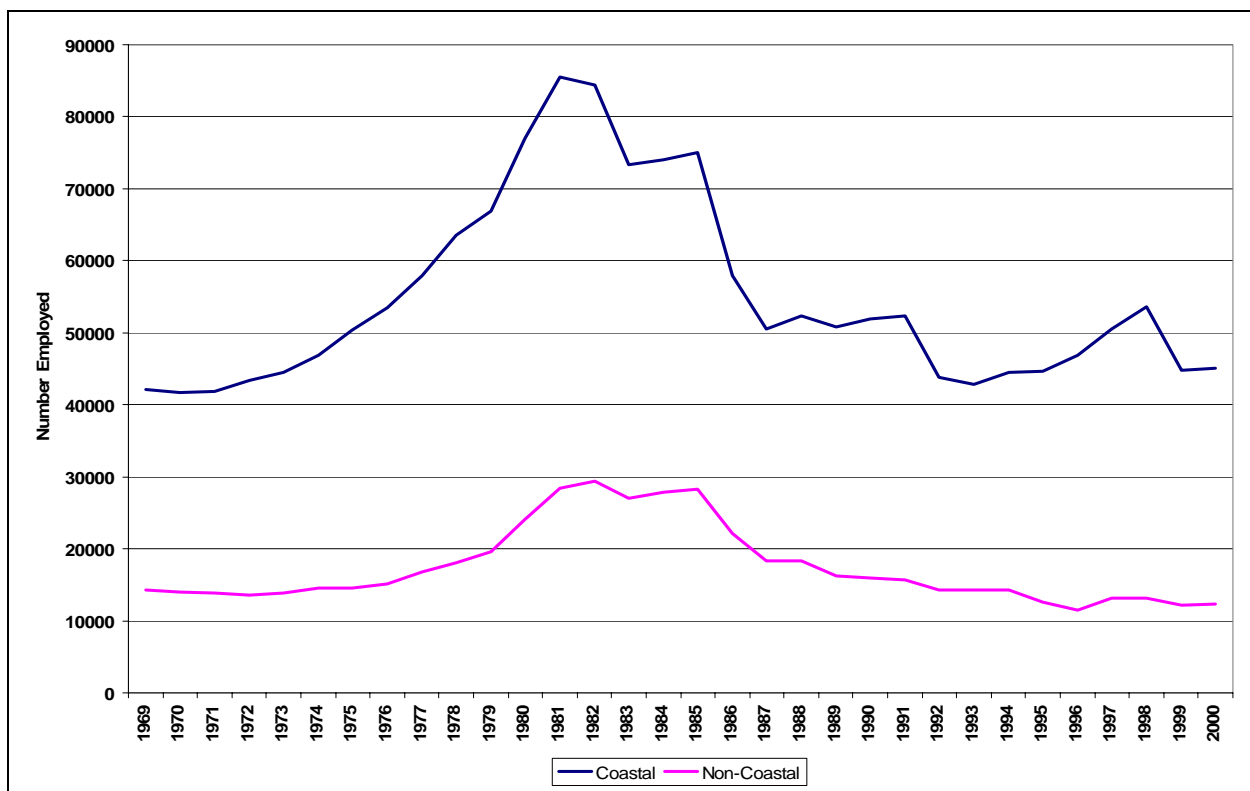


Coastal Marine Institute

# Accounting for Socioeconomic Change from Offshore Oil and Gas: Cumulative Effects on Louisiana's Coastal Parishes, 1969-2000



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# Accounting for Socioeconomic Change from Offshore Oil and Gas: Cumulative Effects on Louisiana's Coastal Parishes, 1969-2000

Author

Allan G. Pulsipher

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## **ABSTRACT**

The objective is to see if the growth of offshore oil and gas development that took place between 1969 and 2000 resulted in cumulative economic effects that differentiate the economic experience and circumstances of residents in Louisiana's coastal parishes from the residents of Louisiana's non-coastal parishes. A comparison of the average rate of growth in per capita personal income in coastal and non-coastal parishes revealed remarkably little difference 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," because the contributors to growth were different. Onshore production in coastal parishes peaked early in the 1970s and then fell rapidly. Offshore production was largely a stabilizing force which became relatively and absolutely much more important in the last half of the period. But during this latter period there are no discernable differences between the two groups of parishes and the implication is, that in a broad regional context, the effects of offshore development were temporary and transitory rather than cumulative or permanent. Demographic indicators in the parishes are consistent with this conclusion.

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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 slowly until 1982, at which time it began once again to grow.
- Offshore production began a steady growth in 1990 and by the end of the study period in 2000 was twice as large as its post-1970 low and 50 percent above its 1970 peak.
- Onshore and offshore gas follows a roughly similar pattern.

Further, measures such as employment in oil and gas exploration, the number of rigs drilling and net migration appear to have been impervious to the precipitous slide of onshore production in the 1970s, but responded sharply to the erosion and collapse of the international crude oil price in the first half of the 1980s.

In addition to the simulative effects of offshore activity being obscured or counterbalanced by the rapid decline in onshore activity, other factors may explain the apparently limited economic effects observed.

- Important technological and structural changes in the national economy had similar consequences for both coastal and non-coastal parishes. The rise of scientific agriculture and migration of agricultural workers to urban areas, affordable air conditioning, the interstate highway system and the spreading of branch plant manufacturing all had very major impacts on the south and the state.
- Transition in the national economy—slow-down in the mid-1970s; stagflation in the late 1970s early 1980s; mild recession, slow growth, low inflation, low

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.<sup>1</sup>

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.

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<sup>1</sup> 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 (5<sup>th</sup> Cir. 1985) p. 52."

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

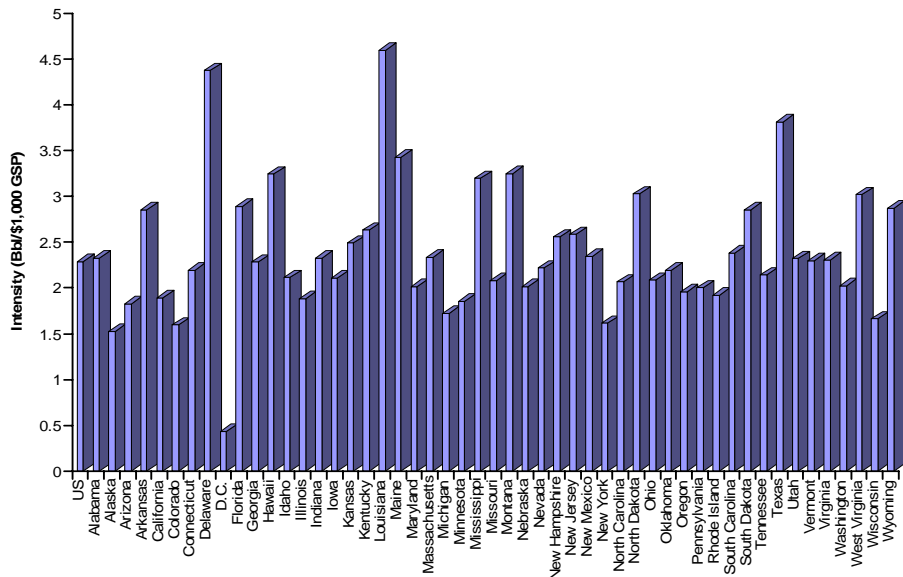
But the past is not prologue, and the 1970s productivity slowdown has over the last decade been overcome by a productivity growth rebound originating primarily in the new-economy sectors. As the economy made the transition from the oil age to the electronic age, the aftershocks of the energy crises have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

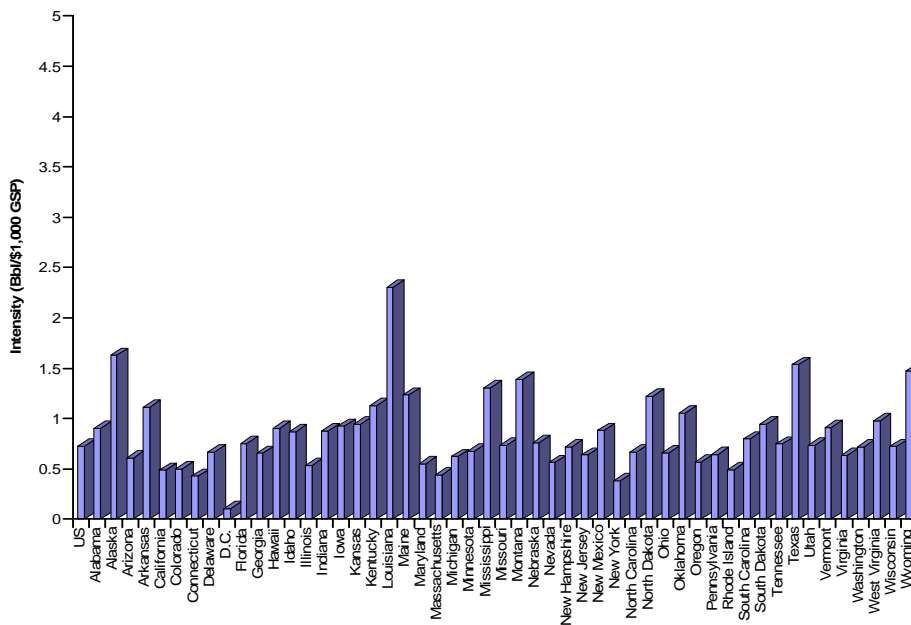
There is little doubt that the energy sector is very important on the Gulf Coast. As figures 1a and 1b and 2a and 2b illustrate, the “energy intensity,” measured as units of oil or gas consumed per \$1,000 of Gross State Product (GSP), is higher for the five GOM states—Texas, Louisiana, Mississippi, 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.



Source: USDOC, BEA. 2006b & USDOE, EIA. 2006.

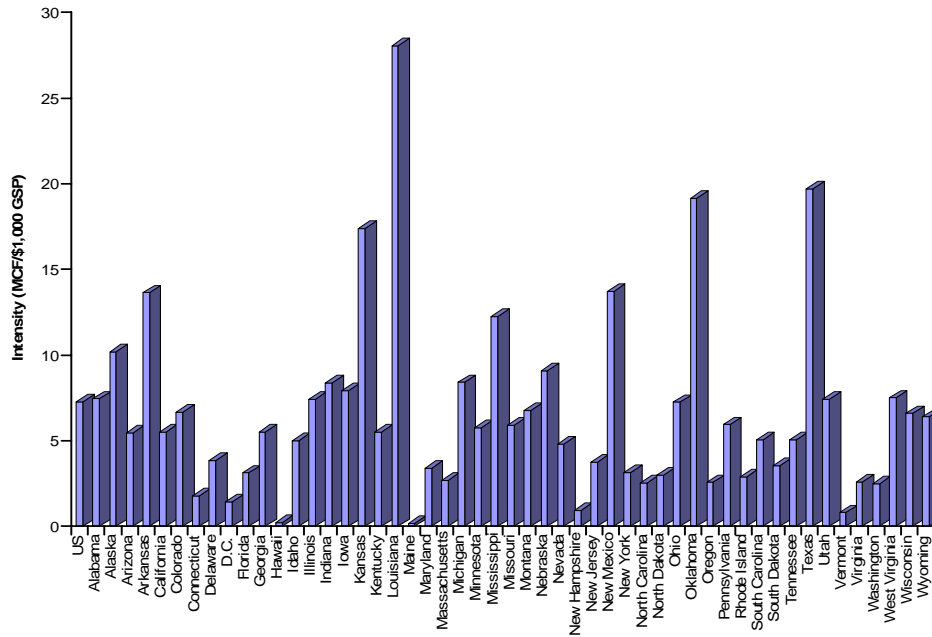
Figure 1a: Oil Intensity in 1980: Barrels Consumed/\$1,000 GSP.



Source: USDOC, BEA. 2006b & USDOE, EIA. 2006.

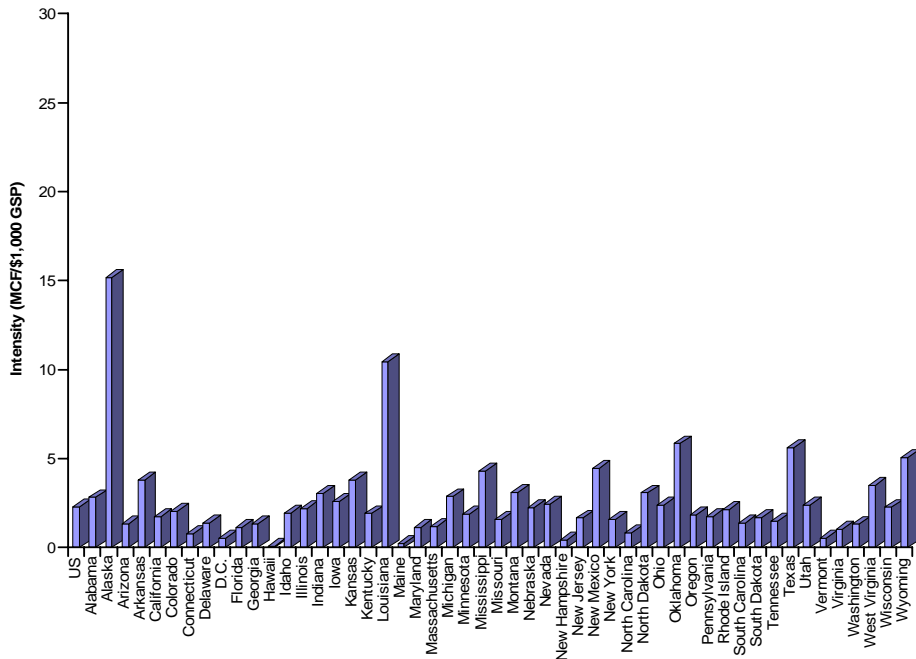
Figure 1b: Oil Intensity in 2000: Barrels Consumed/\$1,000 GSP.





Source: USDOC, BEA. 2006b & USDOE, EIA. 2006.

Figure 2a: Natural Gas Intensity in 1980: MCF Consumed/\$1,000 GSP.



Source: USDOC, BEA. 2006b & USDOE, EIA. 2006.

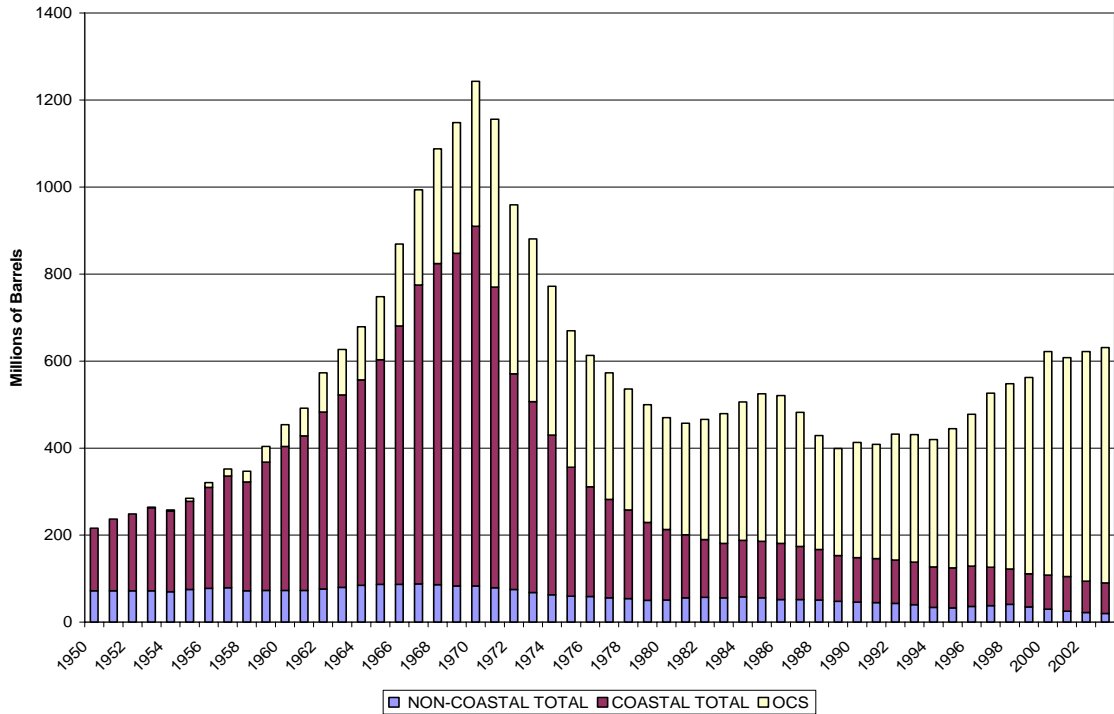
Figure 2b: Natural Gas Intensity in 2000: MCF Consumed/\$1,000 GSP.

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.

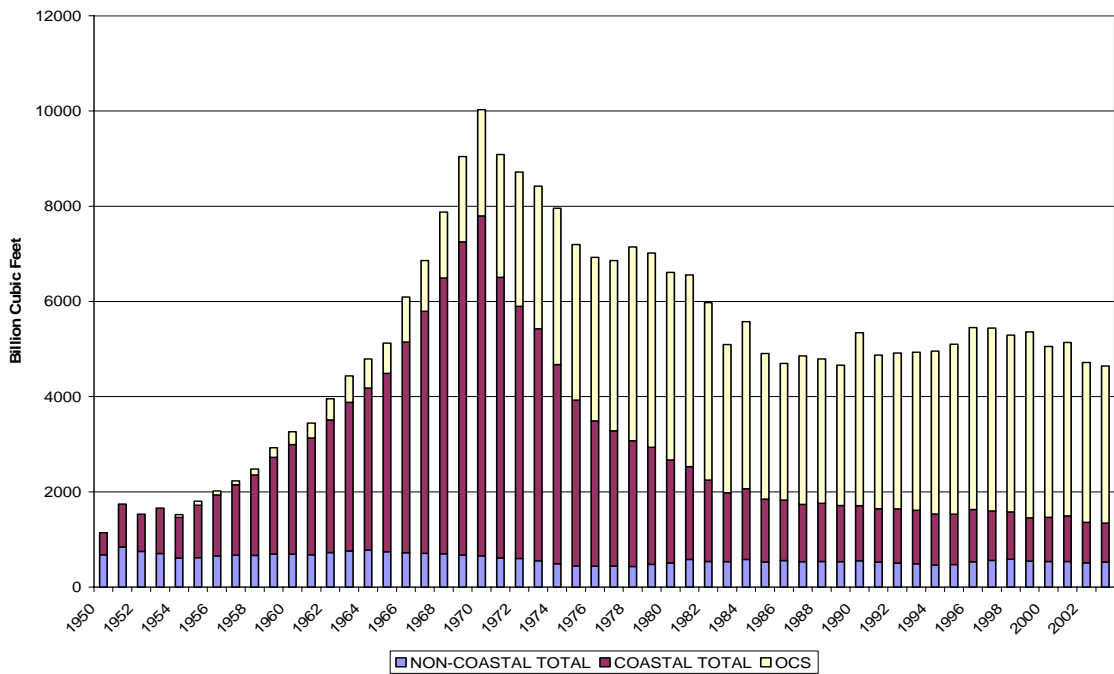
As Figures 4a and 4b show, the state and OCS production behaved differently during the period. The rapidity of the drop in oil produced in the coastal parishes is exemplified by the fact that 10 years after its 1970 peak production, it had fallen back almost to its 1950 level—a rise and fall of approximately 600 percent. Policy changes as well as geologic factors are reflected in these oscillations, but as Figure 4a shows, although production of oil from the federal OCS also declined, it did so much more slowly. Further, as can be seen in Figure 4b, gas produced on the OCS continued to increase at a healthy rate, without pausing—in contrast to declining onshore gas production that fell almost as rapidly as oil.

Tyler Priest (2004) provides a concise explanation of the principal forces driving offshore production, many of which were different than those affecting on-shore production.



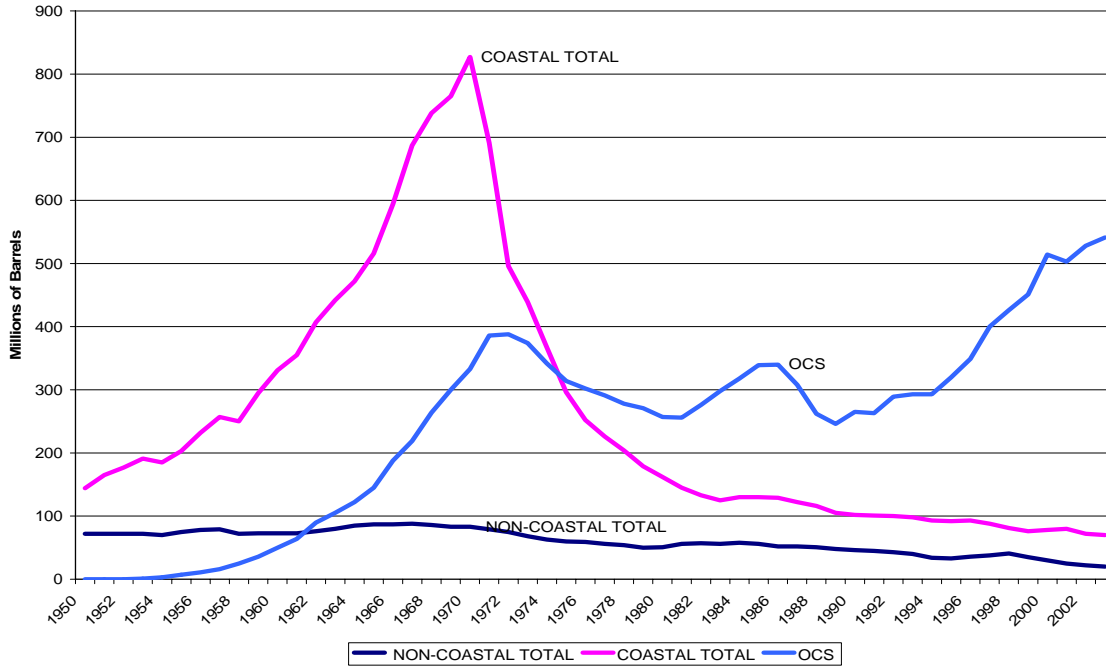
Source: LA, DNR. 2006(a & b).

Figure 3a: Total Oil Production in Louisiana, 1950-2003, Bar Graph.



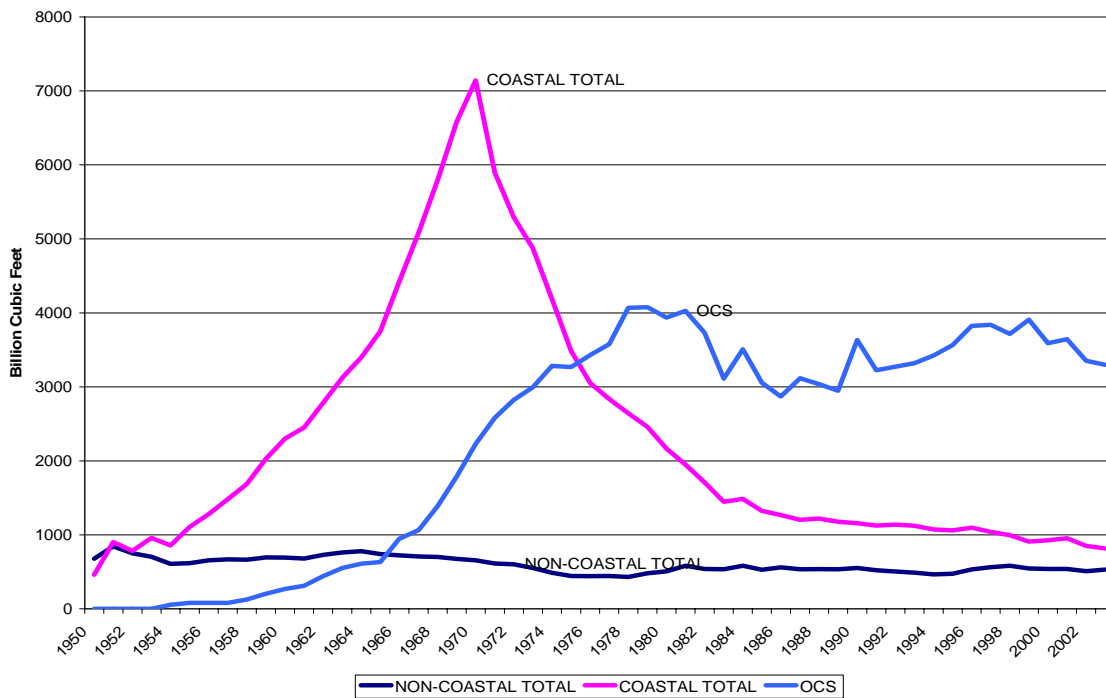
Source: LA, DNR. 2006(a & b).

Figure 3b: Total Gas Production in Louisiana, 1950-2003, Bar Graph.



Source: LA, DNR. 2006(a & b).

Figure 4a: Total Oil Production in Louisiana, 1950-2003, Line Graph.



Source: LA, DNR. 2006(a & b).

Figure 4b: Total Gas Production in Louisiana, 1950-2003, Line Graph.

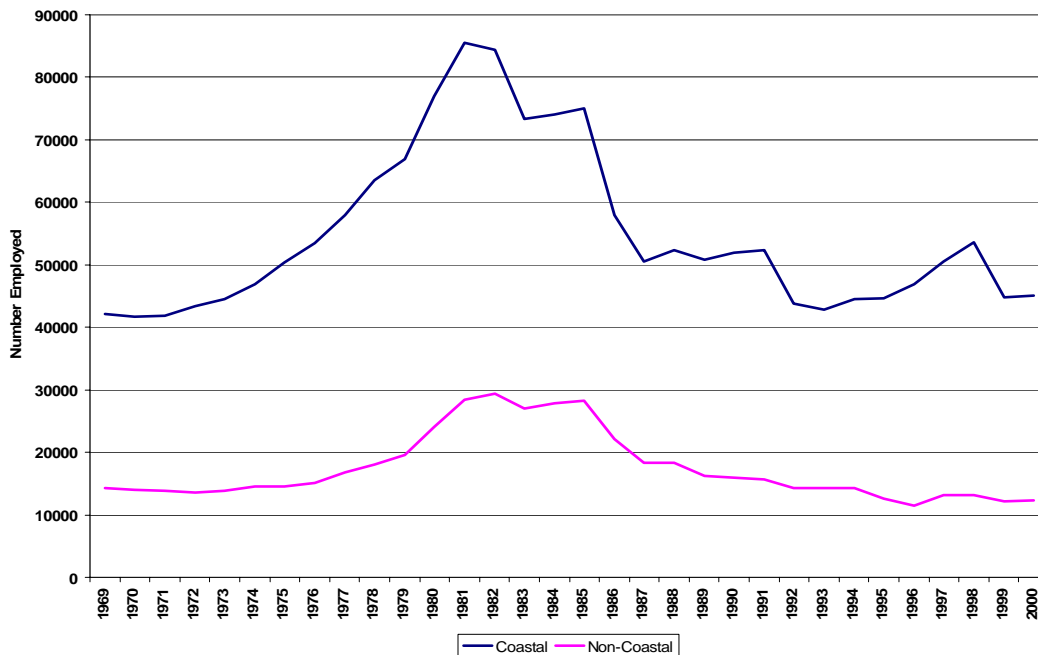
Oil and gas produced on the OCS each exceeded their corresponding coastal counterparts in 1976 and since then have accounted for a steadily increasing share. In 1997, oil produced on the OCS exceeded its previous 1970 peak and has continued to increase through 2003. This pattern of steady increase in 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.

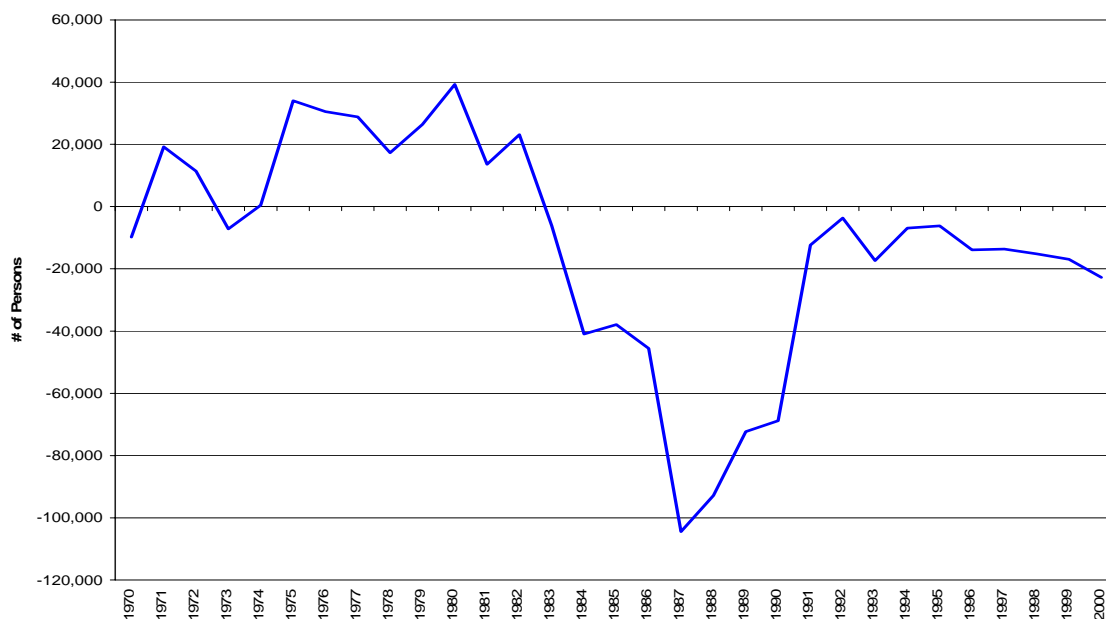
Similarly, Figure 6 shows net migration for Louisiana on an annual basis from 1969 to 2000. The state gained from migration from 1969 to 1983 with the exception of a small loss in 1973. Starting in 1983, however, migrants left the state at an increasing rate that exceeded 100,000 in 1987. The negative 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.



Source: USDOC, BEA. 2006b.

Figure 5: Employment in Mining in Coastal and Non-Coastal Parishes in Louisiana, 1969-2000.

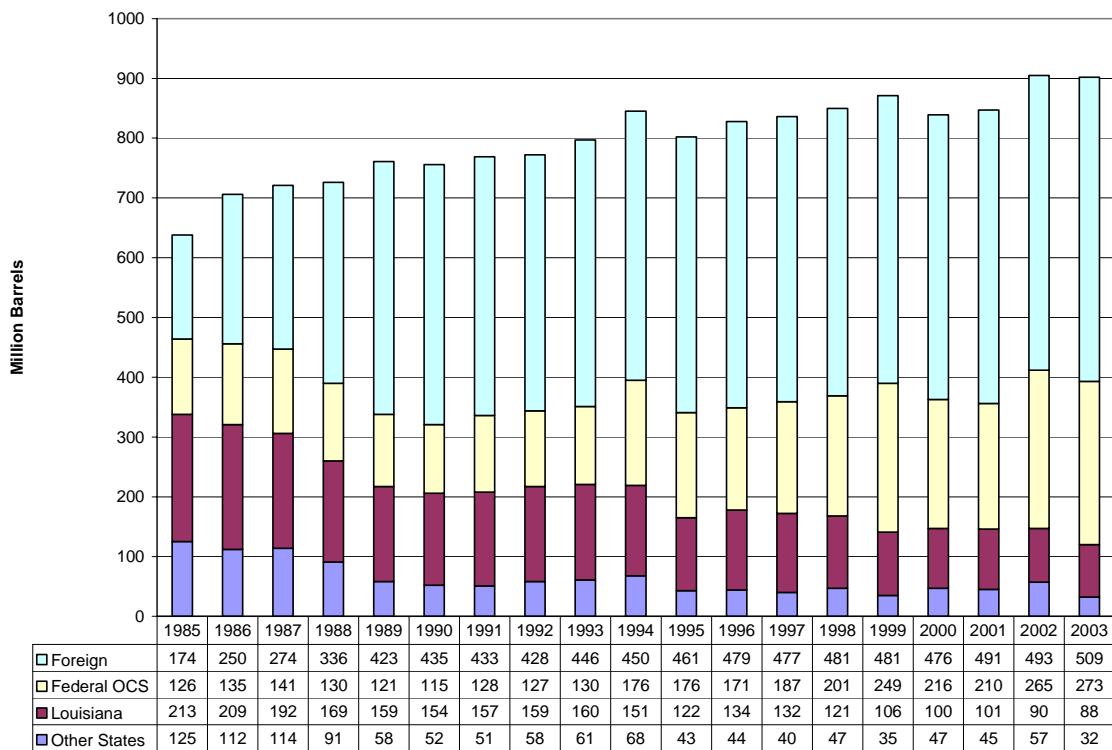


Source: USDOC, CB. 2006.

Figure 6: Net Migration for the State of Louisiana, 1970-2004.

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.



Source: LA, DNR. 2006b.

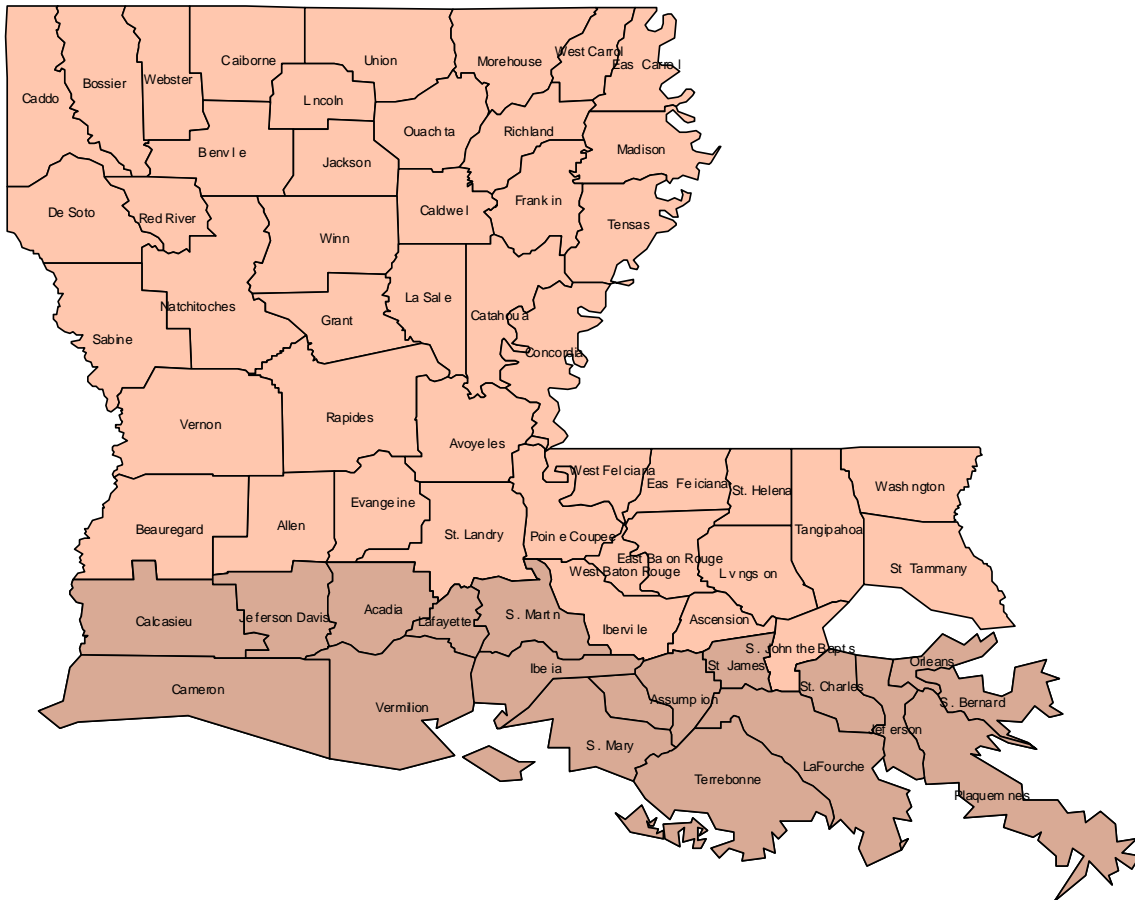
Figure 7: Louisiana Refinery Crude Oil Input by Source.

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<sup>2</sup>, 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

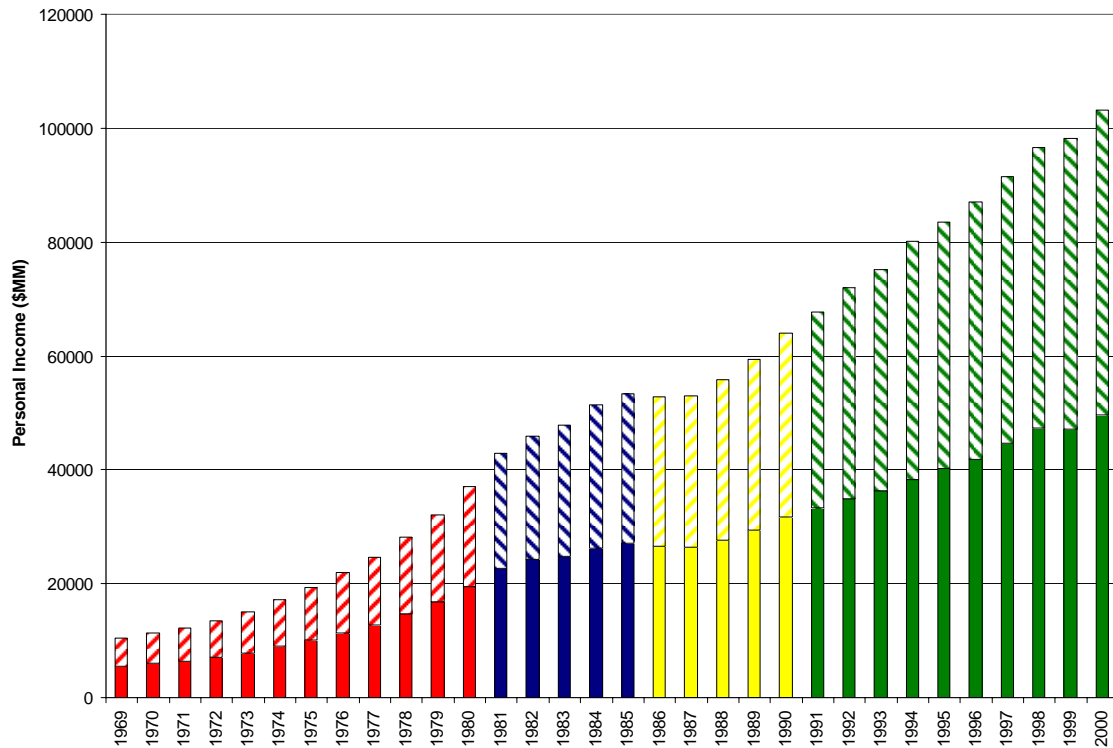
<sup>2</sup> Over the study period, the parishes located on the northern shore of Lake Pontchartrain, especially St. Tammany parish, became more like suburban extensions of New Orleans and popular residences for many oil and gas executives. St. Tammany and the other north shore parishes, however, are regarded as non-coastal here. The New Orleans metropolitan area is the only one that is split between the two groups.

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.<sup>3</sup> 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.

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<sup>3</sup> A pioneering effort to delineate and analyze the coastal economy by Lamar Jones and J. Randolph Rice (1972) for the purposes of coastal zone management reasoned that the coastal economy should extend up the Mississippi River to Baton Rouge, and the Highway 190 bridge that marks the limit of navigation for ocean going ships.



Source: USDOC, BEA. 2006b.

**Figure 9: Personal Income for Coastal (solid) and Non-Coastal (striped) Parishes, 1969-2000.**

The bulk of the analysis starts in 1969 and ends with the year 2000. The beginning date was decided partly by data availability. Detailed data for parishes is limited prior to that date. Although shorter than historians might prefer, this period includes the major perturbations of the petroleum market and includes more than enough variation in oil and gas activity to explore the economic response to it. The period is divided into four sub-periods, 1969 to 1980, 1981 to 1985, 1986 to 1990, and 1990 to 2000, delineated by the regional business cycle.

## 5. CHANGES IN PER CAPITA PERSONAL INCOME

Income per person is a good measurement of an economy's performance for regional analysis. Conceptually, it reflects more directly than production or employment measures how the fruits of economic activity change through time in a given area or jurisdiction. Personal income includes all residents' wages, salaries, proprietors' and partners' earnings but excludes corporate profits and business taxes. Personal income is more comprehensive and more indicative of changes in individual economic well being than employment and earnings measures. It includes dividends and interest paid to individuals residing in the region of tabulation and it also includes income individuals receive from transfer payments, such as social insurance or public assistance, that are unrelated to participation in the labor force. Corporate profits and taxes, which are not included in personal income data, are not necessarily or usually received or paid in areas where the activity generating them occurs.

For capital-intensive industries such as oil and gas, measures based on personal income can be significantly different than measures based on production or employment. Robert Barro and Xavier Sala-I-Martin (1991, pages 140-141), for example, found that:

The correlation of the log of per capita GSP with the share of GSP originating in crude oil and natural gas rises because of the oil shocks from 0.1 in 1973 to 0.4 in 1975 and 0.7 in 1981 and then falls with the decline in oil prices to 0.1 in 1986. In contrast, the correlation of the log of per capita personal income with the share of personal income originating in oil and natural gas is  $-0.3$  in 1970 and  $0.0$  in 1980. These divergent patterns reflect the distinction between the location of oil and gas facilities and the ownership of these facilities.

Personal income is especially useful for local or regional analysis because it is available by residency but is not as subject to omissions to prevent disclosure of proprietary information within smaller areas, as frequently is the case with production and employment data.<sup>4</sup> Since location of residence and location of employment may differ considerably, ambiguities and anomalies occur with respect to individual parish jurisdictions, but the use of comparisons within and among multi-county or parish groups and metropolitan areas can identify or avoid many of them.

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<sup>4</sup> Disclosure problems do, however, affect the measurement of some of the components of the change in per capita personal income, which are used in the analysis. See, (Garnick and Friedenber, 1982; Perloff, 1957; Latzko, 2001; Carlino and Mills, 1987; Terkla, 1991) for discussion of the concept and its use in regional analysis.

**Table 1**

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

<b>Parish/ SMSA Parish</b>	<b>1959/ 1950<sup>a</sup></b>	<b>1968/ 1959</b>	<b>1980/ 1969</b>	<b>1985/ 1981</b>	<b>1990/ 1986</b>	<b>2000/ 1991</b>	<b>2000/ 1969</b>	<b>2000/ 1950</b>
U.S. <sup>b</sup>	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 <sup>c d</sup>	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
<b>Coastal Parishes</b>								
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
<b>Coastal SMSAs/Parish</b>								
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	

<sup>a</sup> Data for 1959/50 and 1968/59 are taken from (Scott et al., 1971, pages 98-164).

<sup>b</sup> Data for U.S and these states during the 1950-59 and 1959-68 are from (USDOC, BEA. 2006a).

<sup>c</sup> 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.

<sup>d</sup> 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**

<b>Parish/ SMSA</b>	<b>1959/ 1950</b>	<b>1968/ 1959</b>	<b>1980/ 1969</b>	<b>1985/ 1981</b>	<b>1990/ 1986</b>	<b>2000/ 1991</b>	<b>2000/ 1969</b>	<b>2000/ 1950</b>
<b>Non-Coastal Parishes and SMSAs</b>								
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
Avoyelles	3.8	4.1	9.2	5.0	5.3	4.1	6.8	6.3
Beauregard	3.8	2.0	10.1	4.3	4.9	3.0	6.6	6.0
Bienville	5.4	3.2	9.3	4.8	3.5	3.5	6.6	6.6
Caldwell	2.0	4.9	9.9	5.7	4.9	3.5	6.9	6.0
Catahoula	1.9	7.0	9.4	2.9	5.5	3.8	7.0	6.2
Claiborne	4.3	4.9	9.0	4.4	3.3	3.8	6.4	6.1
Concordia	3.9	2.1	8.9	2.8	5.1	2.9	5.7	5.7
De Soto	4.3	3.5	9.5	3.6	3.2	4.6	6.6	6.5
East Carroll	8.6	3.8	9.0	4.2	5.3	1.6	6.3	6.2
East Feliciana	4.1	4.7	10.7	5.0	5.1	4.0	7.3	7.0
Evangeline	1.7	5.3	10.4	3.4	4.5	3.3	6.6	6.0
Franklin	2.8	8.0	8.9	5.1	6.4	3.3	7.0	6.2
Grant	5.4	3.5	8.5	4.9	5.0	4.1	6.5	6.5
Iberville	4.9	8.0	9.9	3.6	5.3	2.7	6.4	6.4
Jackson	4.8	3.4	8.8	5.0	3.5	5.1	7.0	6.4
LaSalle	3.4	1.8	9.9	6.6	4.7	2.8	6.6	5.6
Lincoln	5.1	4.0	9.2	5.3	5.3	3.0	6.6	6.3
Livingston	n.a	n.a	9.0	3.4	4.9	4.3	6.5	n.a
Madison	5.0	4.4	7.4	4.8	7.5	2.3	6.2	6.0
Morehouse	2.4	4.8	9.1	3.9	5.1	3.1	6.6	5.6
Natchitoches	4.6	5.7	8.5	5.8	4.1	4.0	6.7	6.6
Pointe Coupee	3.2	5.2	9.8	4.5	4.3	4.8	7.1	6.9
Rapides	4.1	4.6	8.7	5.6	5.2	4.2	6.8	6.3
Red River	3.7	6.8	7.8	4.9	4.6	3.0	5.9	6.4
Richland	3.0	7.3	9.9	3.8	4.8	3.1	6.8	6.4
Sabine	5.4	2.9	8.3	6.4	5.5	3.3	6.8	6.5
St. Helena	3.6	6.8	9.6	6.2	4.7	4.5	7.1	6.7
St. Landry	3.5	5.3	10.7	3.1	5.4	3.3	7.0	6.5
Tangipahoa	4.3	3.9	9.4	4.6	4.2	4.0	6.8	6.4
Tensas	6.2	4.9	8.5	3.5	6.1	3.1	7.1	6.8
Union	3.6	3.7	8.6	5.5	4.3	3.8	6.7	6.6
Vernon	4.9	12.8	5.2	7.3	3.7	3.1	5.4	6.8
Washington	4.6	2.1	8.6	4.2	3.7	3.5	6.1	5.5

**Table 1 (continued)**

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

<b>Parish/ SMSA</b>	<b>1959/ 1950</b>	<b>1968/ 1959</b>	<b>1980/ 1969</b>	<b>1985/ 1981</b>	<b>1990/ 1986</b>	<b>2000/ 1991</b>	<b>2000/ 1969</b>	<b>2000/ 1950</b>
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
<b>Non-Coastal</b>	3.0	4.3	9.1	4.7	4.7	3.6	6.5	
<b>SMSA Parish</b>								
Baton Rouge	3.5	4.0						
East Baton Rouge			9.4	3.8	5.3	3.4	6.4	
Monroe	3.3	4.9						
Ouachita			9.1	5.1	4.7	4.1	6.8	
Shreveport	2.1	3.9						
Bossier			8.7	5.3	5.1	3.7	6.6	
Caddo			8.8	4.7	4.2	3.6	6.3	

Table 1 summarizes the change in per capita personal income (PCPI) from 1950 to 2000. Over the 1950 to 2000 period, each of the Gulf Coast States grew more rapidly than the nation as a whole, although the differences were minimal in the case of the two most energy intensive states, Louisiana and Texas, and small for Florida. Mississippi and Alabama, starting from the lowest absolute level, grew at rates significantly faster than the nation. Over the first three sub-periods, Louisiana grew faster but during the next three sub-periods grew at a slower rate than the nation. Rates of growth for the individual states varied in the sub-periods, which we have defined to coincide with trends in the energy markets, but the variation even in the 1969-1980 “boom” and 1981-1985 “bust” are not as great as the conventional wisdom may assume.

The averages for Louisiana’s coastal and non-coastal parishes are not comparable to the state averages, since they are simply un-weighted averages of each parish or, for the earliest two periods, SMSAs, for which data are available. Since some parishes such as Orleans are much more populous and during some periods have grown relatively slowly, the unweighted average for both groups of parishes can exceed the state average. Over the longer term, considered as either 1950 to 2000 or 1969 to 2000, there is remarkable little difference in the growth rates for the two groups—one-tenth of one percent in both cases.

Regional differences in the change in per capita personal income over time have been studied for a number of reasons. One focus has been whether personal income was becoming more or less uniformly or equally distributed among the states or regions of the country. Another focus has been concerns about the economic future of regions as

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; Blanchard and Katz, 1992; Eff, 1999; Garofalo and Yamarik, 1999; Kim, 1998; Michener and McLean, 1999; Roback, 1988).

From the 1940s to the 1980s there was a regional convergence in the average level of per capita personal income between the “richer” northeast, Midwest, and Far West states and the “poorer” south, plains, and mountain regions. In the 1980s, the convergence appeared to have stopped when incomes in the “richer” New England and Mideast states began again to increase relative to the national mean. Other higher-than-the-average regions, such the Far West and Great Lakes states, continued to approach the national average with the Great Lakes states falling slightly below the average in the mid-1980s.

A similar divergence took place among the “poorer” states when convergence stopped and stabilized in the mid-1980s. The data are outlined in Table 2 and illustrated year-by-year in Figures 10 and 11. Figure 10 illustrates the converging and diverging regional trends for the eight major census regions for years in the 1969 to 2000 period that will be used in the study.

Broad regional groupings can conceal important differences at the state level. Table 3 and Figure 11 show the trends in per capita income relative to the U.S. average for the five GOM states for the same periods. Texas and Louisiana, the principal oil and gas producers, show significant gains during the 1969 to 1980 boom, but ten years later had fallen back close to their 1969 levels. Mississippi and Alabama exhibit slower but steadier growth, while Florida hovered very close to the national average throughout the period.



**Table 2**

**Per Capita Personal Income as a Percentage of U.S. Average  
for Selected Years**

<b>Year</b>	<b>1970</b>	<b>1980</b>	<b>1981</b>	<b>1985</b>	<b>1986</b>	<b>1990</b>	<b>1991</b>	<b>2000</b>	<b>2003</b>
<b>Region</b>									
Far West	115	115	114	111	111	109	108	107	105
Midwest	113	108	108	111	112	116	116	114	114
New England	109	105	105	112	115	117	115	121	121
Great Lakes	103	102	100	99	99	98	98	99	99
Plains	94	94	96	96	95	93	94	95	97
Rocky Mtns	92	97	97	92	91	89	90	95	96
Southwest	88	96	98	95	91	88	88	91	90
Southeast	81	86	86	87	88	89	89	89	90

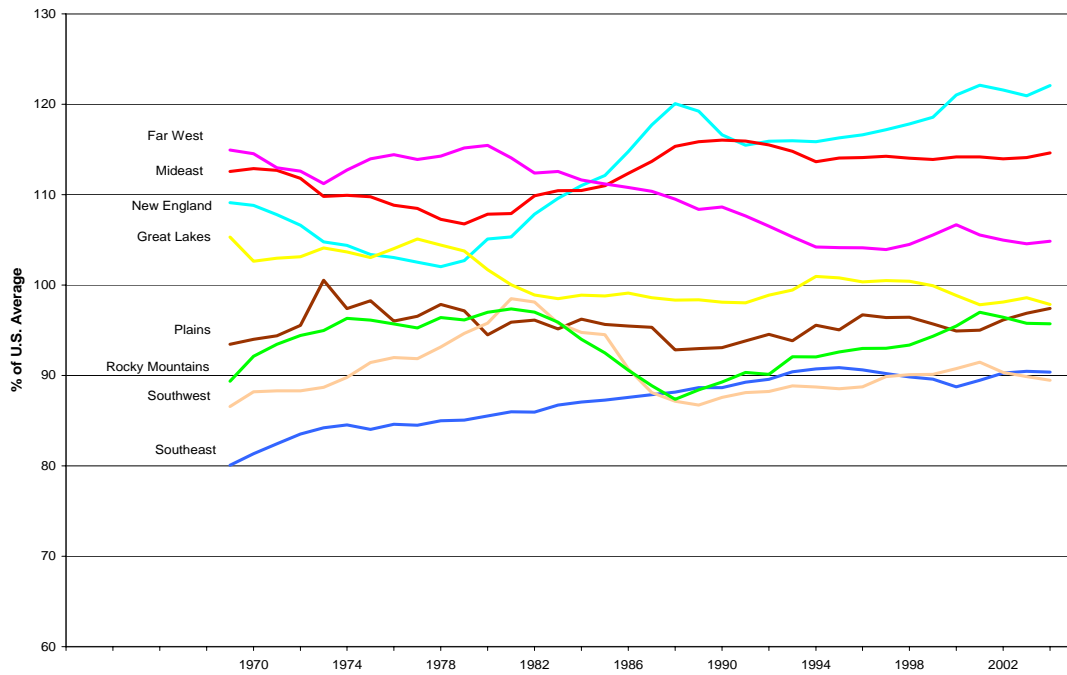
Source: Calculated by author from BEA regional economic data

**Table 3**

**Per Capita Personal Income in Gulf of Mexico States as a Percentage of the U.S.  
Average for Selected Years**

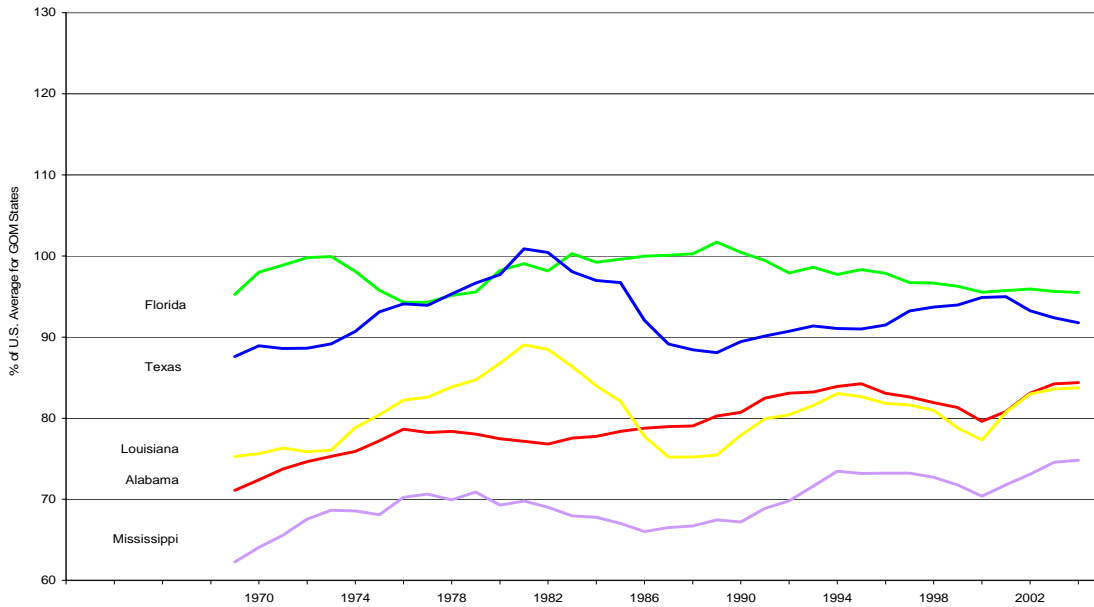
<b>Year</b>	<b>1969</b>	<b>1980</b>	<b>1981</b>	<b>1985</b>	<b>1986</b>	<b>1990</b>	<b>1991</b>	<b>2000</b>	<b>2003</b>
<b>State</b>									
Texas	88	98	101	97	92	89	90	95	92
Louisiana	75	87	89	82	78	78	80	77	83
Mississippi	64	69	70	67	66	67	76	70	74
Alabama	72	77	77	78	79	81	82	80	84
Florida	98	98	99	100	100	100	99	96	95

Source: Calculated by author from BEA regional economic data, 1969 taken from (Garnick and Friedenber, 1982)



Source: USDOC, BEA. 2006a.

Figure 10: Comparison of PCPI for Various Regions as a Percent of U.S. Average.



Source: USDOC, BEA. 2006a.

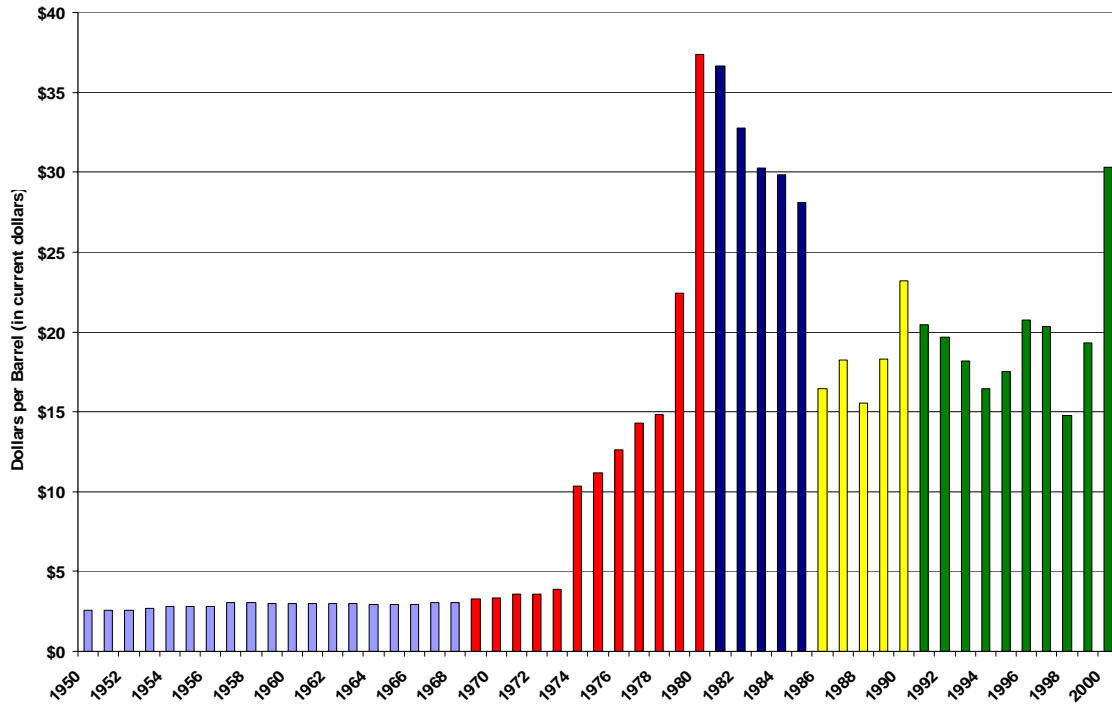
Figure 11: Comparison of PCPI for GOM States as a Percent of U.S. Average.

## **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 began with the 1974 Arab oil embargo and the gradual decontrol of U.S. prices in the 1980s.

Figure 12 shows the posted price of the common benchmark West Texas Intermediate oil for the period 1950 to 2000. If the figure were extended to the left to 1940 there would be little change in the stability of the 1950 to 1973 period. However, after the OAPEC embargo was announced in the Fall of 1973 the changes are dramatic, especially in the perspective with the near stability during the preceding decades. In retrospect, it seems clear that much of the oscillation in oil and gas prices and the inefficiencies that resulted were the consequence of counter-productive measures to respond to the perceived crisis kicked off by the Arab oil embargo in the early 1970s followed by the Iran/Iraq war at the decade’s conclusion.



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

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

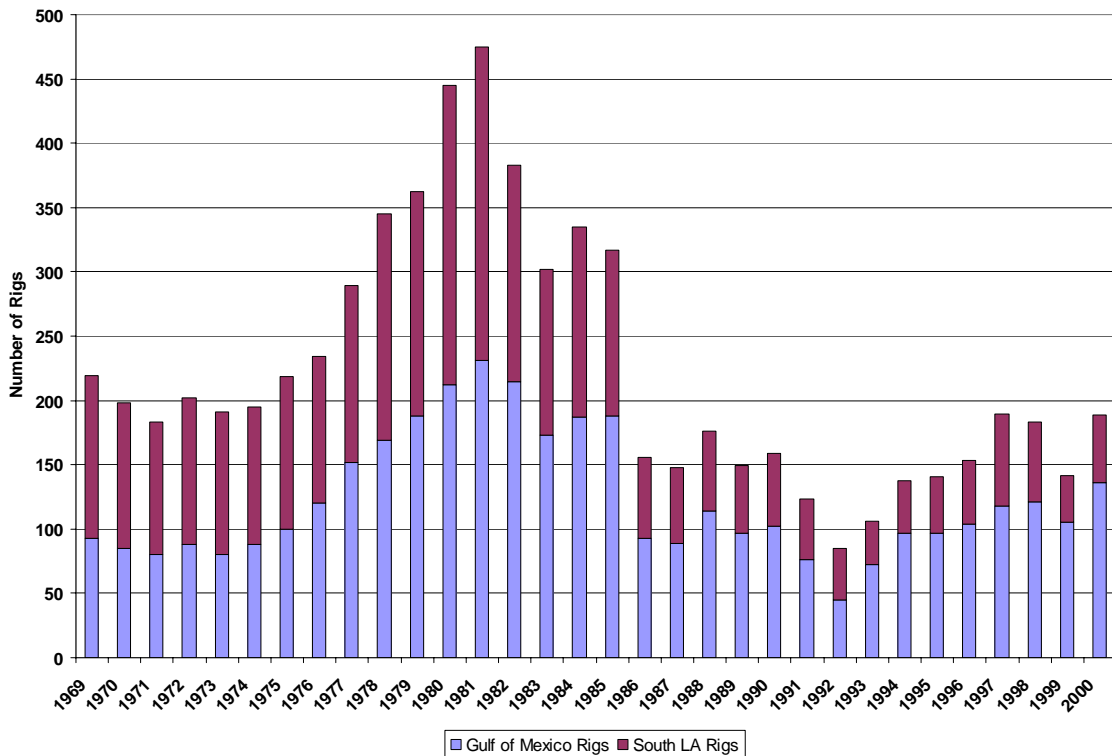
Unrealistic expectations engendered by these events on the part of energy producers and consumers (and analysts), however, was probably the more consequential result: namely, the widespread assumption during the 1974 to 1980 run-up that price increases and shortages would continue unabated into the future.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

Two stages to the erosion of expectations about the energy future can be seen in Figure 12. Uncertainty about the consequences of war between two major Persian Gulf exporters, complicated by inefficient and distorting domestic allocation regulations in the U.S. and uncertainty and speculation in international markets, almost doubled oil prices between 1979 and 1980 from a little over \$20 per barrel to about \$40 per barrel. Then, for the following five years, prices declined in small, steady increments as the combined forces of: 1) more efficient energy use and conservation, 2) the extraordinary ability and willingness of Saudi Arabia to either make up oil market shortfalls or restrict its own exports to stabilize (high) prices, and 3) increased oil supplies from non Persian Gulf suppliers became apparent.

Slowly eroding oil prices slipped into a full collapse in 1985, when Saudi Arabia decided to support them no longer. Saudi Arabia had cut back its own exports from about 8 million barrels a day to 2 million barrels a day over the preceding ten years and finally decided “enough was enough” and began to return shut-in capacity to production.

The effects on the oil and gas industries along the Gulf coast were by any measure dramatic. Most directly, as illustrated in Figures 13a and 13b, efforts to find and develop oil and gas reserves also collapsed. The number of drilling rigs active in South Louisiana and in offshore waters fell from its 1981 peak of nearly 500 to 150 by 1986. On the offshore alone the decline was from a 1981 peak of about 250 to about 100 rigs in 1986.

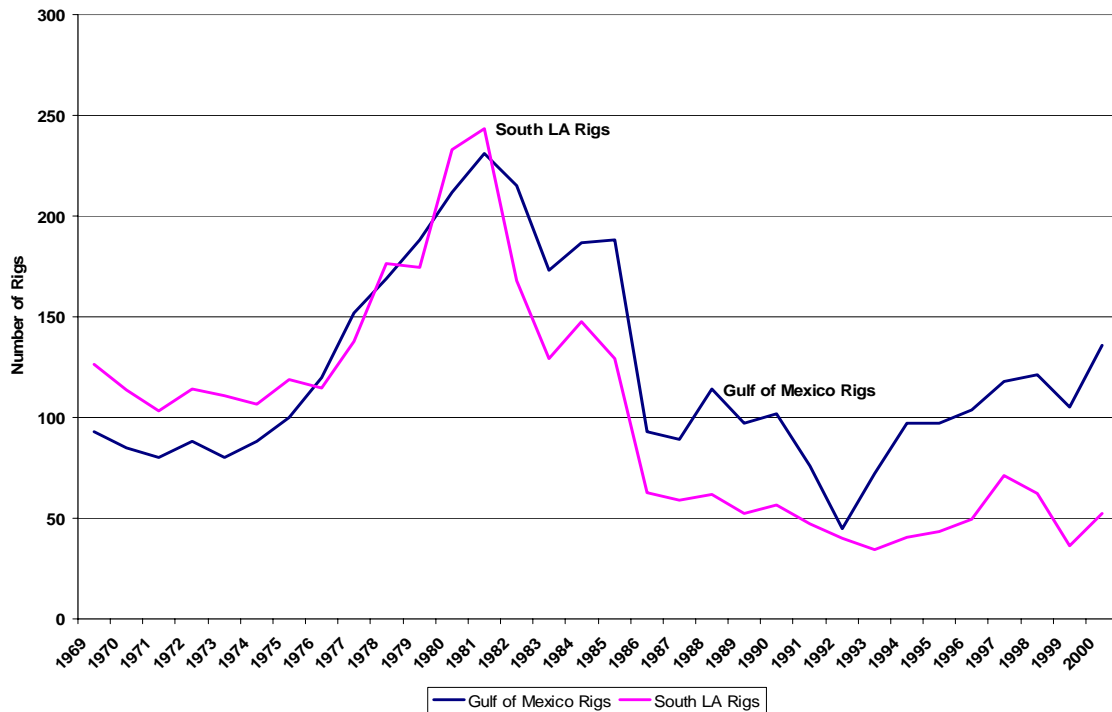
The “unstacked” depiction in Figure 13b compares rigs in South Louisiana (roughly the same area we designate as Coastal Louisiana) with rigs active on the federal OCS. The two series track each other closely as the rig count increased from about 100 at the time of the 1974 embargo to around 230 at the 1981 price peak. Rigs steadily left both areas until the early 1990s with the OCS maintaining about 50 or so more active rigs than Coastal Louisiana. After bottoming out, the number of rigs on the OCS increased with the exploration and development of deeper water, reaching nearly 150 by the end of the decade. In South Louisiana the rig count remained close to its minimal value of 50 throughout the period.



**Source: Louisiana Energy Indicators & Baker Hughes.**

**Figure 13a: Rig Count - Gulf of Mexico and South Louisiana, Bar Graph.**

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 and South Louisiana, Line Graph.

The perturbations in oil and gas markets that occurred in the 1970s and 1980s and their repercussions on offshore activity provide an unusual context of “extremes” to study the effects of offshore oil and gas development on coastal economic activity and communities. Usually changes in economic and social data are more gradual and moderate. Using extremes in empirical economics has both analytical advantages and disadvantages. Larger and more frequent variations in data make it easier to be confident in differentiating causal relationships from stochastic ones. However, if as in our case, we are interested in understanding the longer-term, cumulative effects of industry activity on coastal economies and communities, extreme variation may confuse short-run adjustments to unusual events with long-term trends or relationships.

## 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:

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

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.<sup>5</sup>
- 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 income supplements not dependent upon participation in the labor force.
- Property income (FI/E) comes from payments to individuals from interest, rent, and dividends.

The technique is useful because it divides the change in per capita personal income into components that are conceptually distinct and correspond to factors that are easily intelligible to non-specialists. In the following three sections, this technique is used to describe and to compare the economic performance of :

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<sup>5</sup> For individual parishes and metropolitan areas, industries are defined using the very broad one-digit standard industrial classification (SIC) that only divides economic activity into 13 broad sectors; agriculture, mining, construction, manufacturing, etc. For states, in addition to the one-digit classification, a two-digit SIC classification is available that distinguishes industries or sectors into a finer division; for example, it distinguishes petroleum refining from the chemical industry within the manufacturing sector, but does not distinguish chemical plants that make commodity chemicals such as chlorine from plants that manufacture pharmaceuticals.

- 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 at a rate of 6.4 percent—the lowest rate among the five Gulf States. Alabama and Mississippi grew at nearly 6.8 percent, Texas at 6.7 percent, and Louisiana at nearly 6.5 percent. Comparing growth rates of the Gulf Coast states to the distribution for all 50 states, only Alabama and Mississippi are more than one standard deviation from (above) the U.S. mean.

Florida is a large energy consumer, but it has vigorously resisted oil and gas development in offshore areas as environmentally and economically threatening to its economic foundation of tourism, recreation and retirement. The manufacturing sector of Alabama's economy has evolved from heavy primary industries like iron and steel to automobiles. A small but growing natural gas based energy sector has developed in Mobile Bay. Mississippi is the most rural of the five states, but gambling, manufacturing, and tourism have helped it grow in the later part of the period. It has a refining and chemical complex in Pascagoula. Louisiana is the most energy intensive state from both a production and consumption basis, but also has considerable manufacturing activity and, in New Orleans, a well developed tourism base. Texas is also an energy intensive state with Houston becoming the national center for oil and gas headquarters and technology. It has a more diversified economy than the other states, including a growing high-tech sector in Dallas, Austin and San Antonio.

**Table 4**

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

<b>Period: 1969- 2000 STATE</b>	<b>ΔPersonal Income/Person</b>	<b>Industry mix</b>	<b>Relative wage effect</b>	<b>Labor Force Participation</b>	<b>Property Income Ratio</b>	<b>Transfer Payment Ratio</b>
<b>1969-1980</b>						
Alabama	8.79	7.09	0.38	0.68	-0.27	0.92
Florida	8.33	6.59	0.01	0.86	-0.13	0.99
Louisiana	9.26	7.24	0.53	1.31	-0.24	0.41
Mississippi	8.97	7.20	0.15	0.63	-0.48	1.47
Texas	8.99	6.99	0.61	1.21	-0.31	0.49
Mean	8.87	7.02	0.34	0.94	-0.29	0.86
<b>1981-1985</b>						
Alabama	5.75	4.41	-0.03	0.96	0.05	0.36
Florida	5.54	4.56	-0.41	1.33	-0.21	0.27
Louisiana	3.81	3.86	-0.91	-0.73	0.36	1.22
Mississippi	4.63	4.60	-0.49	-0.04	0.16	0.40
Texas	4.59	3.86	-0.08	-0.06	0.18	0.69
Mean	4.86	4.26	-0.38	0.29	0.11	0.59
<b>1986-1900</b>						
Alabama	5.13	3.52	-0.17	1.53	0.11	0.15
Florida	4.74	3.51	0.56	0.11	-0.08	0.64
Louisiana	4.68	3.85	-1.01	1.69	0.18	-0.03
Mississippi	5.00	3.67	-0.20	1.37	0.07	0.09
Texas	4.07	3.66	-0.69	1.08	0.32	-0.30
Mean	4.72	3.64	-0.30	1.15	0.12	0.11
<b>1991-2000</b>						
Alabama	3.71	3.36	-0.72	0.79	-0.01	0.28
Florida	3.66	3.65	-0.47	0.94	0.16	-0.62
Louisiana	3.73	3.39	-0.77	1.03	0.03	0.05
Mississippi	4.27	3.31	-0.14	1.03	0.02	0.05
Texas	4.57	3.74	0.50	0.71	0.43	-0.81
Mean	3.88	3.50	-0.40	0.90	0.13	-0.21
<b>1969-2000</b>						
Alabama	6.77	5.44	-0.06	0.88	-0.07	0.57
Florida	6.42	5.37	-0.14	0.81	-0.09	0.48
Louisiana	6.49	5.42	-0.31	0.91	-0.03	0.50
Mississippi	6.79	5.56	-0.10	0.75	-0.17	0.77
Texas	6.66	5.42	0.31	0.79	0.06	0.07
Mean	6.63	5.44	-0.06	0.83	-0.06	0.48

Table 4 shows the growth rates per capita personal income and their components for the Gulf Coast states for the four divisions of the study period. Tables showing the same information for all the states and their respective “z-scores” are included in Appendix B.

### **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 force participation in Louisiana and Texas were large in absolute terms and in comparison to the other Gulf States, this was a period of fairly rapid growth in labor force participation nationwide, and the contribution in neither state was more than one standard deviation above the mean.

### **8.2. Eroding then Collapsing Energy Prices and Expectations: 1981-1985**

After oil prices peaked in 1980 and then slid steadily downward until their collapse in 1985, Louisiana went from the third fastest to the third slowest growing state in the nation as measured in terms of the growth per capita personal income. Only Wyoming and Montana grew more slowly. In Louisiana, the contribution from relative wages went from a sizeable plus to a sizeable minus, with only two other energy-producing states, Wyoming and Oklahoma, experiencing larger relative declines. Louisiana's energy misfortunes were partly offset by rising transfer payments, which accounted for one-third of the state's growth in per capita personal income during the energy bust. The effects of the energy turmoil on the other Gulf Coast states—even Texas—were not distinguishable from the rest of the nation in the sense that in none did the growth rate for PCPI fall beyond one standard deviation below the mean for all states. The contribution from an improved industry mix, however, did fall in Texas to almost the same level as in Louisiana—a drop of nearly 50 percent. Although relative wages and participation also fell in Texas, the decline exceeded a standard deviation only in the case of participation.

### **8.3. Recovery from the Oil Price Collapse: 1986-1990**

Despite the severity of falling oil prices and evaporation of expectations of a permanent energy boom, remarkably few differences are apparent between the two energy intensive

states and the other Gulf Coast states or between the energy intensive states and the other 48 states during the post-collapse, “recovery” period from 1986 to 1990. Per capita personal income growth rates for all of the Gulf Coast states lie within one standard deviation of the national mean, with Louisiana and Florida almost exactly at the mean and Texas the only Gulf Coast state below the mean. Among the components of growth, Louisiana’s improvement in industry mix and retreating relative wages fell beyond the one standard deviation boundary, as did Florida’s (positive) transfer payments and (negative) labor force participation. The only other outlier was Texas’ property income. It might be argued that the severity of Louisiana’s decline should have produced a bigger bounce in the recovery, but the state’s growth rate was only slightly below Florida’s and above that of Texas. Growth rates in all of the Gulf Coast states except Texas exceeded the nation’s average.

#### **8.4. The Energy Lull: 1991-2000**

The expectation of the early 1980s that oil and gas prices would continue to escalate toward, and beyond, the \$50 per barrel landmark were not realized. Within three years of the 1985 collapse, oil was selling for \$15 a barrel and bounced between \$15 and \$25 for the rest of the 1980s and 1990s. In real or inflation corrected terms, energy prices fell and consumers needed to spend progressively less of their incomes for energy, especially for gasoline.

The resulting plateau in oil and gas activity is reflected in the rig count data shown in Figures 13a and 13b. OCS activity, however, increased steadily driven by major improvements in technologies for finding (3D seismic) and developing (non-fixed platforms and sub-sea completions) resources, especially in very deep water as reflected in the oil and gas production levels shown in Figures 4a and 4b.

The effects of this lull in the oil and gas sector on the economies of the Gulf Coast states were mixed and difficult to interpret.

Texas grew the fastest during the period and was the only Gulf Coast state whose growth rate was one standard deviation above the national mean. Texas also was the only Gulf Coast state that grew faster in the 1990s (4.57 percent per year) than during the previous 1986-1990 “recovery” (4.07 percent per year). The only states that grew faster than Texas were Colorado and Massachusetts. This suggests it may have been “new economy” or “high tech” rather than energy providing the momentum for Texas’ surge. This conjecture is supported by the fact that the improvement in Texas’ industry mix was exceeded only by Nevada.

Florida’s improvement in industry mix ranked fourth in the nation, while the contribution from industry mix improvements in the other three Gulf Coast states was below the national mean.

Relative wage growth in Texas was positive and one standard deviation above the mean but negative and below the national average in the other four Gulf Coast states. Per capita

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 pattern of growth was consistent with the economic stimulation coming from the energy boom. Similarly, both Louisiana and Texas were harder hit by the collapse of energy prices in the subsequent 1981 to 1985 cycle and the end of expectations that energy prices would continue to increase. The negative effects were less intense in Texas, however, with the drop in PCPI less than (or within) a standard deviation from the mean for all states.

During the two cycles that comprise the second half of the study period, however, there is little to distinguish the energy intensive states from their neighbors—or from the other 45 states of the union. Texas seems to have benefited more from the “high tech” and “new economy” trends and the differences among the five states were not consistently related to energy developments. Other economic factors offer more cogent explanations of differences in PCPI growth along the Gulf Coast than do energy effects.

State-versus-state comparisons usually are not the best framework for regional economic analysis. States are political and administrative units and not economic entities. They are often of quite disparate sizes, geographical configurations, and even cultures. In large states, state-level data may “average out” or otherwise mask effects that are most relevant to the question or issue at hand.

The next two sections apply the same methodology used in the previous section to compare changes in per capita personal income of the coastal and non-coastal parishes in Louisiana and the coastal and non-coastal Metropolitan Statistical Areas (MSAs).

## 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**

<b>Period Group</b>	<b>Δ Personal Income/ Person</b>	<b>Improved Industry Mix</b>	<b>Relative Wage Effect</b>	<b>Labor Force Participation</b>	<b>Transfer Payment Ratio</b>	<b>Property Income Ratio</b>
<b>1969-1980</b>						
Coastal	10.04	7.49	0.60	2.38	0.04	-0.51
Non-C	9.13	6.91	0.45	0.51	1.75	-0.68
<b>1981-1985</b>						
Coastal	2.41	3.49	-1.31	-2.59	2.01	0.42
Non-C	4.67	4.46	-1.04	-0.03	0.91	0.27
<b>1986-1990</b>						
Coastal	4.63	3.70	-1.33	2.21	0.22	0.03
Non-C	4.74	3.87	-0.62	1.24	-0.01	0.22
<b>1991-2000</b>						
Coastal	3.62	3.54	-1.05	0.88	0.33	0.01
Non-C	3.62	3.45	-0.91	1.12	0.22	-0.19
<b>1969-2000</b>						
Coastal	6.47	5.43	-0.54	0.99	0.72	-0.16
Non-C	6.61	5.45	-0.30	0.87	0.89	-0.20

Tables A1a to A5b in Appendix A show growth rates and “z scores” for each parish for the same periods. Because the discussion is fairly detailed, a standardized format is used to discuss the pattern of differences among parishes in each of the four time periods. To further help the reader follow the analysis, a chart comparing changes observed during the period being discussed and the previous period is inserted between the discussions of each period—except the first. Following the detailed comparisons of the components of changes in per capita personal income in the next two sections, there is a brief discussion of net migration at the parish level for the same time periods.

## **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 personal income in the coastal parishes (about a quarter of the total growth rate) but only 0.5 percentage points, or about six percent, in non-coastal parishes.
- Conversely, changes in transfer payments contributed 1.75 percentage points to the mean growth rate in non-coastal parishes (about 19 percent) but only 0.04 percentage points or 0.4 percent, in coastal parishes.

Thus, increases in relative regional wages, and, especially, increased labor force participation increased growth rates in coastal parishes, while transfer payments offset much more modest regional wage and labor force participation gains in non-coastal parishes.

**9.1.2. Per Capita Personal Income (PCPI):** The 10.06 percent per year average rate of growth for the coastal parishes was about one point faster in absolute terms and ten percent higher in relative terms than the average 9.14 rate for the non-coastal parishes. The range between the fastest and slowest growing parishes was wider among the non-coastal parishes with a low of 5.2 percent in Vernon Parish and a high of 10.9 in both St. Landry and West Feliciana Parishes. Seven of the coastal parishes, 37 percent, had growth rates at least one standard deviation (a “z score” of 1.0) faster than the mean compared to only seven percent of the non-coastal parishes. Among the coastal parishes, Lafayette and Iberia, both important staging and management areas for offshore

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<sup>6</sup> 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:** The contribution of changes in relative wages, keeping the industry mix constant, to the growth of per capita personal income was much smaller than the industry mix change, but the contribution was slightly larger in the coastal parishes, 0.6 percentage points compared to 0.4 respectively. The percentage of parishes exceeding the state average by one standard deviation was about 24 percent for the coastal parishes compared to 11 percent for the non-coastal group. The contribution of wages was at least one standard deviation below the state average for 12 percent of the coastal group, compared to only 23 percent of the coastal parishes.

**9.1.5. Labor Force Participation:** Changes in the percentage of the population working was a major contributor to the change in per capita income in the coastal parishes, accounting for about a quarter of the total change, but changes in labor force participation made a smaller contribution in the non-coastal parishes—only about six percent. The contribution of increased labor force participation exceeded one standard deviation in 47 percent of the coastal parishes compared to only six percent of non-coastal parishes. In the coastal parishes of Cameron, Iberia, Lafayette, Plaquemines, St. Charles, St. James, and Terrebonne, at least 30 percent of the growth in PCPI was attributable to increased labor force participation.

**9.1.6. Transfer Payments:** Changes in transfer payments, such as social insurance, public assistance and various private income supplements not dependent on participation in the labor force were a much larger contributor in non-coastal parishes than in coastal parishes. They accounted for 1.75 points of the growth rate in non-coastal parishes, about 20 percent, compared to only 0.04 points or 0.2 percent of the total change in the coastal parishes.

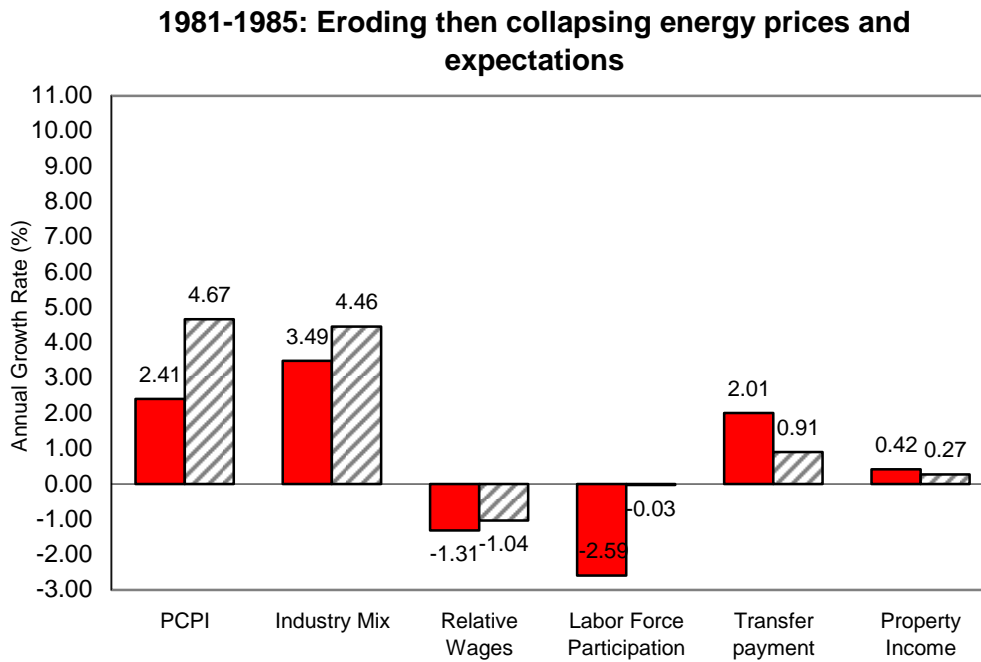
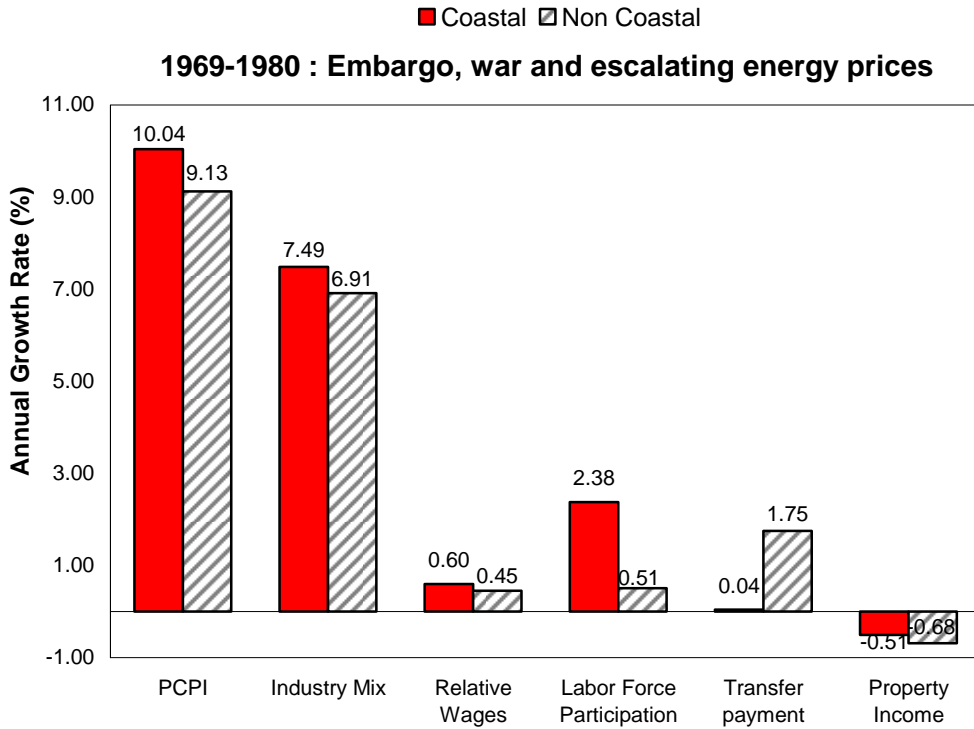
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<sup>6</sup> Data are not available for parishes in which more than 10 percent of the labor force works in another parish. For such parishes the contribution of industry mix, relative wages, and labor force participation, cannot be calculated. Two parishes, St. James and St. John the Baptist, in the coastal group and 10 parishes in the non-coastal group are in this category. The number of parishes for which data is available is used as the base of the percentage calculations, rather than the total number of parishes, for these components.



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.



Source: USDOC, BEA. 2006b.

Figure 14: Change in PCPI - 1969-1980 Compared to 1981-1985.

## **9.2. 1981-1985: Eroding then Collapsing Energy Prices and Expectations**

**9.2.1. Period Summary:** The collapse in world oil prices reduced growth rates in both coastal and non-coastal parishes, but the drop was almost twice as deep in the coastal parishes. The growth rate of per capita personal income was below the mean for the state by more than one standard deviation in 53 percent of the coastal parishes but none of the non-coastal parishes. Of the coastal Parishes, only Orleans, Jefferson, and St. James had growth rates above the state mean and none came close to the one standard deviation interval.

The positive contribution of a better industry mix continued but declined in both groups of parishes. It added 3.5 percentage points to the growth of PCPI in coastal parishes and 4.5 percent in the non-coastal group.

The contributions of the other factors more or less reversed the relationships evident in the previous period of quite rapid growth.

- Wages declined relative to the nation in both groups of parishes, subtracting 1.31 points from the growth of PCPI in coastal parishes and 1.04 in the non-coastal parishes. Among the coastal parishes, only Orleans experienced a small relative improvement.
- Decreased labor force participation was a major factor holding down growth in coastal parishes, making a negative contribution of -2.59 percentage points relative to an overall rate of only 2.56. The decline in non-coastal parishes was very small, only -0.03 compared to an overall rate of 4.7.
- Transfer payments constituted a major source of support for personal income in the coastal parishes, adding 2.01 percentage points (79 percent) to the overall growth rate of 2.56. In non-coastal parishes the contribution of transfer payments was only about 20 percent of the total.

Thus, falling relative wages and decreased labor force participation were principal avenues of adjustment to falling world oil prices in coastal parishes, their negative effects on income modified significantly by increases in transfer payments. In non-coastal parishes both the negative and positive contributors were much weaker and the overall growth rate was not quite twice as fast as it was in the coastal parishes.

**9.2.2. PCPI:** Growth rate of personal income fell sharply in both groups, by about half in the non-coastal parishes and by three-quarters in the coastal parishes. The annual growth rate in Iberia, St. Charles, and Terrebonne parishes fell from more than 10 percent to less than one percent. Only Jefferson, Orleans and St. James parishes grew at a rate faster than four percent. None of the coastal parishes attained a growth rate of five percent. In contrast, 32 (71 percent) of the non-coastal parishes grew faster than four percent per

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.

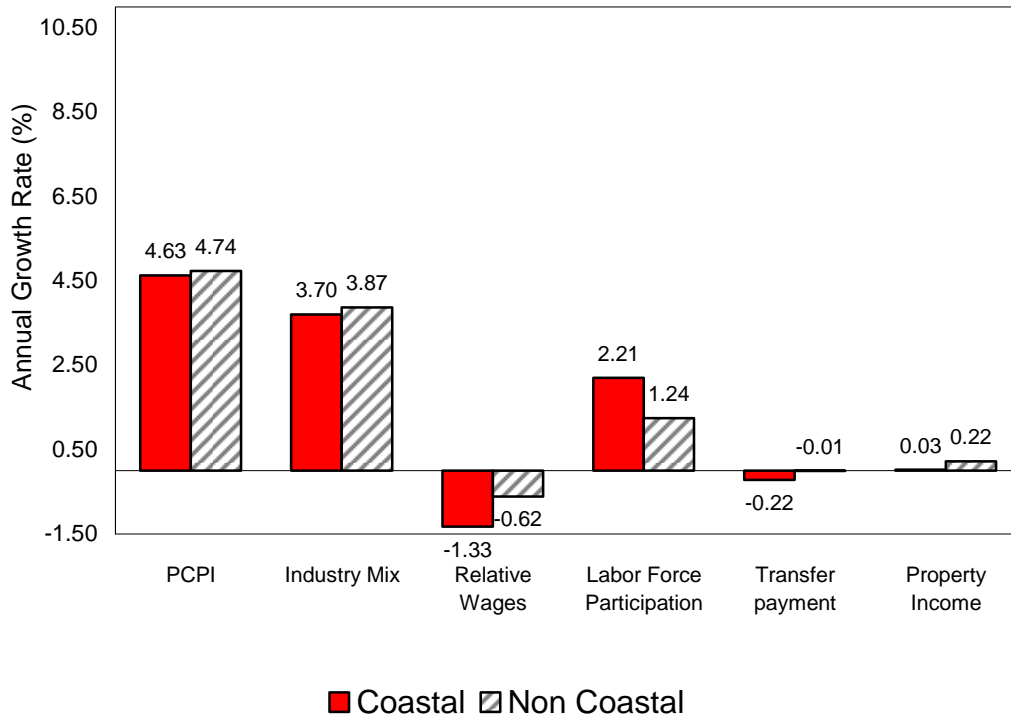
In non-coastal parishes it was not a major contributor to change, subtracting only 0.03 points from the total growth rate. In about 20 percent of the non-coastal parishes, the contribution of increased labor force participation was more than one standard deviation above the state average.

**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

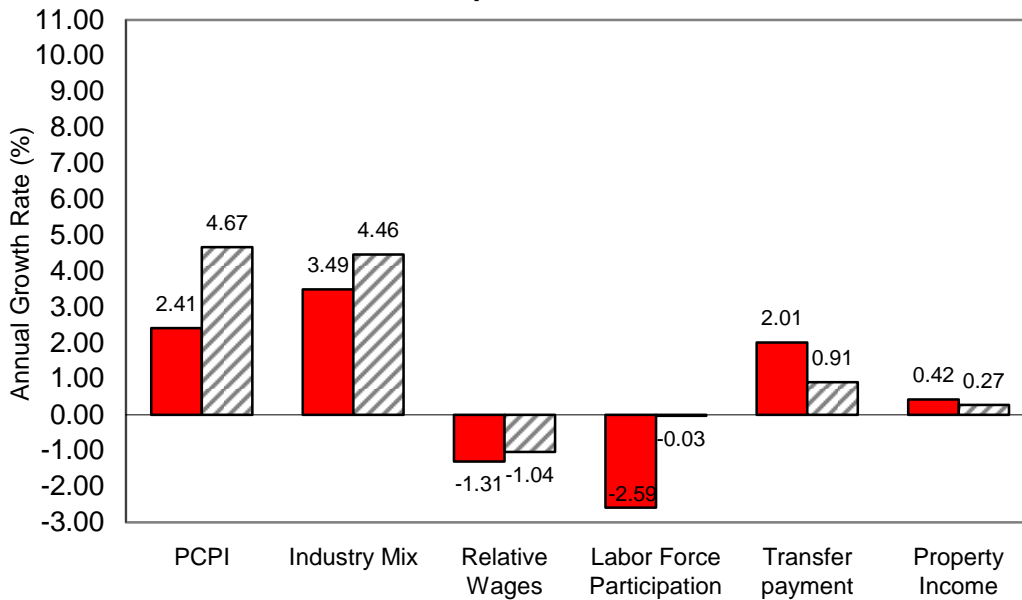
(Assumption, Calcasieu, Cameron, Iberia, Plaquemines, St. Bernard, St. Charles, St. Mary, and Terrebonne) without the contribution of transfer payments the rate of growth of per capital personal income would have been negative as opposed to modestly positive. Among the 45 non-coastal parishes without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

**1986-1990: Recovery from the oil price collapse**



**1981-1985: Eroding then collapsing energy prices and expectations**



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 effects of a “recovery” from the collapse of world oil prices are apparent only among the coastal parishes where the overall growth rate increased by about 90 percent from the depressed level of the previous period. Coastal parishes regained parity with non-coastal parishes, but both groups grew at only about half as fast as they had during the boom of the 1970s.

Industry mix’s contribution to growth fell below levels exhibited during the bust for non-coastal parishes, 3.87 down from 4.46, but improved to a slightly faster rate in coastal parishes, 3.70 up from 3.49.

Wages continued to be a modest negative relative to the rest of the nation in both groups of parishes, but subtracting twice as much from the PCPI growth rate in coastal parishes, -1.33 compared to -0.62 for the non-coastal group.

Increased participation in the labor force was the principal evidence of recovery among the coastal parishes, adding 2.2 percentage points to the 4.6 overall growth rate. The contribution in non-coastal parishes was positive but only half as large.

Transfer payments did not make nearly as large a contribution as they did in the previous two periods for either group of counties. The contribution was negative but negligible in non-coastal parishes and slightly larger and negative in the coastal parishes.

Property income made a small positive contribution in the non-coastal parishes and a negligible but positive contribution in the non-coastal parishes.

**9.3.2. PCPI:** The overall growth rate of per capita personal income recovered in coastal parishes to rough equality with non-coastal parishes, but at a level less than half the oil and gas boom of the 1970s. The growth rate in the non-coastal parishes was only 0.07 percentage points faster than the level maintained during the previous 1980-1985 period of collapsing oil prices (4.74 compared to 4.67).

**9.3.3. Industry Mix:** Although the contribution of an improved industry mix during the “recovery” exceeded the contribution recorded during the preceding “bust” in 10 of the 17 coastal parishes for which data are available, only in two parishes was the rate of improvement more than one standard deviation above the state average. The absolute gain was 0.17 percentage points, or less than 5 percent. The average contribution of the industry mix fell among non-coastal parishes from an average of 4.46 to 3.87, a drop of about 13 percent.

**9.3.4. Relative Wage Effects:** Wages continued to fall relative to the nation in both groups of counties, but the relative decline averaged a little more than twice as deep in the coastal parishes. The contribution was negative in all of the coastal parishes, although it was more than one standard deviation in 15 of the 18 coastal parishes for which data are available.

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.

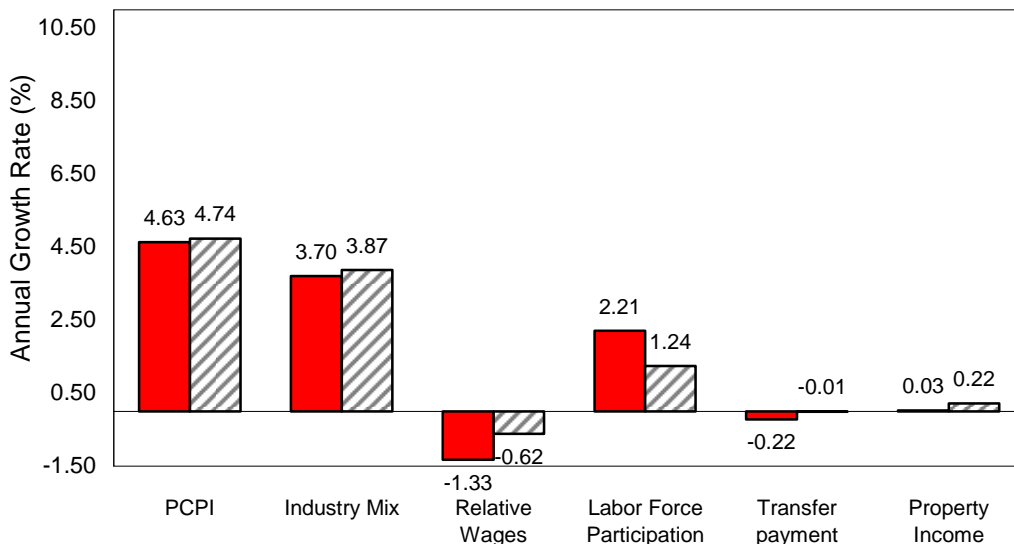
**9.3.7. Property Income:** As in the previous periods, property income was a minor contributor in both coastal and non-coastal parishes.

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.

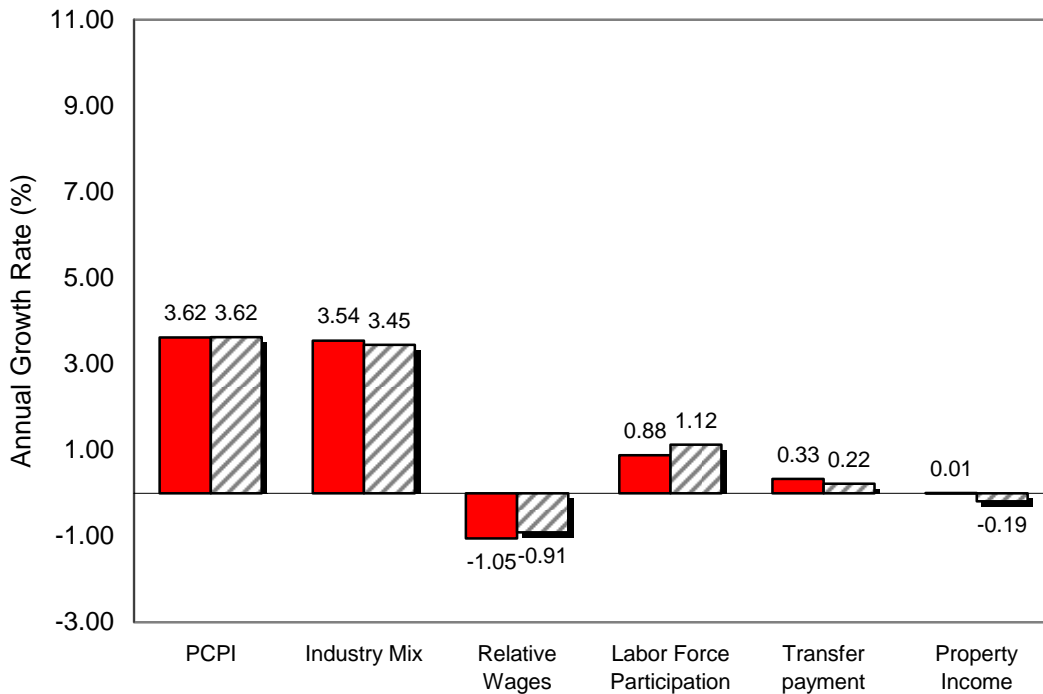


■ Coastal □ Non Coastal

**1986-1990: Recovery from the oil price collapse**



**1991-2000 : the Energy Lull**



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 total 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.

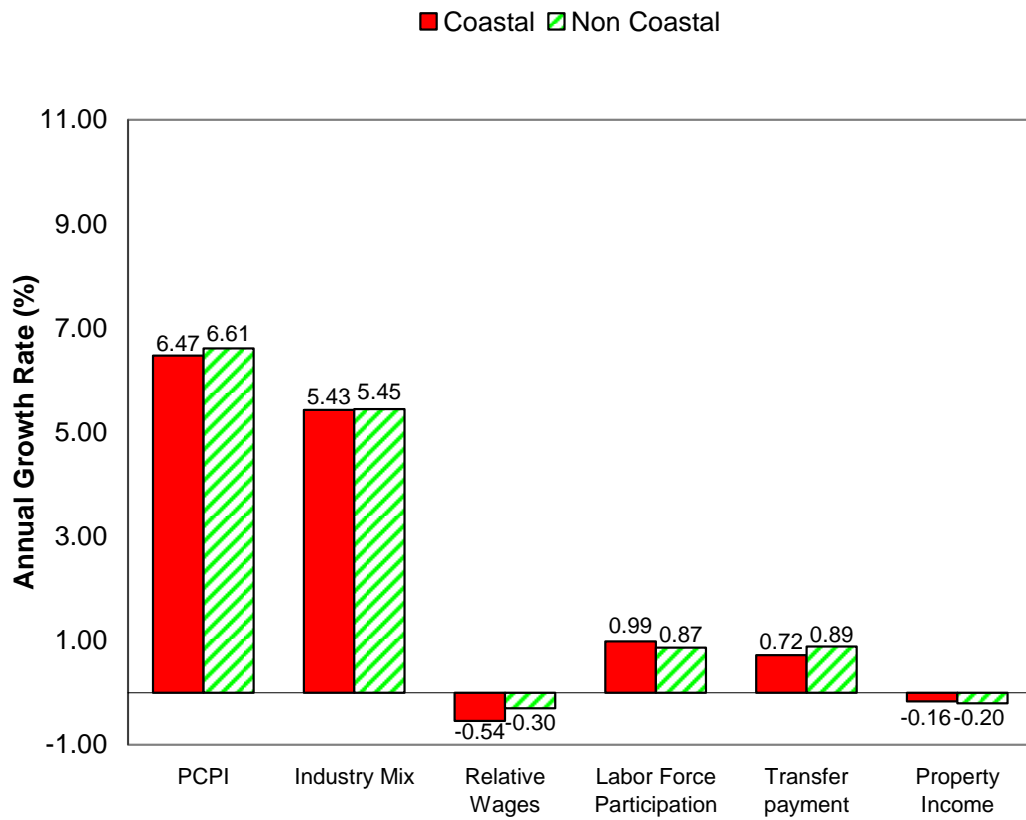
In relative terms, the negative contribution of relative wages was a little less than a third for the coastal parishes and about a quarter for the non-coastal parishes.

**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 only slightly lower—1.12 percentage points compared to 1.24.

**9.4.6. Transfer Payments:** The contribution from transfer payments was modestly larger in both groups of parishes, 0.33 percentage points in coastal parishes and 0.22 in non-coastal parishes.

**9.4.7. Property Income:** A negligible 0.01 percentage point positive contribution in coastal parishes and a small -0.19 negative percentage point contribution in non-coastal parishes.



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**

<b>Period: 1969-2000</b>	<b>ΔPersonal Income/ Person</b>	<b>Industry Mix</b>	<b>Relative Wage Effect</b>	<b>Labor Force Participation</b>	<b>Property Income Ratio</b>	<b>Transfer Payment Ratio</b>
<b>MSA</b>						
<b>1969-2000</b>						
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 <sup>7</sup>	6.80	5.33	-0.06	0.84	-0.06	0.74
Baton Rouge	6.54	n.a.	n.a.	n.a.	-0.08	0.36
Monroe	6.76	5.37	-0.19	1.18	0.02	0.38
Shreveprt/Boss.	6.38	5.36	-0.13	0.83	-0.03	0.35
Coastal Average	6.59	5.37	-0.37	1.25	-0.08	0.42
Non-Coast Ave	6.62	5.35	-0.13	0.95	-0.04	0.46
<b>1969-1980</b>						
Coastal MSAs						
Houma/Thib.	10.63	7.50	0.86	2.59	-0.48	0.16
Lafayette	11.49	7.80	0.77	3.47	-0.58	0.03
Lake Charles	9.58	7.00	1.05	1.99	-0.25	-0.22
New Orleans	8.78	6.87	0.55	1.30	-0.02	0.07
Non-Coastal						
Alexandria	8.71	6.81	1.03	-0.03	-0.16	1.06
Baton Rouge	9.54	6.84	0.82	1.79	-0.19	0.29
Monroe	9.01	6.79	0.67	0.78	-0.21	0.97
Shreveprt/Boss.	8.80	7.12	0.55	1.25	-0.11	-0.02
Coastal Average	10.12	7.29	0.81	2.34	-0.33	0.01
Non-Coast Ave	9.02	6.89	0.77	0.95	-0.17	0.58
<b>1981-1985</b>						
Coastal MSAs						
Houma/Thib.	1.05	3.30	-2.25	-2.74	0.45	2.29
Lafayette	2.18	3.10	-0.80	-1.29	0.23	0.93
Lake Charles	1.72	3.62	-2.04	-2.80	0.53	2.41
New Orleans	4.01	3.67	-0.45	-0.77	0.43	1.13
Non-Coastal						
Alexandria	5.56	4.48	-0.44	0.66	0.48	0.37
Baton Rouge	3.80	4.09	-1.37	-0.17	0.21	1.03
Monroe	5.17	4.22	-0.63	1.06	0.42	0.11
Shreveprt/Boss	4.71	3.97	-0.69	-0.07	0.11	1.39
Coastal Average	2.24	3.42	-1.39	-1.90	0.41	1.69
Non-Coast Ave	4.81	4.19	-0.78	0.37	0.31	0.73

<sup>7</sup> Data for Alexandria are not reported for all periods. Data for Rapides Parish which are nearly identical are used.

**Table 6 (continued)**

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

<b>Period 1969-2000: MSA</b>	<b>ΔPersonal Income/ Person</b>	<b>Industry Mix</b>	<b>Relative Wage Effect</b>	<b>Labor Force Participation</b>	<b>Property Income Ratio</b>	<b>Transfer Payment Ratio</b>
<b>1986-1990</b>						
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
<b>1991-2000</b>						
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

The Houma/Thibodaux MSA was the hardest hit by the 1981-1985 collapse, with its PCPI growth rate falling from over 10 percent to barely above one percent for the period. PCPI growth rates in the Lafayette and Lake Charles MSAs were also very low, but the New Orleans MSA, the least energy intensive coastal MSA, grew at about the same rate as the non-coastal MSAs. The contribution from increased transfer payments mitigated the decline, equaling more than twice the overall growth rate in Houma/Thibodaux and exceeding the overall growth rate in Lake Charles. In Lafayette, however, the contribution from transfer payments, while accounting for almost half the overall growth rate, was smaller than in New Orleans, Baton Rouge, or the Shreveport/Bossier City MSAs.

During the 1986 to 1990 recovery from the oil price collapse, Lake Charles was the fastest-growing MSA (5.60 percent) attributable largely to a very high contribution from increased labor force participation—3.24 percent that accounted for 58 percent of the

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 than 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 otherwise 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**

	<b>1970-1980</b>	<b>1981-1985</b>	<b>1986-1990</b>	<b>1991-2000</b>	<b>1970-2000</b>
Coastal	242,713	69,223	-107,912	71,782	293,731
% change from respective base year	<i>13.6</i>	<i>1.9</i>	<i>-4.7</i>	<i>3.1</i>	<i>15.4</i>
Orleans parish	-34,157	-9,209	-54,268	-11,513	-116,999
% change from respective base year	<i>-5.8</i>	<i>-1.9</i>	<i>-8.8</i>	<i>-1.6</i>	<i>-18.4</i>
Coastal—Orleans removed	276,870	78,432	-53,644	83,295	410,730
% change from respective base year	<i>23.1</i>	<i>3.3</i>	<i>-3.2</i>	<i>4.7</i>	<i>32.2</i>
Non-Coastal	330,179	115,789	-81,021	178,254	556,485
% change from respective base year	<i>17.7</i>	<i>3.9</i>	<i>-3.9</i>	<i>7.4</i>	<i>29.2</i>
Statewide	572,892	185,012	-188,933	250,036	850,216
% change from respective base year	<i>15.7</i>	<i>2.9</i>	<i>-4.3</i>	<i>5.4</i>	<i>22.4</i>

The comparisons show roughly the same pattern over the four periods. Orleans parish declined in population by about 6 percent during the 1970 to 1980 boom and the increase in population of coastal parishes was about 14 percent if Orleans were to be included and 23 percent if it was not. During the collapse and slow recovery of the 1980s, like the coastal parishes and the rest of the state, Orleans parish lost population, but not as fast as the coastal parishes. During the energy lull of the 1990s, Orleans lost population, but much more slowly.

The changes in the population of Orleans parish are a component of the spread of its population into the surrounding suburbs and bedroom communities, a phenomena occurring in most of the nation's metropolitan areas during this time period. Trying to isolate or account for this phenomena in an attempt to measure the impact of the oil and gas cycle is complicated by the fact that although Jefferson, St. Bernard and Plaquemines parishes are included in the coastal group, St. Tammany parish which became an important residence for New Orleans commuters during the study period is in the non-coastal group.

A more detailed study could sort population effects out more precisely, but it would extend the analysis beyond the resources available for this study. However, the more general conclusion is strengthened by the more limited comparison presented here. No differential effects are apparent in the coastal parishes compared to non-coastal parishes when changes in population are considered. That is, like changes in personal income, population does not show a differential impact from development of the offshore oil and gas reserves in coastal Louisiana. Over the entire 1970 to 2000 period, coastal parishes without Orleans parish included in the group grew by 32.2 percent while non-coastal parishes grew by 29.2 percent.

## 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
Coastal	50,226	-49,142	-205,992	-114,551	-322,413
Orleans parish	-71,721	-31,058	-73,907	-67,589	-256,017
Coastal—Orleans removed	121,947	-18,084	-132,085	-46,962	-66,396
Non-Coastal	149,876	806	-177,982	-14,440	-48,585
Statewide	200,102	-48,336	-383,974	-128,991	-370,998

Of this total, 256,017 or 69 percent were attributable to net migration from Orleans Parish. If net migration from the coastal parishes calculated without Orleans Parish is compared to the non-coastal parishes, the coastal group accounts for 17.9 percent of the net migration and the non-coastal parishes account for the 13.1 percent.

## 11.3. Comparing Growth Rates of Population with Growth Rates of Per Capita Personal Income

As Paul Gottlieb and other regional analysts have pointed out, however, the association between improvements in economic well being as measured by increasing per capita personal income and an increasing population is weak. In a recent working paper on the relationship between the two in the 100 largest metropolitan areas, Gottlieb says: “Statistical analysis reveals a very weak positive relationship between per capita income and population growth. Not only is this relationship weak, if Austin, Texas, and Las

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 growth may have important negative as well as positive impacts. Congestion, pressure on public facilities and service, increased labor supply eroding wages, and similar effects can create both public and private disamenities in jurisdictions experiencing rapid population growth. The quality of life in a jurisdiction with an increasing level of per capita personal income with a stable population may be better than in a jurisdiction with the same rate of growth of per capita personal income but a growing population—with the associated disamenities. Many factors can affect the rate of change of both per capita income and the population, but as a generalization, more wealth without more congestion (or other population-related disamenities) seems preferable to more wealth but more population- or congestion-related disamenities.

Gottlieb suggests a four-part classification dependent on the relationship of the growth in population and growth in per capita personal income to their respective medians. In order of their presumed correlation with changes in the quality of life, he labels jurisdictions in which: 1) PCPI grows faster than the median, but population more slowly than the median as “wealth-builders;” 2) jurisdictions in which PCPI grows faster than the median but so does population as “high growth traditional;” 3) those in which both PCPI and population grow more slowly than the median as “low growth traditional;” and, 4) jurisdictions in which PCPI grows more slowly than the median but population grows faster than the median as “population magnets.”

Figures 18 through 22 use a four-quadrant scatter diagram based on these criteria to compare the coastal and non-coastal parishes in Louisiana. Statewide median rates of growth of population and of PCPI are used to define the quadrants. Separate diagrams are constructed for the entire 1969-2000 period and each of the four sub-periods used in the study. Table 9 gives the specific classification for each parish for each of the periods shown.

Figure 18 describes the distribution during the embargo/war boom period from 1969 to 1980. Almost 85 percent of the coastal parishes experienced PCPI growth at a rate above the state median, but only five, or 26 percent, also were “wealth builders” whose populations grew more slowly than the state median. Only a third of the non-coastal parishes experienced faster-than-the-median rates of growth in PCPI, but about 18 percent of the non-coastal parishes were “wealth builders.” Forty percent of the non-coastal parishes were in the “low growth traditional” classification as opposed to only one, or 5.3 percent, of the coastal parishes—but the laggard is Orleans, the state’s most populous parish.

**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
<b>Non-Coastal Parishes</b>										
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	8.06	HGT	3.99	LGT	5.52	LGT	3.36	LGT	6.07
Caldwell	HGT	8.69	WB	5.78	WB	6.81	PM	2.73	HGT	6.50
Catahoula	LGT	9.01	LGT	3.02	WB	7.08	WB	4.01	WB	7.22
Claiborne	LGT	8.94	WB	4.18	PM	3.93	WB	4.05	LGT	6.42
Concordia	LGT	8.70	LGT	2.72	WB	7.17	LGT	3.14	LGT	6.03
De Soto	HGT	8.42	PM	3.02	LGT	4.45	WB	4.43	HGT	6.28
East Baton Rouge	PM	7.11	PM	3.09	HGT	5.59	PM	2.78	PM	5.22
East Carroll	LGT	9.82	WB	5.11	WB	7.77	LGT	1.72	LGT	7.30
East Feliciana	WB	10.17	HGT	4.39	HGT	5.88	HGT	3.13	HGT	6.70
Evangeline	WB	9.94	PM	2.76	LGT	5.61	PM	2.73	WB	6.27
Franklin	LGT	8.85	WB	5.57	WB	7.66	LGT	3.70	WB	7.43
Grant	PM	6.73	HGT	4.22	HGT	5.32	HGT	3.44	PM	5.53
Iberville	WB	9.54	LGT	3.58	WB	6.25	PM	2.03	LGT	6.14
Jackson	LGT	8.07	WB	5.17	LGT	4.95	WB	5.24	WB	7.10
La Salle	HGT	7.81	WB	7.80	LGT	7.67	LGT	2.35	LGT	6.36
Lincoln	PM	7.71	HGT	4.51	HGT	5.65	LGT	3.02	PM	5.84
Livingston	PM	4.82	PM	0.84	HGT	4.87	HGT	1.76	PM	3.55
Madison	LGT	7.14	WB	5.90	WB	10.27	PM	1.25	LGT	6.52
Morehouse	LGT	8.54	LGT	4.26	WB	6.15	LGT	3.34	LGT	6.73
Natchitoches	PM	7.46	WB	6.17	LGT	5.28	HGT	3.47	WB	6.35
Ouachita	PM	7.38	HGT	4.59	PM	5.30	WB	3.86	HGT	5.98
Pointe Coupee	WB	9.04	WB	4.48	LGT	5.52	WB	4.68	WB	6.95
Rapides	PM	7.55	WB	5.47	HGT	5.98	WB	4.58	WB	6.58
Red River	PM	6.69	WB	5.83	LGT	6.30	LGT	2.74	LGT	5.78
Richland	WB	9.81	LGT	3.65	WB	6.42	LGT	2.80	WB	6.92
Sabine	PM	5.73	WB	6.40	WB	7.80	PM	2.83	HGT	6.07
St. Helena	WB	9.59	HGT	5.47	PM	5.29	HGT	4.07	WB	6.88
St. Landry	WB	10.45	LGT	2.78	WB	6.84	PM	2.44	WB	6.71
St. Tammany	PM	4.27	PM	0.78	HGT	4.52	HGT	1.80	HGT	3.26
Tangipahoa	HGT	7.61	HGT	3.00	PM	5.03	HGT	2.51	HGT	5.45
Tensas	LGT	9.72	LGT	4.27	WB	8.06	LGT	3.67	WB	8.31
Union	PM	7.42	HGT	4.86	LGT	5.65	HGT	2.86	HGT	6.01
Vernon	LGT	5.08	HGT	5.61	PM	3.70	LGT	5.11	LGT	5.46
Washington	LGT	8.18	PM	3.55	LGT	4.85	LGT	3.24	LGT	5.97
Webster	LGT	7.46	WB	4.80	LGT	4.39	LGT	3.47	LGT	5.88
West Baton Rouge	HGT	9.02	HGT	3.72	HGT	6.22	HGT	3.14	HGT	6.32
West Carroll	LGT	9.13	WB	5.37	PM	5.28	WB	3.67	WB	7.04
West Feliciana	WB	10.21	HGT	5.68	PM	2.39	HGT	3.89	HGT	6.25
Winn	LGT	8.34	WB	6.17	HGT	5.45	LGT	2.50	LGT	6.15

Type of Change:

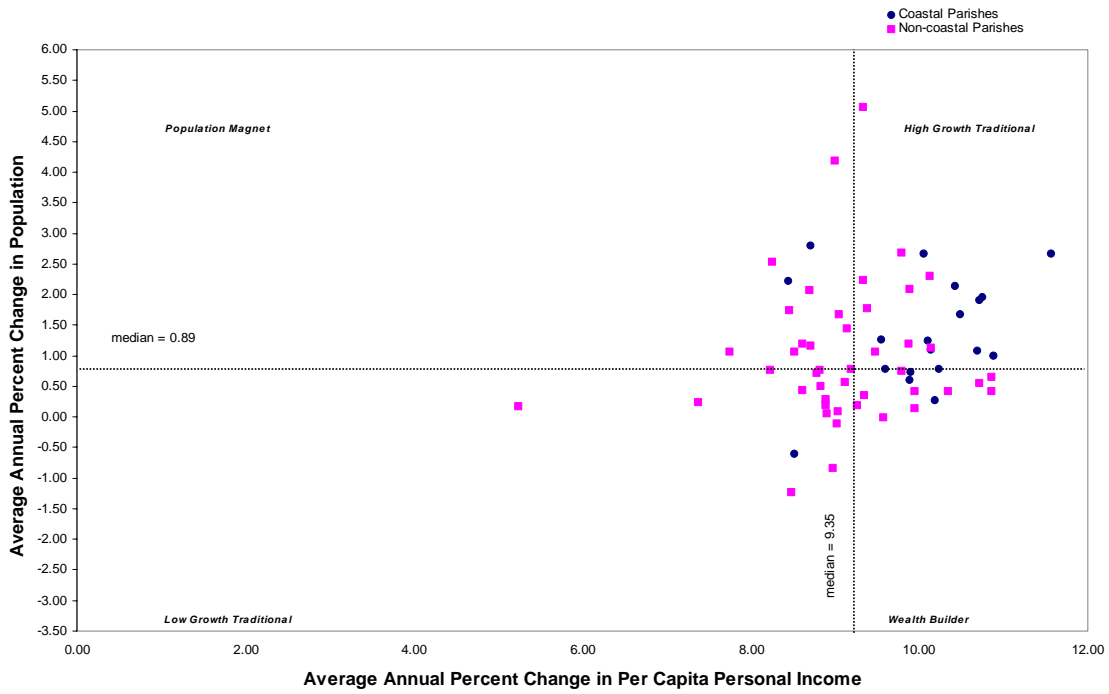
- WB = Wealth Builder, growth rate of personal income per capita above Louisiana median, growth rate of population below median
- PM = Population Magnet, growth rate of personal income per capita below LA median, growth rate of population above the median.
- HGT = High Growth Traditional, growth rate of personal income per capita and growth rate of population above the LA median.
- LGT = Low Growth Traditional, growth rate of personal income per capita and growth rate of population both below LA median.
- Index = Growth rate of personal income per capita minus growth rate of population.

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."

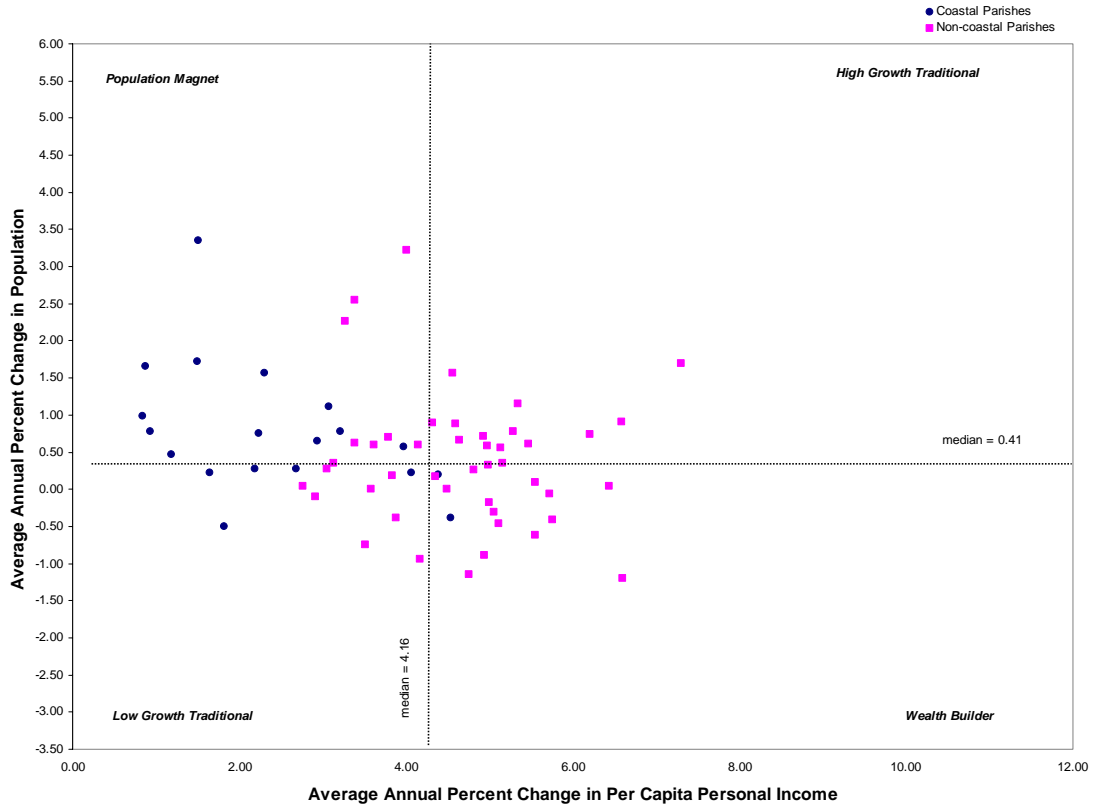
The reversal of fortune that accompanied the 1981-1985 "collapse" is clearly illustrated in Figure 19. Nearly 90 percent of the coastal parishes slid into either the "low growth traditional" or "population magnet" categories as growth in PCPI fell below the state median rate. Only two coastal parishes, 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.

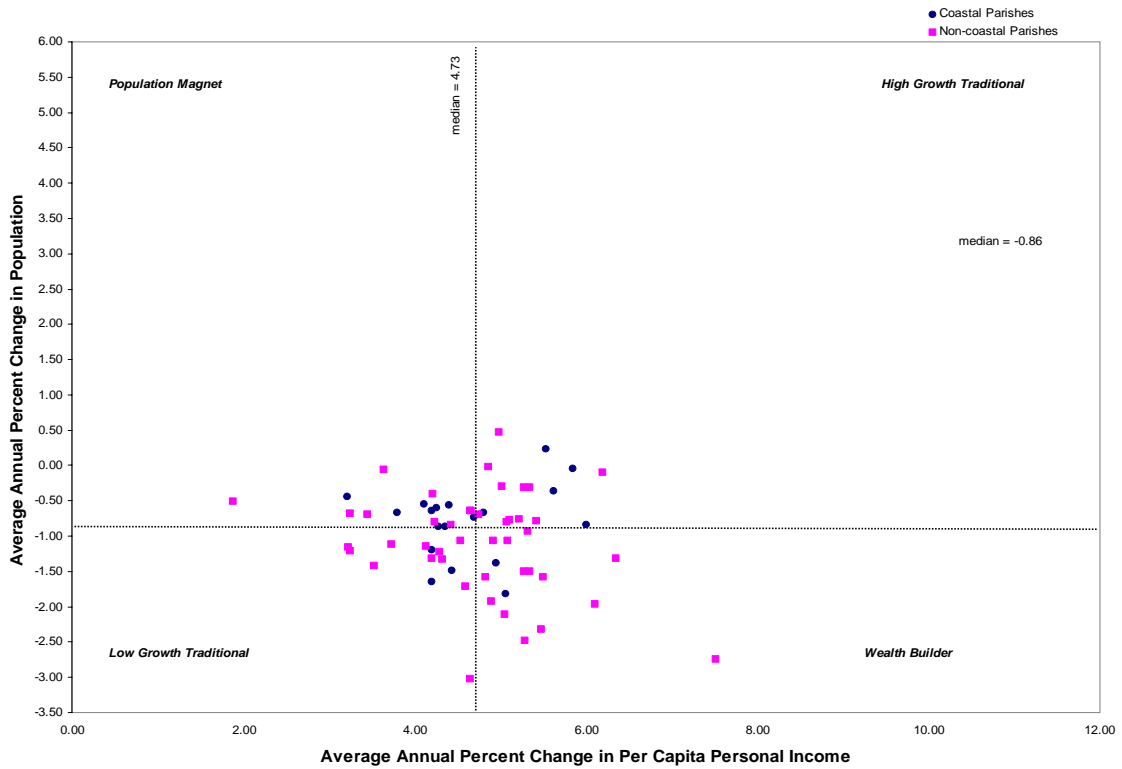
Looking at the 1969 to 2000 period as a whole, in Figure 22, there is very little difference among the parishes and no apparent relationship between rates of growth in population and in PCPI. This pattern is consistent with the analysis of states, parishes and SMSAs in the previous section and supports 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.



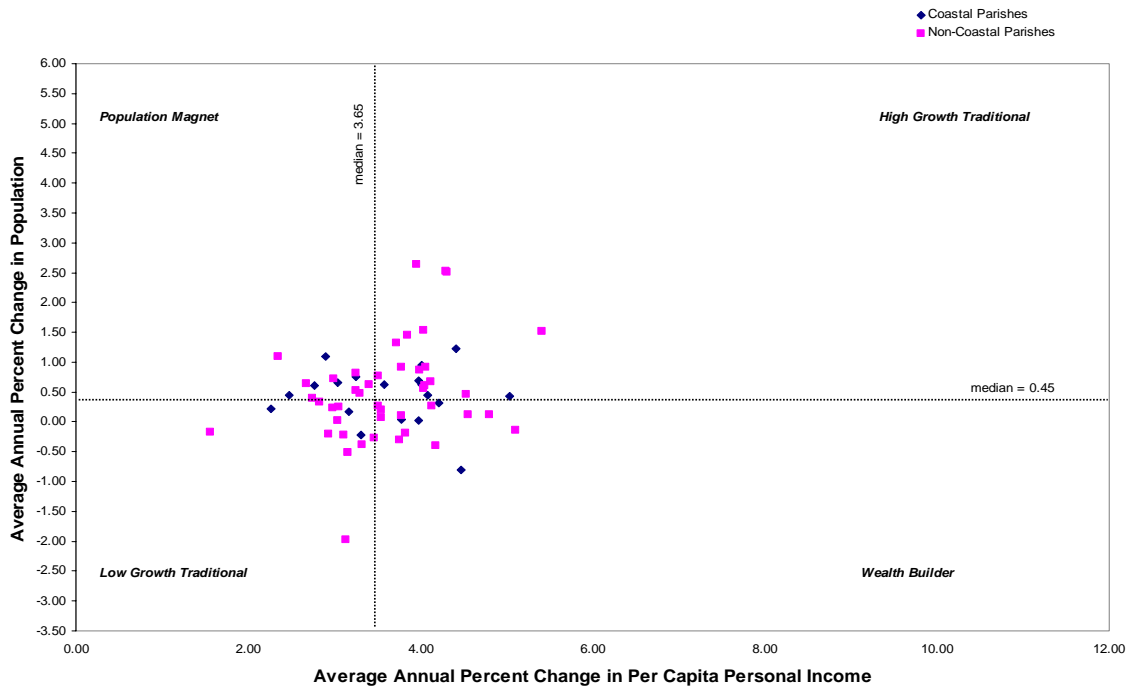
**Figure 18: Change in Population and PCPI for Louisiana Parishes, 1969-1980.**



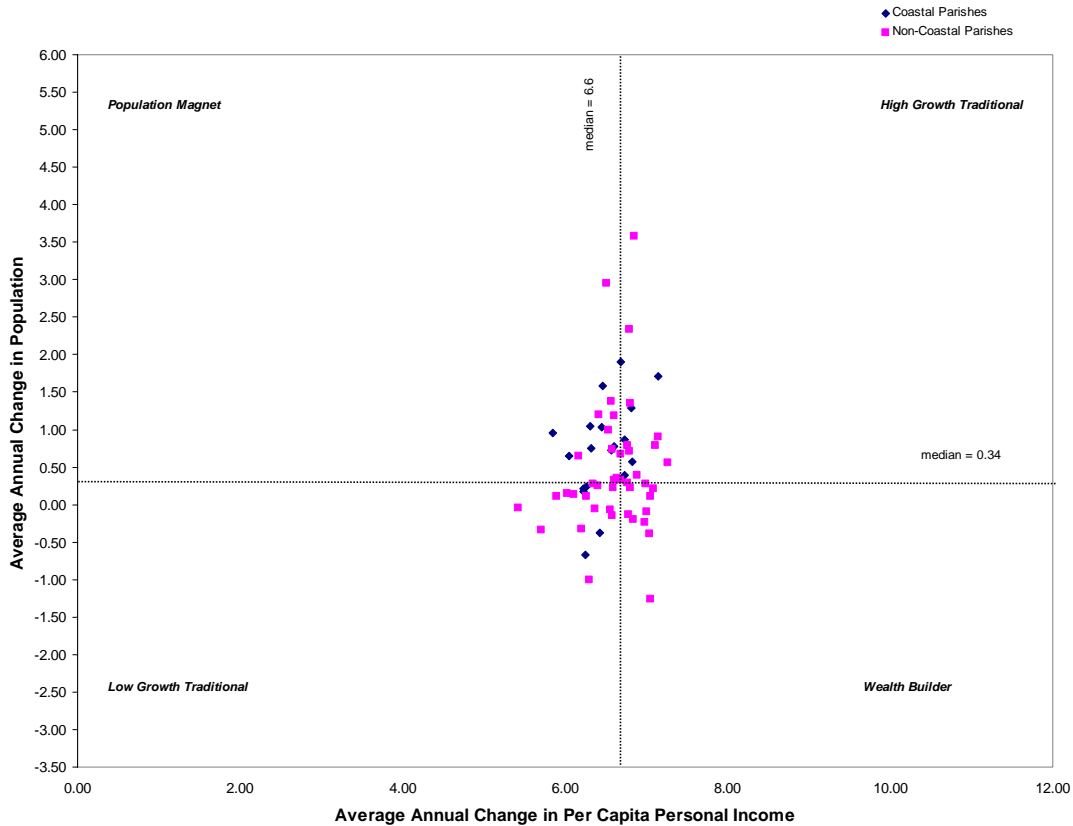
**Figure 19: Change in Population and PCPI for Louisiana Parishes, 1981-1985.**



**Figure 20: Change in Population and PCPI for Louisiana Parishes, 1986-1990.**



**Figure 21: Change in Population and PCPI for Louisiana Parishes, 1991-2000.**



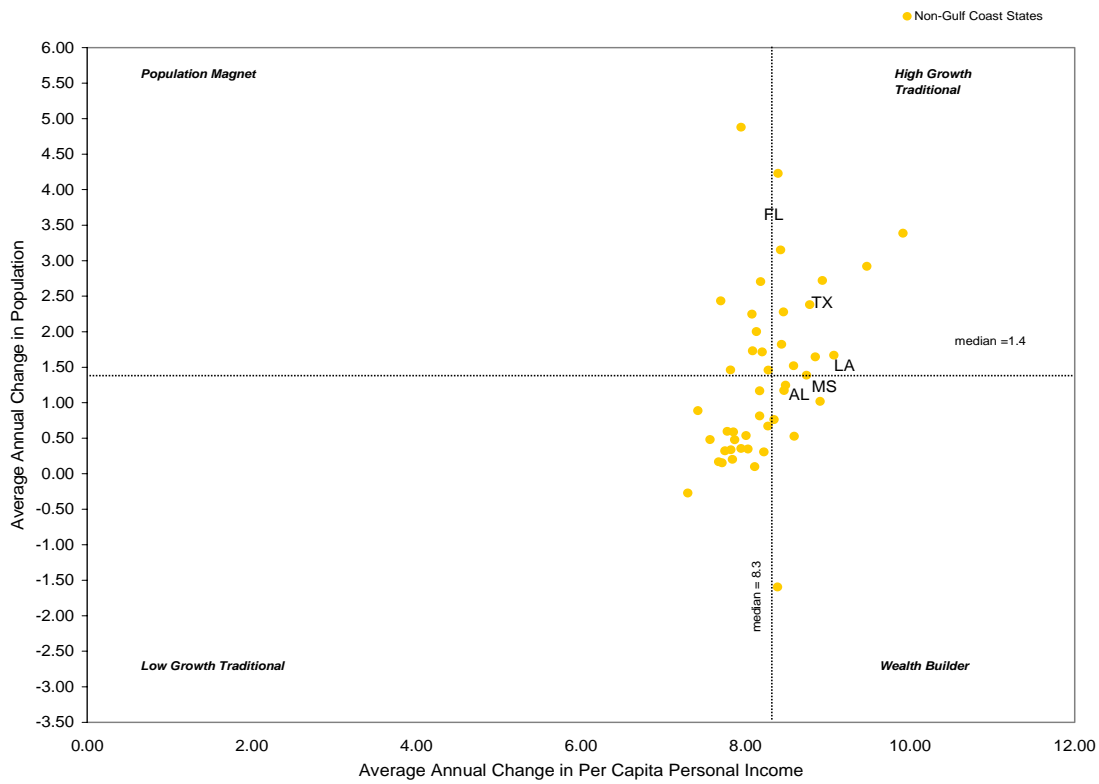
**Figure 22: Change in Population and PCPI for Louisiana Parishes, 1969-2000.**

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 greater than the median in terms of population growth, while Alabama, Louisiana and Texas are consistently slightly below the mean growth rate.

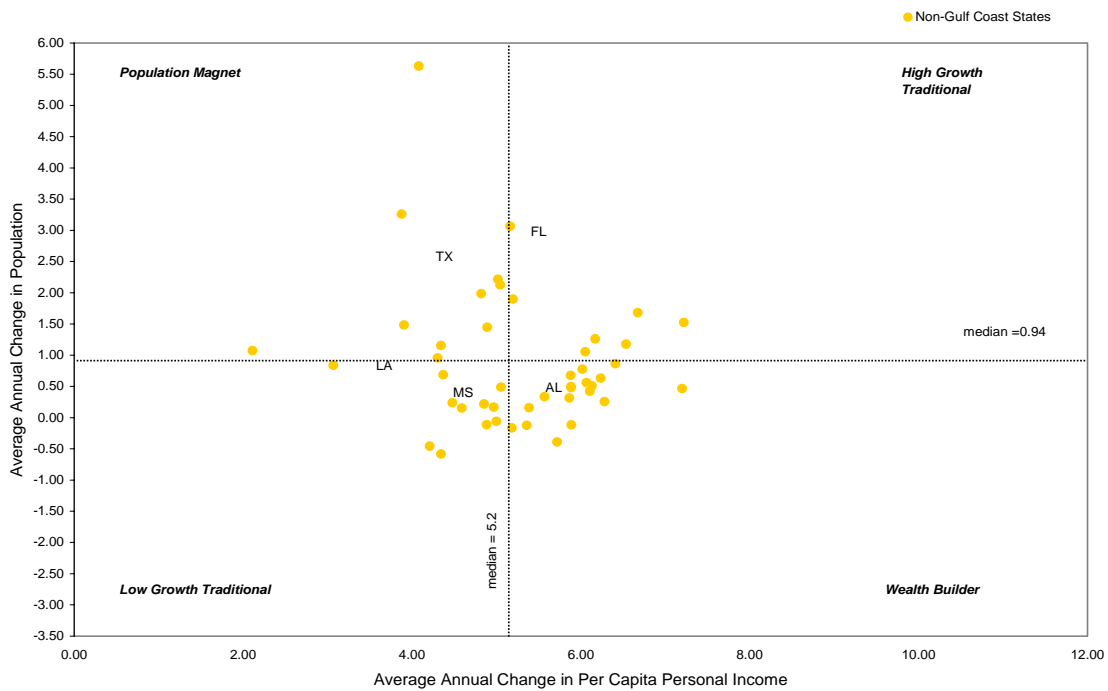
All five GOM states fall above the median rate PCPI growth rate in the initial 1969 to 1980 energy boom period, shown in Figure 23, but are distributed among the four quadrants quite evenly during the other three periods. Looking at the period as a whole, the GOM states cluster around the median PCPI with Florida and Texas doing significantly better in terms of population growth.

For none of the periods does the distribution suggest a positive or negative association between the growth rates of population and per capita personal income.

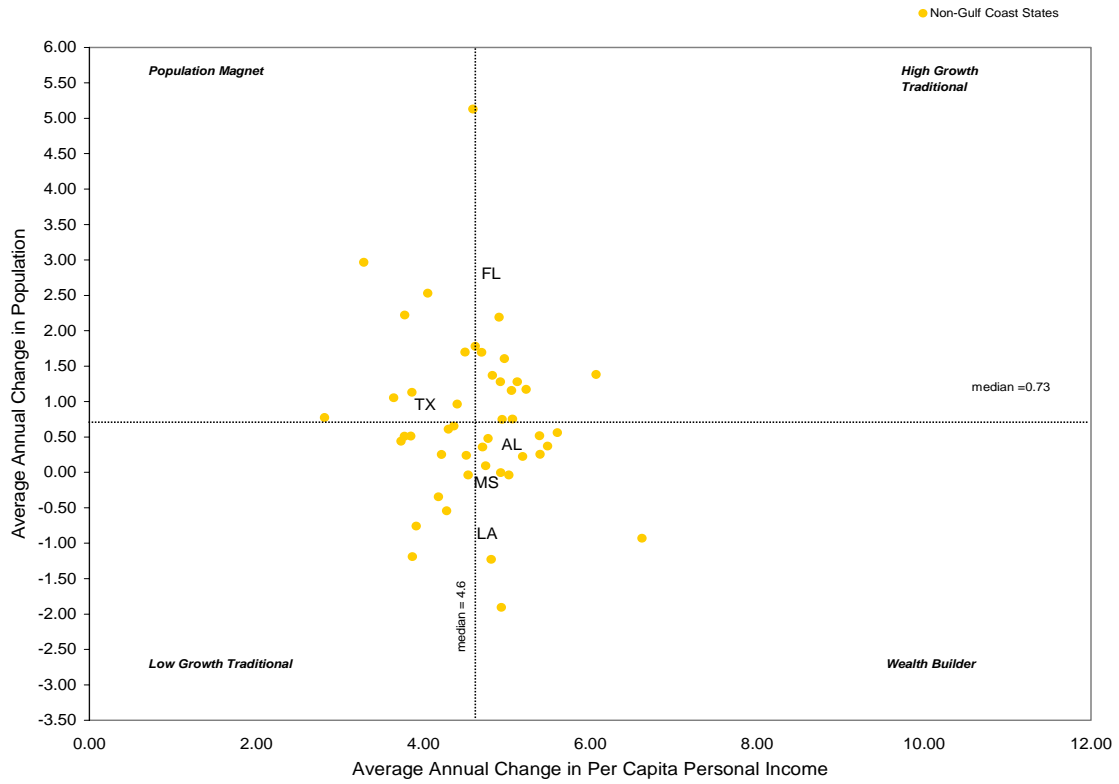




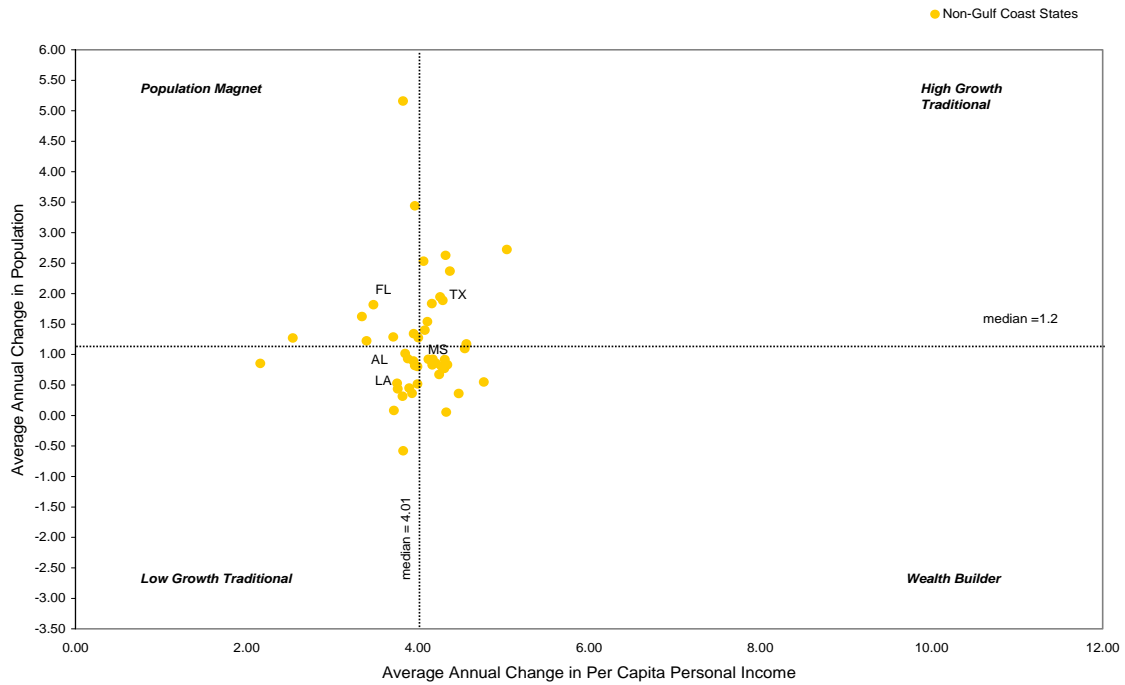
**Figure 23: Percent Change in Population and PCPI for the U.S., 1969-1980.**



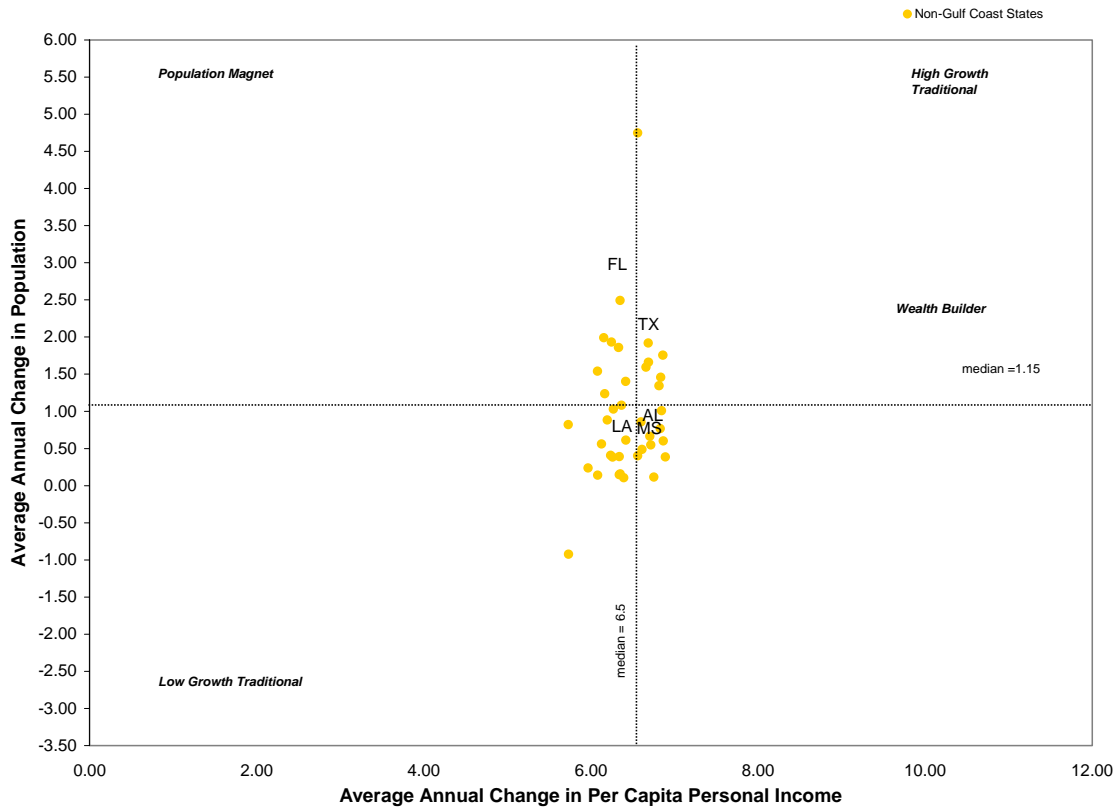
**Figure 24: Percent Change in Population and PCPI for the U.S., 1981-1985.**



**Figure 25: Percent Change in Population and PCPI for the U.S., 1986-1990.**



**Figure 26: Percent Change in Population and PCPI for the U.S., 1991-2000.**



**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 with the traditional "boom town" conceptualization of economic effects are to be found, the 1990s, not the 1970s, would be the place to look for them. By 1990 the economic and social adjustments to the decline of onshore activity should have been made and the increase from 300 million barrels to over 500 million barrels that occurred in offshore production over the following decade should create the sort of pressure on public services and diseconomies for existing economic activity usually hypothesized by the "boom town" model of socioeconomic effects. We find no such evidence, at least in the behavior of per capita personal income and its principal components or in the association between per capita personal income and population growth.

Thus, in a broader context, offshore production mitigated or had an opposing (positive) effect compared to onshore production. It was a source of stability and growth for coastal communities. It gave them partial relief from the economic consequences of nose-diving onshore production. Our analysis does not attempt to separate the mitigating or positive effects of offshore production from the negative effects of the onshore collapse. Why the precipitous drop in coastal, onshore production did not seem to affect the rest of the industry during the 1970s is an interesting question but is not a part of this study.

The analysis of changes in per capita personal income among the 19 coastal Louisiana Parishes and 45 non-coastal Louisiana Parishes, the five Gulf States, and eight Louisiana MSAs, shows a consistent pattern. The economic effects of energy producing states and state jurisdictions in coastal parishes are limited to the 1974 to 1980 energy price explosion and the 1981 to 1985 energy price erosion and collapse.

The analysis of the components of change during these two episodes shows that the effects were greater than the rate of change in per capita personal income considered alone would indicate. In the 1970 to 1980 boom, increases in relative wages and labor force participation accounted for more of the relative increase in energy producing jurisdictions, while increases in income from transfer payments made a much more substantial contribution in non-energy producing jurisdictions. As the cycle reversed and energy prices fell, transfer payments increased in energy producing jurisdictions and labor force participation and relative wages declined. The major longer-term driver accounting for changes in per capita personal income was the rate of improvement in industry mix. It mirrored the coastal/non-coastal dichotomy but at a much more modest level, increasing marginally during the boom in energy producing jurisdictions and

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 differences between oil and gas producing jurisdictions and non-oil and gas producing jurisdictions. Changes observable among the Gulf States seem to be attributable to factors unrelated to their energy intensity or industrial composition. This also appears to be the case for Louisiana’s parishes and MSAs.

This is consistent with broader views of the U.S. economy. Evaluating the performance of the national economy over roughly the same period we consider here, William Nordhaus (2004, page 30) 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 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.

Looking at the experience of the five Gulf Coast states leads to a similar conclusion. Differential effects are evident during the 1970s and early 1980s, but no lasting, cumulative effects are in evidence. Energy is important but it is a part of a much larger national and global economy. Different regions and localities are affected by different factors, but there is little evidence of persisting, cumulative effects, either positive or negative, from oil and gas production.

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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	Industry	Z	Wage	Z	Participation	Z	Transfer	Z	Property	Z
		Score	Mix	Score	Effect	Score	Z Score	Score	Payments	Score	Income	Score
Acadia	9.90	0.50	7.31	0.50	0.56	0.10	0.31	-0.58	2.45	0.63	-0.73	-0.18
Assumption	10.69	1.29	8.34	2.93	1.47	1.64	1.96	0.61	0.05	-0.63	-1.13	-0.93
Calcasieu	9.55	0.15	6.93	-0.40	1.15	1.10	1.90	0.57	-0.20	-0.76	-0.22	0.77
Cameron	10.10	0.70	7.99	2.09	-0.25	-1.26	3.32	1.59	-0.33	-0.83	-0.62	0.02
Iberia	10.88	1.48	7.68	1.36	0.99	0.84	3.09	1.43	-0.32	-0.82	-0.56	0.14
Jefferson	8.71	-0.69	6.54	-1.33	0.43	-0.12	2.69	1.14	-0.90	-1.13	-0.04	1.12
Jefferson Davis	9.59	0.19	7.81	1.69	0.12	-0.64	0.39	-0.53	2.29	0.55	-1.02	-0.73
Lafayette	11.57	2.17	7.79	1.62	0.90	0.67	3.55	1.76	-0.21	-0.76	-0.45	0.34
Lafourche	10.49	1.08	7.29	0.45	0.55	0.08	1.55	0.31	1.54	0.16	-0.44	0.36
Orleans	8.52	-0.88	6.93	-0.39	0.63	0.23	1.31	0.14	-0.39	-0.86	0.03	1.24
Plaquemines	10.19	0.78	7.64	1.28	0.25	-0.43	5.11	2.89	-2.70	-2.08	-0.12	0.96
St. Bernard	8.45	-0.94	6.52	-1.38	0.34	-0.28	1.10	-0.01	0.54	-0.37	-0.04	1.11
St. Charles	10.42	1.02	7.21	0.26	1.11	1.04	4.73	2.62	-2.23	-1.83	-0.40	0.43
St. James	10.24	0.84	n.a	0.00	n.a	0.00	n.a	0.00	-1.29	-1.34	-0.54	0.18
St. John the Baptist	10.06	0.65	n.a	0.00	n.a	0.00	n.a	0.00	0.59	-0.35	-0.27	0.67
St. Martin	10.71	1.31	7.66	1.31	-0.91	-2.38	2.11	0.72	3.18	1.02	-1.33	-1.32
St. Mary	9.89	0.49	8.01	2.14	0.64	0.25	2.77	1.19	-1.21	-1.29	-0.32	0.58
Terrebonne	10.75	1.34	7.59	1.14	0.93	0.73	3.33	1.60	-0.64	-0.99	-0.45	0.34
Vermilion	10.13	0.73	8.01	2.16	1.27	1.31	1.19	0.05	0.62	-0.33	-0.96	-0.62
Mean	10.04		7.49		0.60		2.38		0.04		-0.51	
Std. Error	0.81		0.53		0.59		1.38		1.52		0.39	

**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
Allen	8.90	-0.50	6.71	-0.92	0.80	0.51	-2.33	-2.49	3.90	1.40	-0.19	0.83
Ascension	9.79	0.39	7.16	0.13	1.06	0.95	2.76	1.19	-0.68	-1.01	-0.51	0.24
Avoyelles	9.20	-0.20	6.71	-0.93	-0.44	-1.59	0.39	-0.53	3.72	1.30	-1.17	-1.02
Beauregard	10.13	0.73	6.72	-0.89	1.73	2.09	1.05	-0.05	1.09	-0.08	-0.46	0.32
Bienville	9.27	-0.13	7.33	0.55	1.07	0.96	0.78	-0.25	0.72	-0.28	-0.63	0.00
Bossier	8.70	-0.70	7.12	0.05	0.34	-0.27	0.33	-0.57	1.13	-0.06	-0.22	0.78
Caddo	8.82	-0.57	7.10	0.01	0.52	0.03	1.56	0.32	-0.31	-0.82	-0.05	1.10
Caldwell	9.88	0.48	6.86	-0.56	0.02	-0.80	0.82	-0.22	2.97	0.91	-0.79	-0.31
Catahoula	9.35	-0.05	7.11	0.03	-0.02	-0.87	1.81	0.50	1.96	0.38	-1.51	-1.66
Claiborne	9.03	-0.37	7.48	0.91	0.54	0.07	0.95	-0.12	0.59	-0.34	-0.54	0.17
Concordia	8.89	-0.51	6.72	-0.89	-0.57	-1.81	0.80	-0.23	2.71	0.77	-0.78	-0.28
De Soto	9.48	0.08	7.38	0.66	2.23	2.94	0.81	-0.22	-0.13	-0.72	-0.81	-0.34
East Baton Rouge	9.34	-0.06	6.63	-1.10	0.69	0.33	1.60	0.35	0.43	-0.43	-0.01	1.16
East Carroll	8.97	-0.42	6.71	-0.93	0.94	0.76	-0.33	-1.05	3.17	1.01	-1.52	-1.66
East Feliciana	10.72	1.32	7.02	-0.19	0.50	0.01	0.69	-0.31	2.95	0.90	-0.45	0.34
Evangeline	10.35	0.95	6.90	-0.47	0.69	0.33	0.30	-0.59	3.37	1.12	-0.92	-0.54
Franklin	8.91	-0.49	6.55	-1.29	-0.30	-1.36	-0.44	-1.13	4.74	1.84	-1.64	-1.89
Grant	8.46	-0.94	n.a	0.00	n.a	0.00	n.a	0.00	1.27	0.02	-0.80	-0.32
Iberville	9.95	0.55	7.49	0.91	1.15	1.10	3.26	1.55	-1.46	-1.42	-0.49	0.27
Jackson	8.79	-0.61	n.a	0.00	n.a	0.00	n.a	0.00	1.68	0.23	-0.25	0.71
La Salle	9.88	0.48	n.a	0.00	n.a	0.00	n.a	0.00	1.79	0.29	-0.33	0.56
Lincoln	9.15	-0.25	6.80	-0.71	0.13	-0.63	2.19	0.78	0.46	-0.41	-0.43	0.38
Livingston	9.00	-0.39	6.68	-1.00	-0.91	-2.39	0.16	-0.69	3.82	1.36	-0.75	-0.23
Madison	7.38	-2.01	6.18	-2.17	0.29	-0.35	-0.96	-1.50	2.89	0.87	-1.03	-0.75
Morehouse	9.11	-0.28	6.87	-0.53	0.53	0.05	0.27	-0.61	2.26	0.54	-0.82	-0.36
Natchitoches	8.52	-0.88	7.18	0.20	-0.11	-1.03	0.95	-0.12	1.52	0.15	-1.03	-0.74
Ouachita	9.05	-0.35	6.80	-0.70	0.66	0.28	0.86	-0.19	0.89	-0.19	-0.17	0.87
Pointe Coupee	9.79	0.39	n.a	0.00	n.a	0.00	n.a	0.00	0.36	-0.47	-1.35	-1.34
Rapides	8.71	-0.68	6.81	-0.68	1.03	0.90	-0.03	-0.83	1.06	-0.10	-0.16	0.89
Red River	7.76	-1.64	7.27	0.41	-0.82	-2.24	0.30	-0.59	2.34	0.58	-1.34	-1.32
Richland	9.94	0.54	7.00	-0.24	1.08	0.98	-0.10	-0.88	2.87	0.86	-0.90	-0.51
Sabine	8.26	-1.14	6.86	-0.57	-0.36	-1.46	-0.02	-0.82	2.23	0.52	-0.45	0.34
St. Helena	9.58	0.18	n.a	0.00	n.a	0.00	n.a	0.00	1.10	-0.08	-0.89	-0.49
St. Landry	10.86	1.46	7.35	0.59	0.92	0.72	1.35	0.17	1.91	0.35	-0.67	-0.06
St. Tammany	9.33	-0.07	6.57	-1.24	0.40	-0.17	0.64	-0.35	1.93	0.36	-0.20	0.81
Tangipahoa	9.38	-0.02	6.63	-1.11	0.06	-0.75	0.25	-0.63	3.06	0.95	-0.61	0.04
Tensas	8.48	-0.92	n.a	0.00	n.a	0.00	n.a	0.00	6.00	2.50	-3.04	-4.53
Union	8.62	-0.78	6.60	-1.19	0.34	-0.27	-0.32	-1.04	2.53	0.68	-0.53	0.19
Vernon	5.24	-4.14	7.06	-0.09	1.24	1.26	-3.27	-3.18	0.11	-0.60	0.10	1.37
Washington	8.61	-0.78	6.55	-1.30	-0.13	-1.06	0.04	-0.78	2.40	0.61	-0.24	0.73
Webster	8.23	-1.16	n.a	0.00	n.a	0.00	n.a	0.00	4.89	1.92	0.40	1.94
West Baton Rouge	10.14	0.74	n.a	0.00	n.a	0.00	n.a	0.00	-1.47	-1.43	-0.53	0.19
West Carroll	9.03	-0.37	n.a	0.00	n.a	0.00	n.a	0.00	3.10	0.98	-1.20	-1.06
West Feliciana	10.86	1.46	n.a	0.00	n.a	0.00	n.a	0.00	-3.92	-2.72	-0.76	-0.23
Winn	8.84	-0.56	7.03	-0.16	0.43	-0.12	0.61	-0.37	0.88	-0.19	-0.12	0.97
Mean	9.13		6.91		0.45		0.51		1.75		-0.68	
Std. Error	0.96		0.30		0.69		1.21		1.83		0.58	

**Table A.2a**

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

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	3.97	-0.02	4.10	-0.08	-0.35	0.65	-1.64	-0.43	0.66	-0.27	1.21	1.28
Assumption	2.23	-1.17	3.96	-0.30	-3.07	-1.65	-3.90	-1.62	5.52	1.97	-0.28	-0.85
Calcasieu	1.65	-1.55	3.62	-0.85	-2.14	-0.87	-2.98	-1.14	2.59	0.62	0.56	0.36
Cameron	3.21	-0.52	3.44	-1.13	-0.20	0.78	-0.44	0.21	0.30	-0.43	0.10	-0.30
Iberia	0.84	-2.09	3.52	-1.00	-1.84	-0.61	-4.41	-1.90	3.30	0.95	0.28	-0.06
Jefferson	4.07	0.05	3.64	-0.81	-0.95	0.15	1.16	1.06	-0.30	-0.71	0.52	0.29
Jefferson Davis	2.18	-1.20	3.03	-1.77	-1.11	0.01	-3.07	-1.18	1.71	0.22	1.62	1.88
Lafayette	2.30	-1.12	3.01	-1.81	-0.72	0.34	-1.23	-0.21	0.99	-0.11	0.25	-0.09
Lafourche	1.19	-1.86	3.70	-0.71	-2.57	-1.23	-1.65	-0.43	1.26	0.01	0.44	0.18
Orleans	4.53	0.35	3.82	-0.53	0.47	1.35	-1.05	-0.12	1.00	-0.11	0.29	-0.04
Plaquemines	2.68	-0.87	3.31	-1.34	-0.18	0.80	-3.78	-1.56	2.83	0.73	0.50	0.26
St. Bernard	2.94	-0.70	3.04	-1.75	-3.05	-1.63	-1.77	-0.49	3.68	1.13	1.03	1.02
St. Charles	0.87	-2.07	3.35	-1.28	-2.07	-0.81	-7.92	-3.75	7.18	2.73	0.33	0.02
St. James	4.39	0.26	n.a	0.00	n.a	0.00	n.a	0.00	-1.34	-1.18	-0.20	-0.74
St. John the Baptist	1.51	-1.64	n.a	0.00	n.a	0.00	n.a	0.00	0.83	-0.19	0.05	-0.38
St. Martin	1.49	-1.65	4.02	-0.21	-1.57	-0.38	-1.70	-0.46	0.76	-0.22	-0.02	-0.48
St. Mary	1.81	-1.44	3.36	-1.26	-0.52	0.51	-3.50	-1.41	2.36	0.52	0.12	-0.28
Terrebonne	0.93	-2.03	3.07	-1.71	-1.93	-0.68	-3.50	-1.41	2.85	0.74	0.43	0.17
Vermilion	3.08	-0.61	3.40	-1.20	-0.46	0.56	-2.60	-0.93	1.99	0.35	0.75	0.62
Mean	2.41		3.49		-1.31		-2.59		2.01		0.42	
Std. Error	1.21		0.35		1.07		1.98		2.00		0.47	

**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	Z Score	Wage	Z Score	Participation	Z Score	Transfer	Z Score	Property	Z Score
			Mix		Effect				Payments Ratio		Income ratio	
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
Ascension	3.27	-0.48	3.71	-0.70	-2.78	-1.40	0.21	0.55	1.76	0.24	0.35	0.06
Avoyelles	4.99	0.65	5.03	1.38	-0.08	0.88	-1.11	-0.15	0.16	-0.49	0.99	0.98
Beauregard	4.32	0.21	4.53	0.59	-2.25	-0.95	1.58	1.28	0.17	-0.49	0.28	-0.05
Bienville	4.81	0.53	4.16	0.00	0.60	1.46	-0.86	-0.01	0.02	-0.56	0.90	0.84
Bossier	5.34	0.89	4.04	-0.19	-0.62	0.43	0.85	0.89	0.72	-0.24	0.36	0.06
Caddo	4.65	0.43	3.99	-0.26	-0.48	0.55	0.08	0.48	1.06	-0.08	-0.01	-0.46
Caldwell	5.72	1.14	n.a	0.00	n.a	0.00	n.a	0.00	-0.79	-0.93	-0.10	-0.60
Catahoula	2.91	-0.72	4.01	-0.23	-5.17	-3.43	-3.36	-1.34	8.02	3.12	-0.59	-1.30
Claiborne	4.35	0.23	3.28	-1.38	-0.21	0.78	-1.71	-0.46	2.19	0.44	0.80	0.69
Concordia	2.77	-0.81	5.02	1.36	-0.70	0.35	-1.32	-0.26	-0.10	-0.61	-0.13	-0.64
De Soto	3.62	-0.25	3.49	-1.05	-3.99	-2.43	-4.91	-2.16	7.83	3.03	1.19	1.26
East Baton Rouge	3.78	-0.14	4.15	-0.01	-1.61	-0.41	0.16	0.53	0.98	-0.12	0.10	-0.30
East Carroll	4.16	0.11	5.58	2.24	-2.57	-1.23	0.52	0.72	3.29	0.94	-2.66	-4.27
East Feliciana	4.97	0.64	5.12	1.52	-1.36	-0.20	2.30	1.66	-2.06	-1.51	0.97	0.94
Evangeline	3.38	-0.41	4.68	0.83	-0.91	0.18	-1.10	-0.14	0.58	-0.30	0.13	-0.27
Franklin	5.11	0.73	4.74	0.93	-0.17	0.81	-0.57	0.14	0.33	-0.41	0.78	0.67
Grant	4.93	0.61	n.a	0.00	n.a	0.00	n.a	0.00	-0.41	-0.76	0.15	-0.24
Iberville	3.59	-0.27	4.11	-0.06	-0.22	0.76	-2.73	-1.00	2.39	0.53	0.03	-0.41
Jackson	5.00	0.66	4.28	0.20	-0.52	0.51	0.36	0.63	0.41	-0.38	0.47	0.22
La Salle	6.60	1.72	3.81	-0.54	0.61	1.46	2.17	1.59	-0.06	-0.59	0.08	-0.34
Lincoln	5.29	0.85	4.63	0.75	-0.50	0.53	0.14	0.52	0.19	-0.48	0.82	0.73
Livingston	3.39	-0.40	4.67	0.81	-1.23	-0.09	2.54	1.79	-4.04	-2.42	1.44	1.62
Madison	4.75	0.50	n.a	0.00	n.a	0.00	n.a	0.00	3.24	0.92	-0.95	-1.81
Morehouse	3.88	-0.08	4.65	0.77	-1.64	-0.44	-0.77	0.04	1.15	-0.04	0.48	0.24
Natchitoches	5.76	1.16	4.63	0.75	-0.11	0.86	0.18	0.53	0.65	-0.27	0.41	0.14
Ouachita	5.14	0.75	4.19	0.06	-0.75	0.32	1.16	1.05	0.17	-0.49	0.36	0.07
Pointe Coupee	4.49	0.32	n.a	0.00	n.a	0.00	n.a	0.00	3.37	0.98	-0.42	-1.05
Rapides	5.56	1.03	4.48	0.51	-0.44	0.58	0.66	0.79	0.37	-0.40	0.48	0.24
Red River	4.94	0.62	5.19	1.63	0.33	1.23	0.65	0.78	-1.66	-1.33	0.42	0.16
Richland	3.84	-0.10	5.17	1.60	-2.44	-1.12	0.35	0.63	1.35	0.06	-0.60	-1.31
Sabine	6.44	1.61	4.42	0.41	0.19	1.11	1.50	1.23	-0.18	-0.65	0.52	0.29
St. Helena	6.21	1.46	5.41	1.97	-1.88	-0.64	0.24	0.57	1.75	0.24	0.70	0.56
St. Landry	3.13	-0.57	3.86	-0.47	-1.14	-0.02	-1.81	-0.52	1.58	0.16	0.65	0.48
St. Tammany	4.01	0.00	4.32	0.26	-0.95	0.15	1.39	1.18	-1.44	-1.23	0.68	0.53
Tangipahoa	4.56	0.37	4.50	0.55	0.09	1.03	0.02	0.45	-0.82	-0.94	0.76	0.64
Tensas	3.52	-0.32	5.64	2.34	-4.16	-2.58	0.00	0.44	3.66	1.11	-1.61	-2.77
Union	5.47	0.97	4.56	0.64	1.07	1.86	-0.09	0.39	-1.10	-1.07	1.03	1.03
Vernon	7.31	2.18	5.06	1.42	0.60	1.46	1.02	0.98	0.55	-0.31	0.08	-0.34
Washington	4.15	0.10	4.38	0.35	-0.98	0.12	-0.59	0.13	0.36	-0.40	0.98	0.95
Webster	5.15	0.76	n.a	0.00	n.a	0.00	n.a	0.00	-0.31	-0.71	0.06	-0.37
West Baton Rouge	4.60	0.40	3.26	-1.41	-1.28	-0.13	1.58	1.28	0.08	-0.53	0.95	0.92
West Carroll	5.06	0.70	n.a	0.00	n.a	0.00	n.a	0.00	3.70	1.13	-1.12	-2.07
West Feliciana	6.59	1.71	n.a	0.00	n.a	0.00	n.a	0.00	1.87	0.29	0.13	-0.26
Winn	5.55	1.02	4.28	0.19	-0.68	0.38	0.25	0.57	1.12	-0.05	0.58	0.38
Mean	4.67		4.46		-1.04		-0.03		0.91		0.27	
Std. Error	1.07		0.59		1.38		1.54		2.18		0.77	

**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
La Salle	4.65	-0.07	3.43	-1.13	-1.68	-0.85	1.09	-0.36	1.36	1.17	0.44	0.46
Lincoln	5.34	0.72	3.84	0.07	-0.60	0.26	2.34	0.59	0.11	0.14	-0.34	-0.82
Livingston	4.86	0.17	3.62	-0.58	-2.35	-1.53	0.90	-0.50	2.59	2.18	0.10	-0.10
Madison	7.52	3.15	n.a	0.00	n.a	0.00	n.a	0.00	-2.59	-2.07	1.97	2.94
Morehouse	5.09	0.43	4.09	0.78	-0.86	-0.02	2.25	0.52	-0.92	-0.70	0.54	0.61
Natchitoches	4.14	-0.64	3.73	-0.27	-0.91	-0.06	-0.40	-1.48	1.79	1.53	-0.07	-0.38
Ouachita	4.66	-0.05	3.68	-0.39	-0.18	0.68	1.21	-0.26	-0.47	-0.33	0.42	0.41
Pointe Coupee	4.29	-0.46	n.a	0.00	n.a	0.00	n.a	0.00	0.63	0.57	0.34	0.29
Rapides	5.22	0.57	3.57	-0.74	0.32	1.19	1.33	-0.17	-0.31	-0.20	0.32	0.25
Red River	4.59	-0.12	3.77	-0.14	-0.12	0.75	0.95	-0.46	-0.27	-0.16	0.26	0.17
Richland	4.83	0.14	4.02	0.59	0.79	1.68	1.95	0.30	-2.01	-1.60	0.08	-0.13
Sabine	5.48	0.87	4.05	0.69	-1.83	-1.00	2.50	0.71	0.86	0.77	-0.11	-0.44
St. Helena	4.65	-0.06	5.14	3.86	-0.96	-0.12	-2.05	-2.73	2.59	2.19	-0.06	-0.37
St. Landry	5.35	0.72	3.67	-0.44	0.02	0.89	1.25	-0.23	-0.06	0.01	0.47	0.50
St. Tammany	4.98	0.31	3.65	-0.49	-0.63	0.23	2.37	0.61	-0.90	-0.68	0.48	0.52
Tangipahoa	4.24	-0.52	3.64	-0.51	-1.44	-0.60	1.48	-0.06	1.00	0.88	-0.46	-1.01
Tensas	6.11	1.57	4.09	0.79	3.53	4.48	-1.59	-2.38	-1.95	-1.54	2.02	3.02
Union	4.32	-0.43	3.61	-0.61	-2.50	-1.69	2.78	0.93	1.33	1.15	-0.91	-1.75
Vernon	3.65	-1.19	3.64	-0.52	-1.72	-0.89	0.64	-0.69	1.29	1.12	-0.21	-0.61
Washington	3.73	-1.09	3.81	-0.01	-2.12	-1.30	1.52	-0.03	1.14	0.99	-0.62	-1.27
Webster	3.23	-1.65	3.57	-0.71	-1.56	-0.73	2.06	0.38	-0.58	-0.42	-0.26	-0.69
West Baton Rouge	5.43	0.81	n.a	0.00	n.a	0.00	n.a	0.00	-0.62	-0.45	0.25	0.14
West Carroll	4.43	-0.31	n.a	0.00	n.a	0.00	n.a	0.00	0.57	0.52	0.29	0.20
West Feliciana	1.88	-3.16	n.a	0.00	n.a	0.00	n.a	0.00	-0.23	-0.13	-0.23	-0.64
Winn	4.75	0.05	3.62	-0.57	-0.77	0.08	1.90	0.26	0.15	0.18	-0.14	-0.50
Mean	4.74		3.87		-0.62		1.24		-0.01		0.22	
Std. Error	0.96		0.39		1.16		1.39		1.28		0.70	



**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		0.52	

**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	Industry	Z	Wage	Z	Participation	Z	Transfer	Z	Property	Z
	Score	Score	Mix	Score	Effect	Score		Score	Payments	Score	Income	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
Orleans	6.25	-0.85	5.31	-0.94	0.11	1.71	0.55	-0.76	0.10	-1.11	0.18	1.86
Plaquemines	6.23	-0.92	5.38	-0.45	-0.36	0.13	1.37	0.95	-0.22	-1.61	0.06	1.27
St. Bernard	5.85	-1.92	4.89	-4.04	-1.21	-2.79	1.01	0.20	1.10	0.40	0.06	1.28
St. Charles	6.46	-0.29	5.30	-1.04	-0.31	0.28	1.18	0.56	0.43	-0.62	-0.14	0.27
St. James	6.26	-0.83	n.a	0.00	n.a	0.00	n.a	0.00	0.31	-0.80	-0.19	-0.02
St. John the Baptist	6.69	0.31	n.a	0.00	n.a	0.00	n.a	0.00	0.55	-0.43	-0.12	0.36
St. Martin	6.82	0.67	5.68	1.79	-1.29	-3.04	1.25	0.70	1.90	1.61	-0.73	-2.75
St. Mary	6.43	-0.38	5.57	0.92	-0.52	-0.42	0.97	0.11	0.53	-0.47	-0.12	0.37
Terrebonne	6.45	-0.33	5.45	0.07	-0.52	-0.44	1.13	0.45	0.65	-0.29	-0.26	-0.35
Vermilion	6.57	-0.01	5.76	2.34	-0.31	0.27	0.30	-1.29	1.30	0.70	-0.48	-1.47
Mean	6.47		5.43		-0.54		0.99		0.72		-0.16	
Std. Error	0.31		0.22		0.35		0.57		0.75		0.21	

**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
Bossier	6.56	-0.02	5.38	-0.40	-0.45	-0.20	1.12	0.42	0.63	-0.32	-0.11	0.38
Caddo	6.34	-0.62	5.35	-0.66	-0.07	1.11	0.79	-0.26	0.27	-0.85	-0.01	0.92
Caldwell	6.89	0.85	n.a	0.00	n.a	0.00	n.a	0.00	1.53	1.05	-0.41	-1.12
Catahoula	6.98	1.11	5.47	0.23	-0.11	0.98	0.64	-0.58	1.06	0.34	-0.08	0.56
Claiborne	6.37	-0.54	5.53	0.66	-0.44	-0.16	0.39	-1.10	1.06	0.34	-0.18	0.05
Concordia	5.70	-2.33	n.a	0.00	n.a	0.00	n.a	0.00	1.13	0.44	-0.44	-1.30
De Soto	6.63	0.17	5.62	1.32	0.54	3.20	0.52	-0.83	-0.04	-1.33	-0.01	0.91
East Baton Rouge	6.41	-0.43	5.23	-1.50	-0.42	-0.10	1.39	0.99	0.28	-0.84	-0.07	0.60
East Carroll	6.29	-0.75	n.a	0.00	n.a	0.00	n.a	0.00	1.46	0.94	-0.26	-0.36
East Feliciana	7.26	1.85	5.62	1.32	-0.27	0.44	0.51	-0.85	1.31	0.72	0.08	1.39
Evangeline	6.60	0.09	5.59	1.11	-0.59	-0.68	0.55	-0.76	1.59	1.14	-0.54	-1.79
Franklin	7.04	1.27	n.a	0.00	n.a	0.00	n.a	0.00	1.45	0.92	-0.31	-0.61
Grant	6.53	-0.12	n.a	0.00	n.a	0.00	n.a	0.00	0.91	0.12	-0.36	-0.89
Iberville	6.40	-0.46	5.50	0.43	0.11	1.73	1.12	0.44	-0.18	-1.54	-0.16	0.17
Jackson	7.00	1.15	n.a	0.00	n.a	0.00	n.a	0.00	1.28	0.67	0.16	1.77
La Salle	6.59	0.05	n.a	0.00	n.a	0.00	n.a	0.00	1.61	1.17	-0.11	0.42
Lincoln	6.58	0.04	5.42	-0.12	-0.36	0.13	1.44	1.11	0.25	-0.88	-0.18	0.04
Livingston	6.51	-0.16	5.41	-0.20	-0.90	-1.71	1.56	1.36	0.62	-0.33	-0.19	0.00
Madison	6.20	-0.98	n.a	0.00	n.a	0.00	n.a	0.00	1.05	0.33	-0.37	-0.94
Morehouse	6.58	0.03	n.a	0.00	n.a	0.00	n.a	0.00	1.27	0.66	-0.19	-0.02
Natchitoches	6.68	0.30	n.a	0.00	n.a	0.00	n.a	0.00	0.73	-0.16	-0.41	-1.13
Ouachita	6.77	0.53	5.35	-0.66	-0.18	0.72	1.19	0.57	0.38	-0.70	0.04	1.16
Pointe Coupee	7.06	1.30	n.a	0.00	n.a	0.00	n.a	0.00	1.10	0.40	-0.50	-1.60
Rapides	6.80	0.62	5.33	-0.78	-0.06	1.15	0.84	-0.16	0.74	-0.15	-0.05	0.70
Red River	5.89	-1.81	5.67	1.71	-0.42	-0.08	0.34	-1.22	0.85	0.03	-0.55	-1.86
Richland	6.78	0.58	5.57	0.97	0.03	1.46	0.15	-1.61	1.40	0.85	-0.37	-0.90
Sabine	6.79	0.58	5.35	-0.66	-0.69	-1.01	0.91	-0.01	1.43	0.90	-0.21	-0.12
St. Helena	7.09	1.40	n.a	0.00	n.a	0.00	n.a	0.00	0.88	0.06	-0.02	0.85
St. Landry	6.99	1.12	n.a	0.00	n.a	0.00	n.a	0.00	1.45	0.92	-0.21	-0.09
St. Tammany	6.85	0.75	5.28	-1.14	-0.33	0.21	1.75	1.75	0.18	-0.99	-0.03	0.80
Tangipahoa	6.80	0.61	5.38	-0.46	-0.33	0.22	0.96	0.10	1.06	0.34	-0.27	-0.41
Tensas	7.05	1.28	n.a	0.00	n.a	0.00	n.a	0.00	1.20	0.54	-0.45	-1.32
Union	6.68	0.30	5.57	0.98	-0.26	0.47	1.03	0.23	0.57	-0.41	-0.23	-0.21
Vernon	5.42	-3.07	5.45	0.04	0.33	2.46	-1.10	-4.23	0.75	-0.13	0.00	0.95
Washington	6.10	-1.25	5.27	-1.23	-1.04	-2.19	0.48	-0.91	1.43	0.89	-0.04	0.75
Webster	6.03	-1.45	n.a	0.00	n.a	0.00	n.a	0.00	2.29	2.20	0.11	1.52
West Baton Rouge	7.11	1.46	n.a	0.00	n.a	0.00	n.a	0.00	-1.25	-3.15	0.07	1.30
West Carroll	6.84	0.72	n.a	0.00	n.a	0.00	n.a	0.00	1.74	1.36	-0.57	-1.96
West Feliciana	7.15	1.54	n.a	0.00	n.a	0.00	n.a	0.00	0.60	-0.35	-0.23	-0.22
Winn	6.26	-0.84	n.a	0.00	n.a	0.00	n.a	0.00	1.02	0.28	-0.19	0.00
Mean	6.61		5.45		-0.30		0.87		0.89		-0.20	
Std. Error	0.39		0.13		0.34		0.61		0.62		0.19	

**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	Industry	Z	Wage	Z	Participation	Z	Property	Z	Transfer	Z
	Score	Score	Mix	Score	Effect	Score		Score	Income ratio	Score	Payments Ratio	Score
Alabama	8.79	0.92	7.09	0.97	0.38	0.91	0.68	-0.75	-0.27	0.13	0.92	0.15
Alaska	9.47	2.20	7.11	1.04	0.74	1.77	1.75	1.80	0.06	0.96	-0.18	-1.60
Arizona	8.40	0.17	6.73	-0.29	0.01	0.01	1.14	0.34	-0.25	0.20	0.77	-0.08
Arkansas	8.85	1.02	6.97	0.55	0.41	0.99	0.66	-0.79	-0.47	-0.36	1.28	0.73
California	8.09	-0.41	6.55	-0.90	-0.16	-0.40	1.32	0.78	-0.02	0.77	0.39	-0.69
Colorado	8.93	1.18	6.83	0.06	0.32	0.77	1.72	1.75	-0.26	0.17	0.31	-0.81
Connecticut	7.82	-0.91	6.47	-1.21	-0.11	-0.28	1.22	0.55	-0.14	0.46	0.39	-0.69
Delaware	7.42	-1.66	6.89	0.29	-0.09	-0.22	0.51	-1.17	-0.37	-0.11	0.49	-0.54
District of Columbia	8.39	0.16	7.54	2.56	0.02	0.04	1.93	2.23	-0.03	0.73	-1.06	-3.00
Florida	8.33	0.05	6.59	-0.76	0.01	0.02	0.86	-0.31	-0.13	0.49	0.99	0.27
Georgia	8.20	-0.19	6.92	0.39	0.11	0.26	0.61	-0.93	-0.30	0.06	0.87	0.07
Hawaii	7.70	-1.14	6.58	-0.80	0.16	0.39	0.50	-1.18	0.15	1.18	0.30	-0.84
Idaho	8.18	-0.23	6.71	-0.36	0.12	0.27	0.80	-0.47	-0.50	-0.43	1.06	0.38
Illinois	7.75	-1.04	6.56	-0.87	0.10	0.22	0.49	-1.22	-0.16	0.41	0.76	-0.09
Indiana	7.78	-0.99	6.54	-0.95	-0.11	-0.28	0.48	-1.23	-0.24	0.21	1.11	0.46
Iowa	8.03	-0.52	6.52	-1.03	-0.36	-0.89	1.17	0.42	-1.01	-1.68	1.72	1.42
Kansas	8.59	0.54	6.92	0.39	-0.15	-0.37	1.54	1.32	-0.75	-1.04	1.03	0.32
Kentucky	8.49	0.34	7.07	0.90	0.31	0.74	0.63	-0.87	-0.28	0.13	0.75	-0.11
Louisiana	9.26	1.80	7.24	1.49	0.53	1.27	1.31	0.77	-0.24	0.23	0.41	-0.65
Maine	8.17	-0.25	6.81	0.00	-0.13	-0.33	0.81	-0.45	-0.17	0.39	0.86	0.06
Maryland	8.17	-0.25	6.66	-0.53	-0.05	-0.13	1.06	0.15	-0.21	0.29	0.72	-0.17
Massachusetts	7.71	-1.11	6.54	-0.96	-0.23	-0.56	1.18	0.44	-0.05	0.68	0.28	-0.87
Michigan	7.57	-1.39	6.55	-0.93	0.01	0.02	0.43	-1.35	-0.20	0.31	0.78	-0.06
Minnesota	8.35	0.08	6.44	-1.29	-0.23	-0.56	1.70	1.69	-0.39	-0.15	0.82	-0.01
Mississippi	8.97	1.25	7.20	1.35	0.15	0.36	0.63	-0.88	-0.48	-0.38	1.47	1.04
Missouri	8.01	-0.56	6.58	-0.81	-0.05	-0.14	0.69	-0.72	-0.26	0.18	1.04	0.35
Montana	8.47	0.31	6.85	0.13	-0.37	-0.91	1.25	0.61	-0.82	-1.22	1.56	1.18
Nebraska	7.85	-0.85	6.59	-0.77	-0.69	-1.67	1.31	0.77	-1.04	-1.76	1.68	1.36
Nevada	7.95	-0.67	6.60	-0.73	-0.51	-1.23	1.46	1.11	-0.18	0.37	0.57	-0.40
New Hampshire	8.08	-0.42	6.80	-0.05	-0.22	-0.55	1.05	0.13	-0.12	0.52	0.58	-0.39
New Jersey	7.95	-0.68	6.64	-0.59	-0.10	-0.26	1.06	0.15	-0.11	0.53	0.46	-0.57
New Mexico	8.78	0.89	7.06	0.88	-0.11	-0.28	1.31	0.75	-0.28	0.12	0.80	-0.03
New York	7.30	-1.89	6.54	-0.96	-0.03	-0.08	0.37	-1.48	0.02	0.87	0.39	-0.69
North Carolina	8.28	-0.05	6.93	0.43	0.17	0.41	0.50	-1.19	-0.33	-0.02	1.01	0.29
North Dakota	7.87	-0.82	6.91	0.36	-1.83	-4.41	1.74	1.79	-2.43	-5.19	3.47	4.22
Ohio	7.84	-0.87	6.54	-0.95	-0.13	-0.32	0.69	-0.73	-0.16	0.41	0.90	0.12
Oklahoma	9.07	1.45	7.11	1.07	0.48	1.14	1.29	0.71	-0.34	-0.03	0.53	-0.46
Oregon	8.46	0.29	6.55	-0.91	0.14	0.34	1.15	0.37	-0.24	0.23	0.85	0.04
Pennsylvania	8.11	-0.36	6.68	-0.46	0.19	0.44	0.50	-1.17	-0.13	0.49	0.87	0.08
Rhode Island	7.67	-1.19	6.68	-0.46	-0.32	-0.77	0.67	-0.77	-0.04	0.72	0.67	-0.24
South Carolina	8.44	0.25	7.13	1.12	0.10	0.22	0.56	-1.04	-0.27	0.14	0.92	0.16
South Dakota	8.22	-0.15	6.76	-0.18	-0.61	-1.48	1.00	0.02	-1.28	-2.35	2.35	2.43
Tennessee	8.59	0.53	6.82	0.03	0.47	1.11	0.58	-0.99	-0.20	0.31	0.92	0.16
Texas	8.99	1.28	6.99	0.64	0.61	1.44	1.21	0.51	-0.31	0.05	0.49	-0.53
Utah	8.43	0.23	6.88	0.25	0.23	0.55	0.81	-0.44	-0.23	0.24	0.73	-0.14
Vermont	7.82	-0.91	6.53	-1.00	-0.50	-1.21	0.98	-0.04	-0.14	0.46	0.96	0.21
Virginia	8.74	0.82	7.04	0.81	0.14	0.32	0.95	-0.10	-0.16	0.41	0.77	-0.08
Washington	8.13	-0.32	6.64	-0.61	0.30	0.70	0.81	-0.43	-0.17	0.40	0.55	-0.43
West Virginia	8.91	1.13	7.35	1.89	0.32	0.75	0.61	-0.92	-0.12	0.52	0.75	-0.12
Wisconsin	8.27	-0.06	6.46	-1.24	-0.02	-0.07	1.31	0.77	-0.25	0.19	0.78	-0.07
Wyoming	9.91	3.02	7.68	3.06	0.81	1.94	1.71	1.72	-0.42	-0.23	0.13	-1.11
Mean	8.31		6.81		0.00		0.99		-0.33		0.82	
Std. Error	0.53		0.28		0.42		0.42		0.40		0.63	

**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
Georgia	6.67	1.44	4.72	1.36	0.43	0.94	1.56	1.09	0.10	-0.44	-0.13	-0.85
Hawaii	4.89	-0.33	4.71	1.34	0.00	0.35	-0.09	-1.11	0.14	-0.24	0.13	-0.27
Idaho	4.30	-0.92	4.68	1.24	-0.77	-0.71	-0.17	-1.22	0.24	0.26	0.33	0.16
Illinois	5.00	-0.23	4.18	-0.37	-0.18	0.10	0.53	-0.29	0.19	-0.01	0.29	0.07
Indiana	4.89	-0.34	4.15	-0.46	-0.62	-0.50	0.82	0.10	0.32	0.70	0.22	-0.09
Iowa	4.34	-0.88	4.29	0.01	-1.32	-1.46	0.42	-0.44	0.28	0.47	0.67	0.90
Kansas	5.06	-0.17	4.26	-0.10	0.02	0.37	0.36	-0.51	0.47	1.47	-0.06	-0.67
Kentucky	4.97	-0.26	4.15	-0.47	-0.51	-0.35	0.67	-0.10	0.01	-0.90	0.65	0.84
Louisiana	3.81	-1.41	3.86	-1.37	-0.91	-0.90	-0.73	-1.97	0.36	0.89	1.22	2.08
Maine	6.24	1.00	4.57	0.90	0.17	0.59	1.35	0.81	0.37	0.97	-0.23	-1.06
Maryland	6.41	1.18	4.24	-0.18	0.29	0.74	1.68	1.24	0.17	-0.10	0.04	-0.47
Massachusetts	7.20	1.96	4.45	0.50	1.22	2.02	1.86	1.49	0.13	-0.28	-0.46	-1.55
Michigan	5.72	0.49	4.39	0.31	-0.55	-0.40	1.57	1.11	0.13	-0.33	0.18	-0.17
Minnesota	5.89	0.65	4.34	0.14	0.27	0.72	1.01	0.36	0.11	-0.41	0.16	-0.22
Mississippi	4.63	-0.60	4.60	0.99	-0.49	-0.32	-0.04	-1.05	0.16	-0.15	0.40	0.31
Missouri	5.86	0.63	4.49	0.65	-0.26	-0.01	1.27	0.70	0.12	-0.38	0.25	-0.02
Montana	3.07	-2.15	3.88	-1.31	-2.22	-2.70	0.15	-0.79	-0.27	-2.40	1.52	2.73
Nebraska	5.39	0.16	4.53	0.77	0.10	0.48	0.55	-0.25	0.43	1.24	-0.22	-1.02
Nevada	3.88	-1.34	4.30	0.02	-0.90	-0.89	-0.47	-1.62	0.23	0.23	0.72	1.00
New Hampshire	7.22	1.98	4.50	0.67	0.75	1.39	2.22	1.96	0.32	0.71	-0.57	-1.79
New Jersey	6.13	0.90	4.26	-0.09	0.43	0.94	1.78	1.38	0.10	-0.45	-0.44	-1.50
New Mexico	5.20	-0.03	3.91	-1.22	0.13	0.52	0.37	-0.50	0.29	0.53	0.50	0.52
New York	6.28	1.05	4.39	0.32	0.61	1.18	1.07	0.43	-0.06	-1.28	0.27	0.04
North Carolina	6.54	1.30	4.82	1.69	0.36	0.84	1.05	0.40	0.17	-0.10	0.14	-0.25
North Dakota	4.37	-0.85	4.40	0.34	-0.22	0.04	-0.23	-1.30	0.75	2.94	-0.32	-1.25
Ohio	5.36	0.13	4.07	-0.71	0.00	0.34	0.73	-0.02	0.18	-0.06	0.39	0.28
Oklahoma	3.91	-1.31	3.74	-1.78	-0.14	0.15	-0.79	-2.05	0.35	0.84	0.75	1.07
Oregon	4.48	-0.74	4.40	0.33	-1.30	-1.44	0.77	0.03	0.21	0.12	0.40	0.31
Pennsylvania	5.18	-0.04	3.88	-1.32	-0.20	0.07	0.53	-0.28	0.26	0.37	0.71	0.98
Rhode Island	6.11	0.87	4.33	0.13	0.67	1.27	0.98	0.31	0.26	0.36	-0.14	-0.85
South Carolina	6.05	0.82	4.73	1.40	0.01	0.36	0.77	0.03	0.07	-0.63	0.48	0.48
South Dakota	4.86	-0.37	4.52	0.72	-0.50	-0.34	0.74	0.00	0.34	0.79	-0.24	-1.08
Tennessee	5.88	0.65	4.31	0.04	0.36	0.85	0.90	0.20	0.19	0.04	0.12	-0.29
Texas	4.59	-0.63	3.86	-1.38	-0.08	0.24	-0.06	-1.07	0.18	-0.06	0.69	0.92
Utah	5.02	-0.21	4.01	-0.92	-0.56	-0.42	0.89	0.19	0.14	-0.27	0.55	0.63
Vermont	5.88	0.65	4.64	1.13	-0.31	-0.08	1.65	1.21	-0.01	-1.02	-0.10	-0.77
Virginia	6.17	0.94	4.50	0.65	0.47	0.99	1.54	1.07	0.05	-0.72	-0.39	-1.40
Washington	4.34	-0.88	4.40	0.34	-1.56	-1.79	0.74	0.00	0.20	0.04	0.57	0.67
West Virginia	4.21	-1.01	3.49	-2.57	-0.42	-0.23	-0.27	-1.36	0.24	0.25	1.18	1.98
Wisconsin	4.59	-0.63	4.34	0.14	-0.66	-0.56	0.61	-0.19	0.11	-0.41	0.20	-0.12
Wyoming	2.11	-3.10	3.36	-3.01	-1.46	-1.65	-1.20	-2.59	0.17	-0.08	1.24	2.11
Mean	5.23		4.29		-0.25		0.74		0.19		0.26	
Std. Error	1.01		0.31		0.73		0.75		0.19		0.46	

**Table B.3**

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

State	PCPI	Z	Industry	Z	Wage	Z	Participation	Z	Property	Z	Transfer	Z
	Score	Score	Mix	Score	Effect	Score	Score	Score	Income	Score	Payments	Score
									Ratio		Ratio	
Alabama	5.13	0.73	3.52	-0.05	-0.17	0.07	1.53	0.29	0.11	0.17	0.15	0.52
Alaska	2.82	-2.65	3.60	0.32	-3.08	-3.28	1.47	0.20	-0.31	-1.79	1.14	3.09
Arizona	3.29	-1.96	3.40	-0.58	-0.81	-0.67	0.10	-1.62	0.01	-0.27	0.59	1.68
Arkansas	4.22	-0.60	3.59	0.25	-0.55	-0.37	1.34	0.03	-0.21	-1.32	0.05	0.28
California	4.05	-0.84	3.42	-0.50	-0.08	0.17	0.74	-0.76	0.01	-0.31	-0.04	0.05
Colorado	4.30	-0.48	3.57	0.18	-0.51	-0.32	0.88	-0.58	0.25	0.85	0.11	0.43
Connecticut	5.61	1.42	3.43	-0.43	1.40	1.88	0.53	-1.04	0.30	1.10	-0.07	-0.03
Delaware	4.97	0.50	3.89	1.60	-0.23	-0.01	1.49	0.23	0.01	-0.30	-0.18	-0.32
District of Columbia	6.62	2.90	4.14	2.72	0.25	0.55	2.72	1.86	0.08	0.03	-0.57	-1.31
Florida	4.74	0.15	3.51	-0.07	0.56	0.90	0.11	-1.61	-0.08	-0.69	0.64	1.79
Georgia	4.62	-0.01	3.42	-0.48	0.17	0.46	0.55	-1.02	0.08	0.05	0.40	1.17
Hawaii	6.07	2.10	3.36	-0.77	0.86	1.25	2.29	1.29	0.46	1.82	-0.89	-2.15
Idaho	5.49	1.25	3.59	0.26	-0.43	-0.23	2.80	1.97	0.34	1.28	-0.81	-1.93
Illinois	4.75	0.17	3.58	0.20	-0.03	0.23	1.55	0.30	-0.01	-0.36	-0.34	-0.73
Indiana	4.71	0.12	3.29	-1.07	-0.29	-0.07	1.81	0.66	-0.05	-0.55	-0.06	0.00
Iowa	4.18	-0.66	3.87	1.52	-0.90	-0.77	1.92	0.80	-0.52	-2.79	-0.19	-0.34
Kansas	3.73	-1.31	3.54	0.03	-0.75	-0.60	1.12	-0.26	0.05	-0.12	-0.21	-0.40
Kentucky	4.93	0.43	3.54	0.07	-0.49	-0.30	1.90	0.78	-0.18	-1.16	0.15	0.53
Louisiana	4.68	0.08	3.85	1.44	-1.01	-0.90	1.69	0.50	0.18	0.50	-0.03	0.06
Maine	5.06	0.62	3.41	-0.54	0.64	1.00	0.98	-0.44	-0.08	-0.69	0.10	0.41
Maryland	4.70	0.10	3.51	-0.10	0.53	0.87	0.77	-0.73	0.02	-0.23	-0.12	-0.17
Massachusetts	4.78	0.21	3.63	0.44	0.86	1.25	-0.06	-1.82	0.06	-0.05	0.28	0.87
Michigan	3.85	-1.14	2.69	-3.74	-0.52	-0.34	1.57	0.33	0.21	0.66	-0.10	-0.10
Minnesota	4.41	-0.33	3.67	0.64	-0.38	-0.18	1.32	0.00	-0.04	-0.53	-0.16	-0.26
Mississippi	5.00	0.53	3.67	0.64	-0.20	0.03	1.37	0.07	0.07	0.00	0.09	0.37
Missouri	3.78	-1.25	3.56	0.12	-0.55	-0.37	0.80	-0.69	-0.18	-1.17	0.15	0.52
Montana	4.28	-0.51	3.50	-0.13	-1.08	-0.98	1.94	0.83	0.05	-0.08	-0.13	-0.19
Nebraska	4.54	-0.14	3.63	0.46	-0.51	-0.33	1.85	0.70	0.09	0.10	-0.52	-1.19
Nevada	4.60	-0.05	3.60	0.29	0.31	0.62	0.93	-0.51	0.21	0.64	-0.45	-1.01
New Hampshire	3.78	-1.25	3.26	-1.22	1.05	1.47	-0.88	-2.91	0.02	-0.25	0.34	1.01
New Jersey	5.39	1.11	3.59	0.25	1.33	1.79	0.57	-0.99	0.19	0.55	-0.27	-0.56
New Mexico	3.87	-1.12	3.70	0.75	-1.97	-2.00	1.94	0.82	0.12	0.23	0.08	0.36
New York	5.40	1.12	3.68	0.66	0.97	1.38	0.46	-1.13	0.39	1.51	-0.10	-0.12
North Carolina	4.93	0.43	3.53	0.02	-0.01	0.25	1.19	-0.17	0.05	-0.08	0.16	0.56
North Dakota	3.87	-1.11	3.79	1.17	-1.61	-1.58	1.91	0.78	-0.26	-1.56	0.04	0.24
Ohio	4.52	-0.17	3.36	-0.76	-0.33	-0.12	1.43	0.15	0.21	0.64	-0.15	-0.23
Oklahoma	3.92	-1.05	3.68	0.67	-1.40	-1.34	1.53	0.29	0.15	0.39	-0.06	0.00
Oregon	4.83	0.29	3.55	0.10	0.21	0.50	1.47	0.21	-0.01	-0.40	-0.39	-0.85
Pennsylvania	5.19	0.82	3.45	-0.33	0.34	0.65	1.56	0.32	0.25	0.84	-0.41	-0.90
Rhode Island	5.07	0.64	3.36	-0.76	1.14	1.58	-0.08	-1.85	-0.02	-0.42	0.67	1.87
South Carolina	5.23	0.88	3.51	-0.10	0.15	0.44	1.49	0.23	0.06	-0.05	0.02	0.19
South Dakota	5.03	0.58	3.91	1.67	-0.34	-0.12	2.25	1.23	0.19	0.58	-0.98	-2.39
Tennessee	4.95	0.46	3.51	-0.09	-0.06	0.19	1.34	0.03	-0.02	-0.41	0.17	0.60
Texas	4.07	-0.82	3.66	0.57	-0.69	-0.53	1.08	-0.32	0.32	1.18	-0.30	-0.63
Utah	3.65	-1.44	3.08	-2.00	-1.25	-1.18	2.52	1.59	-0.01	-0.39	-0.68	-1.62
Vermont	5.13	0.72	3.28	-1.10	0.99	1.40	0.70	-0.82	0.14	0.33	0.02	0.19
Virginia	4.50	-0.19	3.45	-0.36	0.00	0.26	0.87	-0.59	-0.07	-0.65	0.25	0.79
Washington	4.91	0.40	3.61	0.35	-0.45	-0.26	1.91	0.79	0.17	0.49	-0.33	-0.71
West Virginia	4.82	0.27	3.34	-0.83	-1.02	-0.91	2.25	1.24	0.18	0.50	0.06	0.31
Wisconsin	4.37	-0.39	3.54	0.05	-0.42	-0.22	1.49	0.22	-0.23	-1.40	-0.01	0.11
Wyoming	4.94	0.45	3.21	-1.43	-1.25	-1.17	2.15	1.11	0.83	3.57	0.00	0.14
Mean	4.63		3.53		-0.23		1.32		0.07		-0.06	
Std. Error	0.68		0.23		0.87		0.75		0.21		0.39	



**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	3.97	-0.08	3.68	1.48	0.13	0.36	0.74	0.08	0.15	0.68	-0.74	-1.69
Arkansas	3.71	-0.61	3.44	-0.13	-0.52	-0.73	0.83	0.34	-0.15	-1.22	0.11	0.66
California	4.01	0.00	3.54	0.50	0.27	0.60	0.42	-0.86	0.16	0.72	-0.37	-0.68
Colorado	5.04	2.17	3.63	1.12	1.01	1.84	0.77	0.18	0.27	1.39	-0.63	-1.39
Connecticut	4.48	0.99	3.46	0.04	0.75	1.41	0.42	-0.85	0.36	1.98	-0.51	-1.06
Delaware	3.35	-1.38	3.22	-1.59	-0.21	-0.21	0.57	-0.42	-0.06	-0.67	-0.16	-0.10
District of Columbia	3.83	-0.37	3.32	-0.93	1.13	2.05	-0.45	-3.37	0.09	0.28	-0.25	-0.35
Florida	3.66	-0.73	3.65	1.22	-0.47	-0.65	0.94	0.66	0.16	0.74	-0.62	-1.36
Georgia	4.38	0.78	3.49	0.22	0.51	1.00	0.60	-0.34	0.12	0.48	-0.34	-0.59
Hawaii	2.16	-3.88	3.47	0.08	-1.55	-2.48	-0.39	-3.19	0.10	0.38	0.52	1.78
Idaho	4.07	0.13	3.39	-0.48	-0.19	-0.18	0.80	0.26	-0.18	-1.38	0.25	1.02
Illinois	4.17	0.34	3.56	0.64	0.02	0.18	0.73	0.04	0.07	0.19	-0.21	-0.23
Indiana	4.18	0.36	3.42	-0.26	0.04	0.20	0.77	0.15	0.10	0.37	-0.15	-0.06
Iowa	4.00	-0.02	3.48	0.13	-0.06	0.04	0.81	0.27	-0.20	-1.50	-0.03	0.26
Kansas	3.97	-0.08	3.51	0.31	-0.13	-0.08	0.88	0.49	-0.10	-0.86	-0.19	-0.19
Kentucky	4.13	0.25	3.36	-0.66	0.03	0.20	0.91	0.58	0.03	-0.10	-0.20	-0.22
Louisiana	3.73	-0.59	3.39	-0.46	-0.77	-1.17	1.03	0.91	0.03	-0.08	0.05	0.49
Maine	3.93	-0.15	2.95	-3.30	0.07	0.26	0.62	-0.28	-0.06	-0.63	0.35	1.30
Maryland	3.85	-0.32	3.50	0.29	-0.11	-0.04	0.54	-0.49	0.11	0.41	-0.20	-0.19
Massachusetts	4.77	1.61	3.49	0.22	0.97	1.78	0.90	0.54	0.04	-0.02	-0.63	-1.38
Michigan	4.25	0.51	3.45	-0.03	0.12	0.33	0.99	0.81	0.04	0.01	-0.36	-0.63
Minnesota	4.57	1.18	3.55	0.59	0.47	0.94	0.74	0.08	-0.03	-0.45	-0.16	-0.10
Mississippi	4.27	0.56	3.31	-0.98	-0.14	-0.10	1.03	0.92	0.02	-0.13	0.05	0.49
Missouri	3.95	-0.12	3.43	-0.21	-0.08	0.00	0.84	0.38	0.06	0.13	-0.30	-0.48
Montana	3.40	-1.27	3.22	-1.53	-1.02	-1.58	1.08	1.08	-0.28	-2.02	0.39	1.42
Nebraska	4.00	-0.02	3.41	-0.29	-0.35	-0.45	0.89	0.51	-0.36	-2.50	0.40	1.44
Nevada	3.83	-0.38	3.83	2.41	-0.51	-0.72	0.41	-0.87	0.26	1.37	-0.17	-0.11
New Hampshire	4.55	1.14	3.51	0.32	0.56	1.09	1.12	1.17	0.07	0.19	-0.71	-1.60
New Jersey	4.35	0.71	3.54	0.55	0.26	0.58	0.47	-0.69	0.19	0.94	-0.12	0.00
New Mexico	3.48	-1.10	3.49	0.23	-0.69	-1.04	0.49	-0.66	-0.08	-0.77	0.28	1.11
New York	3.76	-0.52	3.51	0.33	0.58	1.12	0.18	-1.55	0.11	0.40	-0.62	-1.34
North Carolina	4.26	0.54	3.60	0.90	0.01	0.15	0.61	-0.29	0.00	-0.27	0.05	0.47
North Dakota	4.33	0.68	3.57	0.72	-0.18	-0.17	1.25	1.56	0.00	-0.28	-0.30	-0.49
Ohio	3.90	-0.22	3.41	-0.31	-0.32	-0.40	1.00	0.83	0.09	0.29	-0.28	-0.43
Oklahoma	3.88	-0.26	3.62	1.04	-0.78	-1.18	0.99	0.79	0.29	1.57	-0.24	-0.30
Oregon	4.17	0.33	3.48	0.12	0.26	0.58	0.76	0.15	-0.12	-1.02	-0.22	-0.25
Pennsylvania	3.82	-0.39	3.47	0.06	-0.31	-0.39	0.83	0.34	0.07	0.15	-0.23	-0.29
Rhode Island	3.77	-0.51	3.38	-0.49	-0.08	0.00	0.61	-0.31	0.09	0.27	-0.23	-0.28
South Carolina	4.08	0.16	3.50	0.29	-0.33	-0.42	0.58	-0.38	0.15	0.65	0.18	0.83
South Dakota	4.28	0.57	3.64	1.21	-0.38	-0.50	1.14	1.22	-0.37	-2.57	0.25	1.02
Tennessee	4.11	0.22	3.45	-0.04	0.00	0.14	0.81	0.29	0.24	1.22	-0.39	-0.73
Texas	4.57	1.18	3.74	1.82	0.50	0.99	0.71	0.00	0.43	2.39	-0.81	-1.87
Utah	4.33	0.67	3.48	0.11	-0.06	0.04	1.15	1.25	0.11	0.45	-0.35	-0.62
Vermont	4.31	0.64	3.22	-1.53	0.15	0.39	0.82	0.31	0.03	-0.10	0.09	0.59
Virginia	3.95	-0.11	3.39	-0.43	0.28	0.61	0.64	-0.23	0.09	0.29	-0.44	-0.87
Washington	4.29	0.60	3.37	-0.59	0.89	1.65	0.16	-1.61	-0.14	-1.12	0.01	0.36
West Virginia	3.72	-0.60	3.09	-2.40	-0.64	-0.94	1.09	1.08	0.00	-0.24	0.18	0.83
Wisconsin	4.32	0.65	3.55	0.59	0.00	0.13	0.90	0.55	-0.02	-0.40	-0.11	0.05
Wyoming	4.21	0.43	3.58	0.78	-0.81	-1.24	0.80	0.27	0.17	0.77	0.48	1.65
Mean	4.01		3.46		-0.08		0.71		0.04		-0.13	
Std. Error	0.48		0.15		0.59		0.34		0.16		0.37	

**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
Maine	6.61	0.52	5.21	-1.23	0.08	0.47	0.82	-0.35	-0.08	0.06	0.59	0.78
Maryland	6.56	0.34	5.29	-0.55	0.13	0.63	0.90	0.05	-0.03	0.44	0.27	-0.49
Massachusetts	6.86	1.40	5.31	-0.40	0.63	2.05	0.93	0.23	0.01	0.70	-0.01	-1.61
Michigan	6.13	-1.18	5.15	-1.72	-0.20	-0.33	0.93	0.21	-0.04	0.38	0.29	-0.43
Minnesota	6.69	0.78	5.28	-0.61	0.02	0.31	1.21	1.61	-0.19	-0.82	0.37	-0.11
Mississippi	6.79	1.16	5.56	1.66	-0.10	-0.05	0.75	-0.70	-0.17	-0.64	0.77	1.48
Missouri	6.35	-0.39	5.29	-0.49	-0.18	-0.26	0.83	-0.27	-0.09	-0.02	0.49	0.38
Montana	6.08	-1.35	5.23	-1.02	-0.81	-2.09	1.15	1.29	-0.26	-1.32	0.77	1.49
Nebraska	6.39	-0.24	5.32	-0.25	-0.33	-0.71	1.12	1.16	-0.35	-2.03	0.64	0.96
Nevada	5.97	-1.74	5.42	0.57	-0.49	-1.14	0.59	-1.45	0.04	0.99	0.39	-0.01
New Hampshire	6.85	1.34	5.34	-0.11	0.39	1.37	0.97	0.40	0.01	0.71	0.14	-1.01
New Jersey	6.69	0.79	5.32	-0.29	0.37	1.33	0.85	-0.17	0.03	0.91	0.11	-1.14
New Mexico	6.34	-0.43	5.39	0.27	-0.53	-1.26	0.97	0.42	-0.11	-0.17	0.62	0.87
New York	6.34	-0.43	5.30	-0.45	0.47	1.59	0.42	-2.28	0.08	1.29	0.07	-1.31
North Carolina	6.84	1.31	5.55	1.61	0.16	0.72	0.69	-0.97	-0.10	-0.09	0.53	0.55
North Dakota	6.56	0.34	5.51	1.26	-0.62	-1.52	1.38	2.43	-0.47	-2.94	0.77	1.47
Ohio	6.17	-1.04	5.17	-1.51	-0.30	-0.61	0.90	0.07	-0.02	0.51	0.41	0.06
Oklahoma	6.35	-0.40	5.39	0.28	-0.27	-0.52	0.90	0.08	-0.02	0.50	0.35	-0.20
Oregon	6.37	-0.34	5.27	-0.67	-0.16	-0.20	0.96	0.37	-0.13	-0.32	0.42	0.09
Pennsylvania	6.42	-0.16	5.21	-1.20	-0.01	0.23	0.75	-0.70	0.02	0.80	0.45	0.22
Rhode Island	6.33	-0.46	5.27	-0.73	0.11	0.57	0.47	-2.08	0.02	0.77	0.47	0.31
South Carolina	6.75	1.02	5.57	1.81	-0.03	0.17	0.67	-1.09	-0.05	0.27	0.60	0.80
South Dakota	6.71	0.85	5.52	1.39	-0.37	-0.80	1.23	1.71	-0.44	-2.69	0.75	1.42
Tennessee	6.82	1.23	5.37	0.15	0.24	0.95	0.84	-0.24	0.00	0.66	0.36	-0.14
Texas	6.66	0.69	5.42	0.52	0.31	1.15	0.79	-0.46	0.06	1.13	0.07	-1.28
Utah	6.39	-0.27	5.27	-0.67	-0.17	-0.25	1.15	1.29	-0.07	0.10	0.21	-0.73
Vermont	6.58	0.41	5.20	-1.30	-0.06	0.08	1.01	0.62	-0.09	0.00	0.51	0.47
Virginia	6.78	1.10	5.46	0.91	0.27	1.04	0.90	0.04	-0.05	0.25	0.20	-0.78
Washington	6.41	-0.17	5.29	-0.52	0.12	0.60	0.75	-0.66	-0.08	0.05	0.33	-0.28
West Virginia	6.44	-0.08	5.21	-1.23	-0.30	-0.62	0.82	-0.32	-0.02	0.52	0.73	1.35
Wisconsin	6.35	-0.40	5.26	-0.76	-0.26	-0.50	1.10	1.03	-0.17	-0.67	0.43	0.13
Wyoming	6.49	0.10	5.43	0.65	-0.50	-1.18	0.98	0.48	-0.07	0.16	0.64	0.96
Mean	6.46		5.35		-0.09		0.89		-0.09		0.40	
Std. Error	0.29		0.12		0.35		0.20		0.13		0.25	



### 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.