.35	0.01	0.07	0.23	0.11
Mean	4.63		3.70		-1.33		2.21		-0.22		0.03	
Std. Error	0.72		0.31		0.56		1.31		1.06		0.32	

Table A.3b

Growth Rate and Components of Percentage Change in Per Capita Personal Income for Non-Coastal Parishes (1986-1990)

Non-Coastal Parishes

Parish	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Transfer Payments Ratio	Z Score	Property Income ratio	Z Score
Allen	4.22	-0.55	n.a	0.00	n.a	0.00	n.a	0.00	-1.11	-0.85	-0.26	-0.68
Ascension	6.20	1.67	3.41	-1.20	-0.04	0.83	3.69	1.61	-0.98	-0.75	0.12	-0.07
Avoyelles	5.28	0.64	3.94	0.34	0.06	0.93	1.77	0.16	-0.18	-0.09	-0.31	-0.77
Beauregard	4.91	0.23	3.97	0.44	-0.86	-0.01	1.87	0.24	0.29	0.29	-0.35	-0.84
Bienville	3.45	-1.41	4.16	0.99	-2.31	-1.49	1.66	0.08	0.66	0.60	-0.73	-1.45
Bossier	5.11	0.45	3.56	-0.75	-1.02	-0.17	1.12	-0.33	1.32	1.14	0.12	-0.06
Caddo	4.20	-0.56	3.56	-0.74	-0.42	0.43	0.44	-0.85	0.28	0.29	0.35	0.30
Caldwell	4.89	0.21	n.a	0.00	n.a	0.00	n.a	0.00	0.21	0.23	-0.01	-0.27
Catahoula	5.50	0.88	4.17	1.04	0.33	1.20	0.11	-1.10	-0.70	-0.52	1.58	2.31
Claiborne	3.25	-1.63	4.04	0.65	-1.50	-0.66	0.03	-1.16	1.01	0.88	-0.33	-0.80
Concordia	5.05	0.39	4.17	1.04	0.65	1.54	1.06	-0.37	-1.80	-1.42	0.96	1.30
De Soto	3.24	-1.64	3.69	-0.38	-0.40	0.46	-0.33	-1.43	-0.77	-0.58	1.06	1.46
East Baton Rouge	5.28	0.64	3.71	-0.32	-0.34	0.52	2.36	0.61	-0.53	-0.38	0.08	-0.14
East Carroll	5.29	0.66	n.a	0.00	n.a	0.00	n.a	0.00	-0.65	-0.47	2.53	3.85
East Feliciana	5.07	0.41	4.06	0.71	1.04	1.93	-2.27	-2.90	1.91	1.63	0.32	0.26
Evangeline	4.54	-0.18	4.57	2.20	-0.59	0.27	2.67	0.84	-1.87	-1.48	-0.24	-0.66
Franklin	6.35	1.84	4.71	2.62	-1.42	-0.59	3.29	1.31	-0.49	-0.35	0.27	0.17
Grant	5.02	0.35	4.49	1.97	0.21	1.08	2.90	1.02	-2.84	-2.28	0.25	0.15
Iberville	5.32	0.68	3.32	-1.45	0.66	1.54	1.51	-0.03	-0.35	-0.23	0.18	0.02
Jackson	3.53	-1.32	3.56	-0.76	-1.25	-0.41	-0.37	-1.46	1.82	1.55	-0.23	-0.64

Table A.4a

Growth Rate and Components of Percentage Change in Per Capita Personal Income for Coastal Parishes (1991-2000)

Coastal Parishes

Parish	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Transfer Payments Ratio	Z Score	Property Income ratio	Z Score
Acadia	4.08	0.64	3.37	-0.42	-0.98	-0.04	1.57	0.73	0.25	0.00	-0.13	0.01
Assumption	4.22	0.83	2.94	-1.99	-0.58	0.82	-0.17	-1.61	1.57	1.06	0.45	1.26
Calcasieu	3.25	-0.52	3.35	-0.51	-1.39	-0.90	1.25	0.30	0.17	-0.06	-0.13	0.01
Cameron	3.04	-0.81	3.55	0.26	-0.70	0.56	0.41	-0.82	-0.70	-0.77	0.48	1.32
Iberia	3.58	-0.05	4.15	2.46	-0.94	0.05	1.14	0.16	-0.71	-0.77	-0.06	0.16
Jefferson	3.98	0.50	3.63	0.52	-0.73	0.49	1.66	0.86	-0.66	-0.74	0.09	0.48
Jefferson Davis	3.17	-0.63	2.99	-1.81	-1.46	-1.04	-0.26	-1.73	2.14	1.52	-0.24	-0.24
Lafayette	4.42	1.11	4.02	1.98	-0.83	0.28	1.28	0.35	-0.38	-0.51	0.32	0.97
Lafourche	5.03	1.97	3.54	0.19	-0.56	0.85	2.82	2.41	-0.87	-0.90	0.10	0.51
Orleans	3.31	-0.43	3.46	-0.11	-0.56	0.86	0.28	-1.00	-0.20	-0.37	0.34	1.02
Plaquemines	2.48	-1.59	3.49	0.03	-1.44	-0.99	-0.45	-1.98	0.95	0.57	-0.08	0.11
St. Bernard	3.79	0.23	3.19	-1.10	-1.58	-1.30	2.06	1.40	0.15	-0.08	-0.04	0.21
St. Charles	2.90	-1.00	3.60	0.44	-0.80	0.35	-0.62	-2.21	0.70	0.36	0.02	0.32
St. James	2.27	-1.88	n.a	0.00	n.a	0.00	n.a	0.00	0.40	0.12	0.11	0.53
St. John the Baptist	2.77	-1.19	3.42	-0.23	-1.33	-0.77	1.62	0.80	-0.93	-0.95	-0.02	0.25
St. Martin	4.02	0.55	2.91	-2.13	-1.25	-0.60	-0.63	-2.22	3.22	2.39	-0.23	-0.21
St. Mary	4.47	1.18	3.76	0.99	-1.04	-0.15	1.31	0.38	0.42	0.14	0.02	0.34
Terrebonne	4.02	0.56	4.25	2.83	-1.41	-0.93	1.56	0.72	-0.05	-0.24	-0.34	-0.44
Vermilion	3.98	0.50	4.12	2.33	-1.33	-0.77	0.97	-0.08	0.77	0.42	-0.54	-0.88
Mean	3.62		3.54		-1.05		0.88		0.33		0.01	
Std. Error	0.73		0.40		0.35		1.00		1.08		0.26	

Table A.4b

Growth Rate and Components of Percentage Change in Per Capita Personal Income for Non-Coastal Parishes (1991-2000)

Non-Coastal Parishes

Parish	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Transfer Payments Ratio	Z Score	Property Income ratio	Z Score
Allen	3.86	0.33	n.a	0.00	n.a	0.00	n.a	0.00	-2.47	-2.19	-0.42	-0.61
Ascension	3.96	0.47	3.26	-0.82	-1.36	-0.84	0.64	-0.52	1.40	0.92	0.02	0.33
Avoyelles	4.05	0.59	3.59	0.37	-0.75	0.46	2.65	2.19	-1.06	-1.06	-0.38	-0.54
Beauregard	2.99	-0.88	3.51	0.08	-1.67	-1.47	1.22	0.26	-0.07	-0.26	-0.01	0.27
Bienville	3.47	-0.21	3.02	-1.71	-1.08	-0.24	1.37	0.46	-0.25	-0.41	0.41	1.18
Bossier	3.72	0.14	3.30	-0.70	-1.00	-0.08	2.10	1.44	-0.53	-0.63	-0.13	0.00
Caddo	3.55	-0.10	3.52	0.12	-0.69	0.58	0.90	-0.16	-0.29	-0.44	0.11	0.52
Caldwell	3.51	-0.16	n.a	0.00	n.a	0.00	n.a	0.00	1.02	0.62	-0.36	-0.50
Catahoula	3.82	0.28	3.32	-0.61	-0.57	0.83	1.16	0.18	0.03	-0.18	-0.11	0.05
Claiborne	3.75	0.18	3.65	0.60	-1.10	-0.28	0.72	-0.41	0.40	0.12	0.09	0.48
Concordia	2.94	-0.95	n.a	0.00	n.a	0.00	n.a	0.00	0.08	-0.13	-0.39	-0.55
De Soto	4.55	1.30	3.75	0.96	1.29	4.76	1.56	0.71	-2.79	-2.45	0.75	1.90
East Baton Rouge	3.40	-0.30	3.34	-0.55	-0.98	-0.02	1.47	0.60	-0.18	-0.35	-0.25	-0.25
East Carroll	1.56	-2.88	n.a	0.00	n.a	0.00	n.a	0.00	2.44	1.76	-1.49	-2.93
East Feliciana	4.00	0.52	3.26	-0.84	-0.69	0.59	0.04	-1.32	0.97	0.58	0.41	1.18
Evangeline	3.25	-0.51	3.12	-1.35	-0.66	0.64	0.36	-0.90	0.47	0.17	-0.03	0.22
Franklin	3.33	-0.41	n.a	0.00	n.a	0.00	n.a	0.00	1.34	0.88	-0.96	-1.79
Grant	4.12	0.69	n.a	0.00	n.a	0.00	n.a	0.00	0.68	0.35	-0.28	-0.31
Iberville	2.68	-1.31	3.34	-0.54	-1.06	-0.20	0.43	-0.80	0.01	-0.20	-0.03	0.22
Jackson	5.11	2.07	n.a	0.00	n.a	0.00	n.a	0.00	1.27	0.82	0.82	2.06
La Salle	2.75	-1.22	3.58	0.36	-1.92	-2.02	-0.03	-1.42	1.10	0.68	0.03	0.34
Lincoln	3.04	-0.81	3.28	-0.75	-0.97	-0.01	0.80	-0.30	0.10	-0.12	-0.17	-0.08
Livingston	4.29	0.93	3.50	0.05	0.13	2.32	1.75	0.97	-0.81	-0.85	-0.28	-0.32
Madison	2.34	-1.78	n.a	0.00	n.a	0.00	n.a	0.00	0.23	-0.02	-1.13	-2.16
Morehouse	3.12	-0.71	n.a	0.00	n.a	0.00	n.a	0.00	1.63	1.11	-0.64	-1.10
Natchitoches	4.04	0.58	n.a	0.00	n.a	0.00	n.a	0.00	-0.65	-0.73	-0.39	-0.55
Ouachita	4.13	0.70	3.51	0.09	-1.19	-0.47	1.76	0.99	0.09	-0.13	-0.04	0.20
Pointe Coupee	4.80	1.65	n.a	0.00	n.a	0.00	n.a	0.00	0.18	-0.06	0.43	1.21
Rapides	4.19	0.78	3.31	-0.66	-1.24	-0.58	1.62	0.80	0.70	0.36	-0.20	-0.15
Red River	2.98	-0.89	3.28	-0.75	0.06	2.16	0.36	-0.89	-0.50	-0.60	-0.22	-0.19
Richland	3.06	-0.79	3.37	-0.43	-1.64	-1.42	-0.11	-1.52	2.45	1.77	-1.01	-1.89
Sabine	3.30	-0.45	3.24	-0.92	-1.57	-1.28	0.67	-0.48	1.29	0.83	-0.31	-0.39
St. Helena	4.54	1.28	n.a	0.00	n.a	0.00	n.a	0.00	-2.76	-2.42	0.72	1.85
St. Landry	3.25	-0.51	n.a	0.00	n.a	0.00	n.a	0.00	0.97	0.58	-0.38	-0.53
St. Tammany	4.31	0.96	3.55	0.23	-0.44	1.10	2.23	1.62	-1.01	-1.02	-0.01	0.26
Tangipahoa	4.04	0.59	3.47	-0.07	-0.61	0.74	1.72	0.93	-0.49	-0.60	-0.03	0.21
Tensas	3.15	-0.65	4.05	2.09	-2.02	-2.21	1.83	1.08	0.38	0.11	-1.09	-2.07
Union	3.78	0.22	4.25	2.83	-1.19	-0.48	2.39	1.83	-1.14	-1.12	-0.53	-0.85
Vernon	3.14	-0.67	n.a	0.00	n.a	0.00	n.a	0.00	1.07	0.66	-0.01	0.26
Washington	3.51	-0.15	3.41	-0.27	-0.78	0.40	1.15	0.17	-0.35	-0.48	0.07	0.43
Webster	3.55	-0.10	3.34	-0.54	-0.86	0.23	-0.41	-1.92	1.36	0.89	0.12	0.54
West Baton Rouge	4.06	0.61	n.a	0.00	n.a	0.00	n.a	0.00	-2.15	-1.93	0.39	1.13
West Carroll	3.78	0.22	n.a	0.00	n.a	0.00	n.a	0.00	1.61	1.09	-1.35	-2.63
West Feliciana	5.41	2.49	n.a	0.00	n.a	0.00	n.a	0.00	3.65	2.74	0.25	0.82
Winn	2.83	-1.10	n.a	0.00	n.a	0.00	n.a	0.00	0.41	0.13	-0.60	-1.01
Mean	3.62		3.45		-0.91		1.12		0.22		-0.19	
Std. Error	0.72		0.26		0.68		0.81		1.31		0.52Ver02Ver61rS313683602Ver2 Er012 Er010.00	

Table A.5a

Growth Rate and Components of Percentage Change in Per Capita Personal Income for Coastal Parishes (1969-2000)

Coastal Parishes Parish	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Transfer Payments Ratio	Z Score	Property Income ratio	Z Score
Acadia	6.73	0.43	5.53	0.64	-0.70	-1.06	0.55	-0.77	1.71	1.32	-0.35	-0.82
Assumption	6.82	0.67	5.66	1.63	-0.54	-0.51	0.07	-1.77	1.91	1.62	-0.28	-0.44
Calcasieu	6.32	-0.66	5.24	-1.48	-0.48	-0.28	1.21	0.62	0.46	-0.57	-0.11	0.41
Cameron	6.05	-1.39	5.42	-0.18	-0.83	-1.50	1.17	0.53	0.36	-0.73	-0.05	0.69
Iberia	6.60	0.09	5.70	1.90	-0.43	-0.12	1.11	0.41	0.48	-0.54	-0.26	-0.35
Jefferson	6.31	-0.69	5.13	-2.23	-0.29	0.35	2.03	2.34	-0.69	-2.32	0.13	1.62
Jefferson Davis	6.22	-0.92	5.40	-0.30	-0.80	-1.37	-0.15	-2.24	2.03	1.81	-0.26	-0.34
Lafayette	7.14	1.53	5.52	0.57	-0.17	0.77	1.74	1.73	0.14	-1.06	-0.09	0.53
Lafourche	6.74	0.45	5.39	-0.33	-0.52	-0.44	1.31	0.82	0.65	-0.28	-0.10	0.47

Table A.5b

Growth Rate and Components of Percentage Change in Per Capita Personal Income for Non-Coastal Parishes (1969-2000)

Non-Coastal Parishes

Parish	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Transfer Payments	Z Score	Property Income ratio	Z Score
Allen	6.17	-1.07	n.a	0.00	n.a	0.00	n.a	0.00	0.42	-0.63	-0.13	0.33
Ascension	6.79	0.60	5.27	-1.21	-0.45	-0.20	2.03	2.34	0.09	-1.13	-0.15	0.20
Avoyelles	6.76	0.52	5.54	0.72	-0.50	-0.37	0.92	0.02	1.26	0.65	-0.46	-1.37
Beauregard	6.61	0.10	5.40	-0.28	-0.36	0.12	1.16	0.50	0.70	-0.21	-0.29	-0.50
Bienville	6.56	-0.02	5.57	0.92	-0.18	0.74	0.96	0.10	0.33	-0.78	-0.12	0.37

APPENDIX B

STATE Z-SCORES

Table B.1

Growth Rates of Per Capita Personal Income and Its Components for States, 1969-1980

State	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Property Income ratio	Z Score	Transfer

Table B.2

Growth Rates of Per Capita Personal Income and Its Components for States, 1981-1985

State	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Property Income Ratio	Z Score	Transfer Payments Ratio	Z Score
Alabama	5.75	0.51	4.41	0.37	-0.03	0.31	0.96	0.28	0.05	-0.72	0.36	0.22
Alaska	4.08	-1.14	4.53	0.75	-2.31	-2.83	0.47	-0.36	0.88	3.62	0.52	0.56
Arizona	5.16	-0.07	4.08	-0.69	-0.90	-0.89	1.77	1.36	0.03	-0.84	0.20	-0.13
Arkansas	5.57	0.34	4.56	0.87	-0.48	-0.31	1.14	0.52	0.13	-0.31	0.22	-0.09
California	5.05	-0.18	4.51	0.71	0.28	0.73	0.34	-0.54	0.17	-0.10	-0.25	-1.10
Colorado	4.82	-0.41	4.18	-0.36	-0.63	-0.52	1.00	0.34	0.11	-0.39	0.16	-0.21
Connecticut	6.07	0.84	4.26	-0.10	0.92	1.61	1.26	0.68	-0.02	-1.08	-0.35	-1.30
Delaware	6.02	0.79	4.05	-0.77	0.04	0.41	1.90	1.55	0.27	0.42	-0.25	-1.09
District of Columbia	5.89	0.66	4.13	-0.51	0.43	0.94	0.75	0.00	-0.01	-1.05	0.59	0.72
Florida	5.54	0.31	4.56	0.86	-0.41	-0.21	1.33	0.78	-0.21	-2.06	0.27	0.03
Geor												

Table B.3

Growth Rates of Per Capita Personal Income and Its Components for States, 1986-1990

State	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Property Income Ratio	Z Score	Transfer Payments Ratio

Table B.4

Growth Rates of Per Capita Personal Income and Its Components for States, 1991-2000

State	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Property Income Ratio	Z Score	Transfer Payments Ratio	Z Score
Alabama	3.71	-0.63	3.36	-0.66	-0.72	-1.07	0.79	0.23	-0.01	-0.34	0.28	1.12
Alaska	2.54	-3.08	3.31	-1.01	-1.81	-2.93	0.05	-1.93	0.03	-0.08	0.97	3.01
Arizona												

Table B.5
Growth Rates of Per Capita Personal Income and Its Components for States, 1969-2000

State	PCPI	Z Score	Industry Mix	Z Score	Wage Effect	Z Score	Participation	Z Score	Property Income Ratio	Z Score	Transfer Payments Ratio	Z Score
Alabama	6.77	1.06	5.44	0.73	-0.06	0.09	0.88	-0.04	-0.07	0.13	0.57	0.69
Alaska	5.73	-2.56	5.45	0.76	-1.00	-2.63	0.64	-1.20	0.07	1.17	0.58	0.73
Arizona	6.25	-0.76	5.35	-0.05	-0.22	-0.37	0.89	0.03	-0.07	0.10	0.29	-0.41
Arkansas	6.66	0.69	5.47	0.98	-0.10	-0.02	0.93	0.21	-0.21	-0.96	0.56	0.67
California	6.16	-1.08	5.29	-0.52	0.02	0.31	0.72	-0.81	0.03	0.91	0.09	-1.22
Colorado	6.89	1.50	5.40	0.35	0.25	0.97	1.20	1.53	-0.03	0.41	0.08	-1.26
Connecticut	6.72	0.89	5.22	-1.12	0.60	1.99	0.82	-0.34	0.07	1.21	0.00	-1.56
Delaware	6.08	-1.34	5.39	0.27	-0.30	-0.61	0.94	0.24	-0.11	-0.17	0.17	-0.91
District of Columbia	6.87	1.41	5.77	3.42	0.51	1.73	1.09	1.02	0.02	0.77	-0.52	-3.66
Florida	6.42	-0.15	5.37	0.12	-0.14	-0.16	0.81	-0.40	-0.09	-0.04	0.48	0.33
Georgia	6.83	1.28	5.48	1.06	0.38	1.34	0.70	-0.95	-0.04	0.38	0.31	-0.34
Hawaii	5.73	-2.57	5.34	-0.10	-0.37	-0.83	0.36	-2.58	0.08	1.27	0.32	-0.32
Idaho	6.27	-0.68	5.37	0.16	-0.37	-0.81	0.90	0.08	-0.25	-1.21	0.60	0.83
Illinois	6.26	-0.71	5.26	-0.77	-0.02	0.20	0.75	-0.69	-0.02	0.47	0.29	-0.40
Indiana	6.24	-0.79	5.19	-1.37	-0.25	-0.46	0.85	-0.17	-0.08	0.05	0.52	0.51
Iowa	6.20	-0.94	5.31	-0.37	-0.48	-1.12	1.06	0.85	-0.43	-2.61	0.73	1.34
Kansas	6.42	-0.15	5.38	0.23	-0.19	-0.29	1.10	1.06	-0.26	-1.34	0.39	-0.04
Kentucky	6.60	0.48	5.39	0.32	-0.07	0.06	0.95	0.29	-0.15	-0.49	0.48	0.33
Louisiana	6.49	0.11	5.42	0.51	-0.31	-0.63	0.91	0.11	-0.03	0.44	0.50	0.43

The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The Minerals Management Service Mission

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Minerals Revenue Management** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.