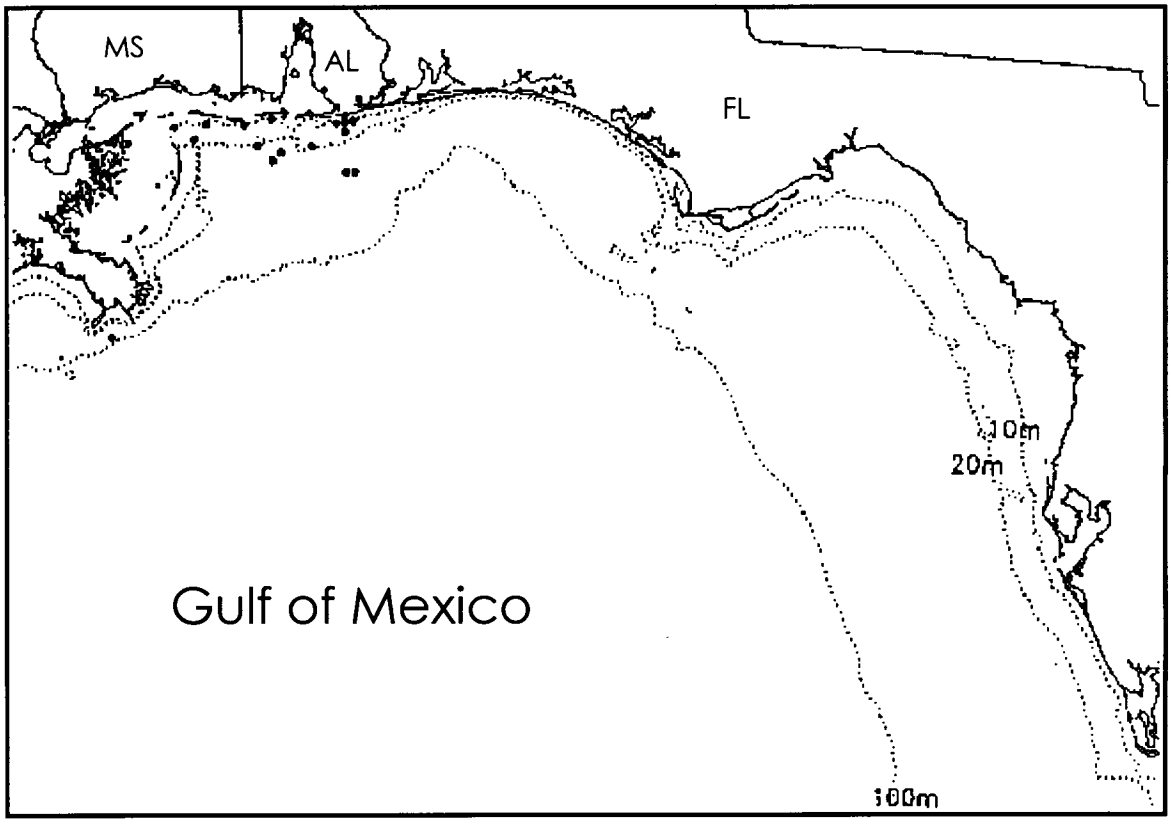
OCS Study
MMS 2000-065

Coastal Alabama Offshore Natural Gas Economic Projection Model



MMS U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region

OCS Study
MMS 2000-065

Coastal Alabama Offshore Natural Gas Economic Projection Model

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ABSTRACT

This document summarizes a Microsoft Excel®-based economic projection model developed as part of a series of investigations analyzing the social and economic impact of the Coastal Alabama offshore gas industry on Gulf Coast states. The model forecasts economic effects of the offshore gas industry on Mobile County, the rest of Alabama, and the combined economies of Louisiana and Texas. Economic impact multipliers from a specially-developed IMPLAN model, combined with estimates of industry expenditures on offshore exploration, development, and production drive the model. The model estimates past economic effects and forecasts them through 2020. Future industry activity in the Destin Dome area of the Eastern Gulf of Mexico Results are also included. The model described in this document calculates the economic effects found in the study "Economic Effects of Coastal Alabama and Destin Dome Offshore Natural Gas Exploration, Development, and Production." This study is the third in a series of investigations analyzing the social and economic impact of the Coastal Alabama offshore gas industry on Gulf Coast states.

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1. General Description of File Contents IO98 - 4 sector.xls

The economic projection model used in this coastal Alabama study is contained in the Microsoft Excel 97 file **IO98 - 4 sector.xls**. Each item is described in further detail below. The file contains the following:

Estimates of Offshore Operator Spending

The **Expenditures worksheet** tabulates offshore operator and related government spending to explore, develop, and produce offshore Coastal Alabama fields. This worksheet also tabulates the allocation of spending between Mobile County, the rest of Alabama, and LA/TX.

IMPLAN Multipliers

The **Multipliers worksheet** shows economic effects resulting from each $1 million of spending on offshore activities.

Calculation of Economic Effects: Mobile, Alabama, and LA/TX

The worksheets entitled **Mobile IMPLAN / Alabama IMPLAN / LATX IMPLAN** calculate the economic effects of past and future offshore gas production in their respective impact regions.

Charts Depicting Economic Effects: Mobile, Alabama, and LA/TX

For each producing region, a series of charts (on worksheets **MO_Charts / AL_Charts / LATX_Charts**) are generated that graphically depict the economic effects shown in tabular form on the respective worksheets described above. Virtually all combinations of activities, producing regions, impact regions, and levels of aggregation are depicted on the chart worksheets. One worksheet is devoted to each impact region. Another sheet, **Exp_Charts**, graphically depicts the spending streams tabulated on the **Expenditures worksheet**.

Settings and Find Results Worksheets

The **Settings worksheet** contains user parameters. The **Find Results worksheet** contains tools to assist the user in locating model results. Use of these worksheets is described below.

2. Overview of Calculations

Figure 1 shows the general flow of calculations in the projection model. First, the estimated past and projected future spending on offshore exploration, development, and production (and associated government spending) is imported from supporting documents. Spending is tabulated by producing region (AL State, Mobile OCS, and Destin Dome OCS). The spending is then allocated between the three impact regions (Mobile County, the rest of Alabama, and LA/TX). Total spending in each impact region is then multiplied by a set of IMPLAN multipliers to obtain the total economic effects in each impact region.

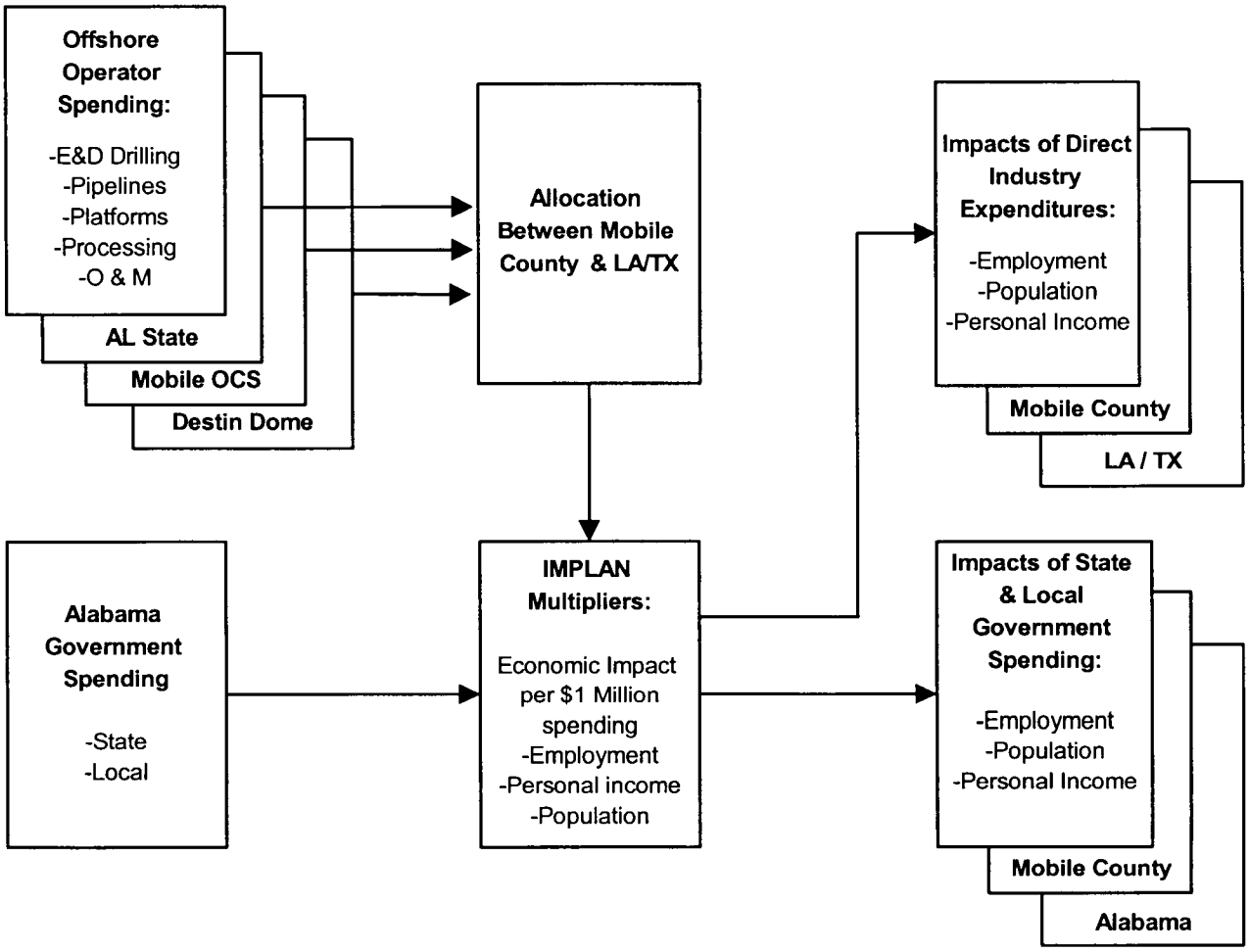


Figure 1. General Flow of Calculations

3. Offshore Operator Expenditures

Offshore operator expenditures to explore, develop, and produce Coastal Alabama offshore natural gas are tabulated on the **Expenditures worksheet**. The general layout of the worksheet is shown in Figure 2. Raw data come from supporting spreadsheets or are calculated internally. Expenditures are tabulated for four producing regions:

1. Alabama State—production occurring in Alabama state waters;
2. Mobile OCS—production occurring in the Mobile area of federal OCS waters offshore Alabama;
3. Coastal Alabama— the sum total of production occurring in state and federal waters offshore Alabama (i.e., producing areas 1 and 2); and

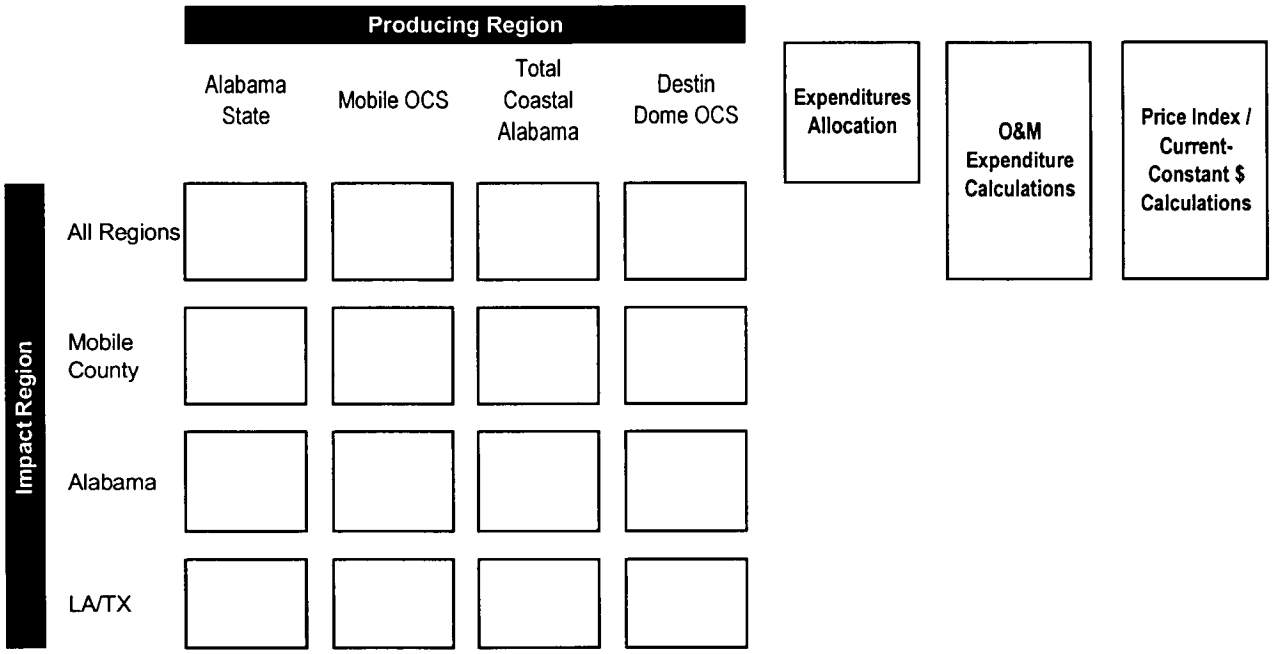


Figure 2. Overview of **Expenditures Worksheet**

4. Destin Dome OCS—production occurring in the Destin Dome area of federal OCS waters in the Eastern Gulf of Mexico (offshore Florida).

For each producing region, expenditures for five offshore development activities[1] and, where applicable, related government spending are tabulated from 1982 through 2020. Expenditures for each activity are then allocated across three geographical impact regions. This allocation describes how much of each dollar spent by operators on offshore development activities is actually spent in the impact region. The user may change any of these allocations, which are found in the range **Spending_Allocation**. Of course, expenditure allocations must sum to one for each activity.

The first sets of expenditures shown on Figure 2 are for all regions (in current/constant dollars). Below are the expenditures for each impact region in constant dollars. The user may choose to use any year's dollar as a baseline constant dollar.[2] The baseline constant dollar can be specified on the **Settings worksheet**.

At the head of each allocated expenditure column is a cell with a text string (e.g., **_MOB.V.DD.PLATFORM**). These strings are the named ranges used to identify the arrays in

[1] Exploratory & Development Drilling, Pipeline Contracting, and Platform Fabrication & Installation each have a supporting spreadsheet detailing how annual totals are calculated. See the appendices for a description of these calculations. O&M expenditures are calculated in the worksheet, based on the production forecast developed in the History Report.

[2] Nominal dollars are converted to constant dollars using the U.S. Dept. of Labor, Bureau of Labor Statistics Producer Price Index for capital equipment. If constant dollars of years later than 1998 are used, the price index must be updated.

matrix algebra calculations (on subsequent worksheets). The name is shorthand describing the contents of the array, for example:

MOB.V.DD.PLATFORM

MOB.	= Mobile County Spending
V.	= Vector
DD.	= Destin Dome OCS Production
PLATFORM	= Platform Fab. & Installation Activity

is the vector describing expenditures occurring in Mobile County for Platform Fabrication and Installation associated with Destin Dome OCS development. Similar nomenclature applies to matrices of total expenditures and IMPLAN multipliers throughout the workbook.

4. IMPLAN Multipliers

The worksheet **Multipliers** contains all of the IMPLAN multipliers developed for the study, as described in section 3.2 of the report. Calculation of IMPLAN multipliers is exogenous to this worksheet. The IMPLAN model used for this study generates multipliers per $1 million of spending in $1995. The multipliers are then adjusted to reflect spending of $1998. As described above, the user can set the baseline year to a different year if desired. The IMPLAN multipliers will automatically adjust to reflect a different base year.

Three sets of multipliers are included, reflecting the three impact areas: Mobile County, the rest of Alabama, and LA/TX. Multipliers are only included where applicable; e.g., there is no LA/TX multiplier for government spending since all state and local government spending from Coastal Alabama development occurs in Alabama. Multipliers for direct effects are included on the worksheet, although all data presented in the report are total effects. Indirect and induced effects can be calculated as the difference between total and direct effects.

Multipliers are developed for employment, total place of work (PoW) personal income, and population. For employment and income, multipliers are presented at 1-digit SIC code-level

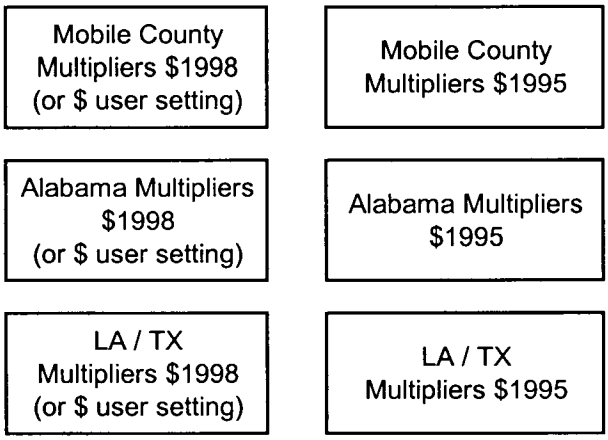


Figure 3. Overview of Multipliers Worksheet

aggregation[3]. Population multipliers are not disaggregated by industry; only the total for each activity is provided. IMPLAN Pro develops Type 3 multipliers, which do not include a population component. To estimate the population multipliers, Type I population multipliers from the earlier 1996 IMPLAN work were used. They were scaled to equilibrate the employment/population ratio from previous work with the new employment multipliers developed in the current study.

5. Calculation of Economic Effects

All calculations of economic impact occur on the three impact region-specific worksheets: **Mobile IMPLAN, Alabama IMPLAN**, and **LATX IMPLAN**. The general layout of the worksheets, shown on Figure 4, is identical except that some activities are not present in all regions, e.g., LA/TX sees no economic effect from Alabama government spending. Each table contains historical estimates from 1982 and forecasts through 2020. Employment impacts, with a blue background, are in the top section of each worksheet. Personal Income impacts are below with a gray background.

Economic effects are presented in four levels of aggregation:

- By Industry Sector—The most disaggregated presentation, effects are broken into industry sectors roughly equivalent to 1-digit SIC codes. An eleventh category, Drilling, is added to account for the Exploratory and Development Drilling component of the Oil & Gas sector.
- By Industry Group—This aggregation merely combines industry sectors described above into six Industry Groups, primarily to aid in presentation. The user can modify the allocation of Industry Sectors into Industry Groups.
- By Activity—This depicts the total economic effects of each offshore development activity side-by-side, rather than the combined effects of all activities.
- All Activities—The total effects of all activities over all economic sectors.

Multiplying the vectors of operator spending from **Expenditures** and the IMPLAN coefficients from **Multipliers** yields the total economic effects of Coastal Alabama exploration, development, and production. An example of how economic effects are calculated is shown on Figure 5. All matrix multiplication operations utilize named ranges that employ a shorthand for identifying the range's contents. Each result table has a similar range name, which is used in the results search algorithm.

[3] "Oil & Gas Extraction" is substituted for mining, because 100% of direct and close to 100% of total economic effects are attributable to the Oil & Gas Extraction subsector.

Economic Effects Worksheets - General Layout

Employment Effects

Producing Region	All Activities by Industry Sector	All Activities by Industry group	Population: All Activities	Exp/Dev Drilling by Industry Sector	Pipelines by Industry Sector	Platforms by Industry Sector	Onshore Treatment by Industry Sector	O&M by Industry Sector	Govt. Spending by Industry Sector	All Activities by Activity	All Activities by Industry Group
AL State Prod.											
Mobile OCS Prod.											
Total Coastal AL Prod.											
Destin Dome OCS Prod.											

Income Effects

Producing Region	All Activities by Industry Sector	All Activities by Industry group		Exp/Dev Drilling by Industry Sector	Pipelines by Industry Sector	Platforms by Industry Sector	Onshore Treatment by Industry Sector	O&M by Industry Sector	Govt. Spending by Industry Sector	All Activities by Activity	All Activities by Industry Group
AL State Prod.											
Mobile OCS Prod.											
Total Coastal AL Prod.											
Destin Dome OCS Prod.											

Figure 4. Overview of Economic Results Worksheets

Mobile County Share of Destin Dome OCS Pipeline Contracting Expenditures 1982 - 2020

1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
.
.
.
2016
2017
2018
2019
2020

[39 X 1]
[_MOB.V.DD.PIPELINE]

X

Employment Multipliers: Jobs per $1 Million Spending in Mobile County on Pipeline Contracting (by industry sector)

Agriculture	O&G Extraction	. . .	Services	Govt.	Misc.

[1 X 10]
[_MOB.V.TOTEMP.EXP/DEV]

=

Mobile County Employment by Industry Sector from Pipeline Contracting Expenditures Related to Destin Dome OCS Development (1982 - 2020)

	Agriculture	O&G Extraction	. . .	Services	Govt.	Misc.
1982	#	#		#	#	#
1983	#	#		#	#	#
1984	#	#		#	#	#
1985	#	#		#	#	#
1986	#	#		#	#	#
1987	#	#		#	#	#
1988	#	#		#	#	#
1989	#	#		#	#	#
1990	#	#		#	#	#
1991	#	#		#	#	#
.	.	.		.	.	.
.	.	.		.	.	.
.	.	.		.	.	.
2016	#	#		#	#	#
2017	#	#		#	#	#
2018	#	#		#	#	#
2019	#	#		#	#	#
2020	#	#		#	#	#

[39 X 10]
[MoEmEcPiDe]

Figure 5. Example of Typical Matrix Multiplication Procedure

Note that most of the table titles and are concatenated cell functions—use caution when editing what appears to be a text label. The worksheet also contains hidden cells—always ensure a cell is actually empty before changing what looks to be an empty cell. The top left cells of each result table range contain formulas used to generate the title of the table. For printing purposes, these cells can be hidden so only the title of the table shows. The two panels in Figure 6 show a result table with the top left cells showing (left panel) and hidden (right panel). To hide/unhide these cells, press the **Hide Table Data / Show Table Data** buttons on the **Settings** worksheet.

Results Table Showing Title Data Cells

All Activities
Mobile County Employment
Expenditure Cat
Alabama State

Table B-1
Mobile County Employment by Expenditure Category Resulting from All Activities -- Alabama State Production --

	Exp/Dev Drilling	Pipelines	Platforms	Onshore Gas Treatment	O&M	Local Taxes	TOTAL
1982	118.4	-	-	-	-	-	118.4
1983	132.2	-	-	-	-	-	132.2
1984	265.1	-	-	-	-	-	265.1
1985	324.5	7.9	-	-	-	-	332.4
1986	171.6	48.2	-	95.1	-	-	314.9
1987	99.4	-	134.3	560.2	-	-	794.0
1988	99.5	-	131.3	45.6	52.4	0.9	329.6
1989	24.0	35.8	-	221.0	69.4	3.3	353.5
1990	140.9	77.4	122.1	466.7	102.4	2.0	911.6
1991	347.3	138.5	157.2	452.7	163.6	4.0	1,263.3
1992	156.1	106.4	227.3	484.7	551.1	9.0	1,534.6
1993	150.7	56.3	224.8	833.4	632.0	22.9	1,920.2
1994	40.3	-	32.2	-	1,081.5	73.5	1,227.5
1995	90.9	9.3	51.7	-	987.6	46.6	1,186.1
1996	41.3	10.7	28.4	-	959.7	70.0	1,110.1
1997	163.7	18.4	-	37.7	986.9	78.8	1,285.4
1998	46.0	-	14.3	-	1,113.7	113.8	1,287.8
1999	156.7	-	28.6	38.0	1,162.9	122.9	1,509.0
2000	28.8	-	14.3	-	1,228.6	131.3	1,403.0

Results Table With Title Data Cells Hidden

Table B-1
Mobile County Employment by Expenditure Category Resulting from All Activities -- Alabama State Production --

	Exp/Dev Drilling	Pipelines	Platforms	Onshore Gas Treatment	O&M	Local Taxes	TOTAL
1982	118.4	-	-	-	-	-	118.4
1983	132.2	-	-	-	-	-	132.2
1984	265.1	-	-	-	-	-	265.1
1985	324.5	7.9	-	-	-	-	332.4
1986	171.6	48.2	-	95.1	-	-	314.9
1987	99.4	-	134.3	560.2	-	-	794.0
1988	99.5	-	131.3	45.6	52.4	0.9	329.6
1989	24.0	35.8	-	221.0	69.4	3.3	353.5
1990	140.9	77.4	122.1	466.7	102.4	2.0	911.6
1991	347.3	138.5	157.2	452.7	163.6	4.0	1,263.3
1992	156.1	106.4	227.3	484.7	551.1	9.0	1,534.6
1993	150.7	56.3	224.8	833.4	632.0	22.9	1,920.2
1994	40.3	-	32.2	-	1,081.5	73.5	1,227.5
1995	90.9	9.3	51.7	-	987.6	46.6	1,186.1
1996	41.3	10.7	28.4	-	959.7	70.0	1,110.1
1997	163.7	18.4	-	37.7	986.9	78.8	1,285.4
1998	46.0	-	14.3	-	1,113.7	113.8	1,287.8
1999	156.7	-	28.6	38.0	1,162.9	122.9	1,509.0
2000	28.8	-	14.3	-	1,228.6	131.3	1,403.0

Figure 6. Sample Results Table

Using the Navigation Tool to Find Results

The **Find Results** worksheet provides a searching tool to display tabular model results. The tool aids users unfamiliar with the file layout in finding model results. The tool is simple:

1. Press the **Reset List** button. This will create a long list of results in 5 columns. At the head of each column is a small downward-pointing arrow.
2. Click on the arrow and choose the desired criterion from the pull-down menu. For example, under "Impact Region" the choices are between Mobile County, Alabama, and LA/TX. As criteria are chosen, the list of potential matching results is filtered and becomes shorter. Continue across the columns (filtering can be done in any order) until the one desired result tabulation is shown. The filter result in the figure below would show Employment effects by Economic Sector on Mobile County resulting from Pipeline Contracting in the Destin Dome OCS.

Impact Region	Producing Region	Economic Effect	Offshore Activity	Breakdown
Mobile County	Destin Dome	Employment	Pipeline Contracting	Economic Sector

3. Press the **Find Results** button. You will be transported to the appropriate table of model results in the IMPLAN worksheets.

6. Charting Model Output

Graphical depictions of model output are found on the worksheets **Exp_Charts, MO_Charts, AL_Charts,** and **LATX_Charts. Exp_Charts** contains charts plotting expenditures, and the others contain charts showing economic effects in each of the three impact regions. All results on the Chart worksheets are drawn from the **Expenditures** and IMPLAN calculation spreadsheets. The general layout is shown in Figure 7.

Do not change the zoom setting on the chart worksheets from 66%.

Due to a bug in Excel, the arrangement of chart items (titles, legend, chart area, etc.) will become garbled if the zoom is changed to a different value and saved[4]. The Excel application may also "bog down" or freeze when editing charts. According to Microsoft, the only recourse in this situation is to close and restart Excel. Performance will then temporarily improve.

	Producing Region					
Economic Effect	Alabama State	Mobile OCS	Total Coastal Alabama	Destin Dome OCS	Coastal Al. (by Prod. Region)	Coastal Alabama and Destin Dome
Employment (Total)						
Employment by Activity						
Employment by Economic Sector						
Personal Income (Total)						
Employment and Population						
Population						

Figure 7. Economic Effect Chart Worksheets General Layout

[4] For more information, see Microsoft Knowledge Base article Q142592. The article states that the problem has been fixed in Microsoft Excel 8.0/97. Yet the problem persists in this document.

All chart titles, axis labels, and footers are linked to cells at the far left of each row of charts. Charts that are included in the report include the figure number in the title. Other charts use a generic naming scheme.

Changing the Aggregation of Industry Groups

Charts depicting economic effects "by Economic Sector" actually use an aggregation of six of the eleven IMPLAN sectors. The number was reduced to aid in presentation—eleven sectors are too many to display on a small chart. The user may choose to organize the eleven sectors differently if desired. On the **Settings worksheet**, name the six aggregate groups and choose how the eleven IMPLAN sectors are mapped into them.

Appendix A

Instructions for Estimating Exploratory and Development Drilling Costs

Overview

1. Use the MS Excel 97 file "ExpDev Drilling Costs.xls" to estimate exploratory and development drilling (E&D) costs for Alabama state and Federal OCS production from 1982 through 2010.
2. Copy spending estimates into forecasting model "IO98 - 4 sector.xls".

---

1. Use the MS Excel 97 file "ExpDev Drilling Costs.xls" to estimate exploratory and development drilling (E&D) costs for Alabama state and Federal OCS production from 1982 through 2010.

The general file layout is shown in Figure A.1. The spreadsheet contains numerous buttons to assist the user in navigating the spreadsheet contents[1]. The user may choose to view either Alabama state or Federal OCS wells by pushing the appropriate button, which calls a macro to freeze the spreadsheet panes and display the appropriate information. The user can also filter the data by displaying Norphlet or Miocene wells only. The spreadsheet uses data from Alabama Oil & Gas Board and MMS databases to determine the target reservoir of the well (Norphlet or Miocene), the amount of time spent on the drilling process, and whether the well is successfully completed. Using the assumed per-well costs shown in the table below, the algorithm then spreads drilling and, if applicable, well completion expenditures over the time period of drilling activity. The spreadsheet contains a section for Alabama State and Federal OCS areas, with slight modifications to the algorithm in each due to differences in source data provided by Alabama and MMS.

Exploratory & Development Drilling Cost Assumptions

	Miocene	Norphlet	Cretaceous
Drilling Expenditure per well:	$1,000,000	$20,000,000	$10,000,000
Completion Expenditure per well†:	$500,000	$5,000,000	$2,000,000

†Completion costs apply if the well successfully finds gas.

The user may modify the expenditure forecasts by either changing the per-well costs or by adding data on new or potential wells. At the bottom of the well list for both Alabama and OCS

[1] The spreadsheet contains Visual Basic routines to automate some tasks. MS Excel's default configuration and some virus detection programs may prompt the user that the spreadsheet file contains macros and asks if the macros should be disabled. Choose "NO" to open the spreadsheet with macros ENABLED.

wells, blank spaces have been provided to add new wells. The user must provide a spud date, total depth date, total depth, and completion status[2]. Descriptive information on the well field location, number, and operator can also be entered; but these do not affect the expenditure calculations. Spending totals are automatically updated.

2. Copy E&D spending estimates into forecasting model "IO98 - 4 sector.xls".

The Alabama state and Federal OCS E&D spending totals by year are located at the bottom right of the spreadsheet. To navigate to the totals, use the {F5}key or "Ctrl-G" key combination to Go To the following named ranges:

Alabama State: Alabama_State_Spending_by_Year

Federal OCS: Federal_OCS_Spending_by_Year

Open the spreadsheet forecasting model "IO98 – 4 Sector.xls". For either region, select and copy the total E&D spending cells from 1982 through 2010[3]. Activate the "Expenditures" worksheet in "IO98 – 4 Sector.xls". E&D expenditures for Alabama state and Mobile OCS production are located at cells D7 and Q7, respectively. To update E&D costs, simply paste the information from years 1982 through 2010 from "ExpDev Drilling Costs.xls". Excel's Edit—Paste Special—Transpose menu option must be used because the source data are arrayed horizontally and the destination is arrayed vertically. The Transpose function will also convert the expenditures to values.

[2] For Alabama state wells, entering "gas" in the status column indicates that the well was successfully completed and incurred a completion cost. For Federal OCS wells, the equivalent status code is "BOREHOLE COMPLETED". Entering any other status code, or leaving the cell blank, indicates a failed well which incurred no completion costs.

[3] E&D spending estimates begin in 1980, but IMPLAN-based forecasts begin in 1982. E&D forecasts end in 2010 because no new wells are expected after that year. E&D spending past 2010 is assumed to be zero.

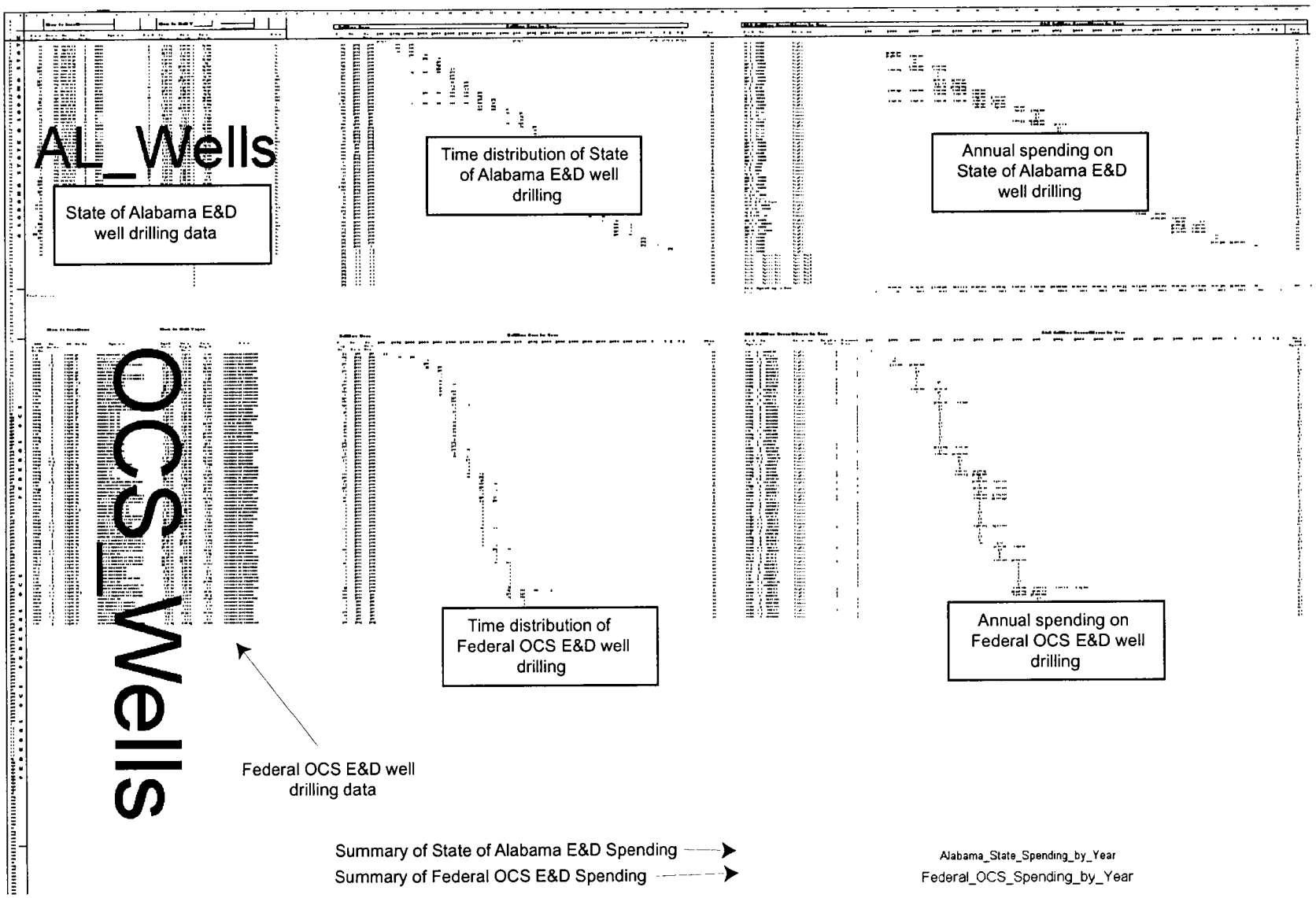


Figure A.1. Overview of spreadsheet layout of "E&D Drilling Costs.xls"

Appendix B

Instructions for Estimating Offshore Structure Costs

Overview

1. Use the MS Excel 97 file "Platform Costs.xls" to estimate platform and other offshore structure costs for Alabama state and Federal OCS production from 1982 through 2003.
2. Copy spending estimates into forecasting model "IO98 - 4 sector.xls".

---

1. Use the MS Excel 97 file "Platform Costs.xls" to estimate platform and other offshore structure costs for Alabama state and Federal OCS production from 1982 through 2003.

The general file layout is shown in Figure B.1. The spreadsheet uses data from Alabama Oil & Gas Board and MMS databases to determine the type of structure installed and the installation date. Using published and operator-provided data and the assumed structure costs in the table below, the algorithm then spreads construction spending over the time periods indicated in the table. The spreadsheet contains a section for Alabama State and Federal OCS areas, with slight modifications to the algorithm in each due to differences in source data provided by Alabama and MMS.

Offshore Structure Expenditure Assumptions

	Const Time (Years)	Cost ($Million)
Norphlet Production Platform	2	20.0
Norphlet Well Platform	1.5	12.0
Norphlet Caisson	0.5	5.0
Miocene Production Platform	0.5	5.0
Miocene Well Platform	1	6.0
Miocene Caisson	0.25	1.5
Living Quarters Platform	0.5	5.0
Bridge-Connected Well Platform	1	70%
Production-Processing Platform	2	40.0

The user may modify the expenditure forecasts by either changing the facility costs or by adding data on new or potential structures. At the bottom of the list for both Alabama and OCS structures, blank spaces have been provided to add new entries. The user must provide the type of structure, the installation date, and the type of gas processed. Descriptive information on the field location, number, and operator can also be entered; but these do not affect the expenditure calculations. Spending totals are automatically updated.

2. Copy spending estimates into forecasting model "IO98 - 4 sector.xls".

The Alabama state and Federal OCS platform spending totals by year are located at the bottom right of the spreadsheet. To navigate to the totals, use the {F5}key or "Ctrl-G" key combination to Go To the following named ranges:

Alabama State: AL_State_Spending_by_Year

Federal OCS: Federal_OCS_Spending_by_Year

Open the spreadsheet forecasting model "IO98 – 4 Sector.xls". For either region, select and copy the total platform spending cells from 1982 through 2003[1]. Activate the "Expenditures" worksheet in "IO98 – 4 Sector.xls". Platform expenditures for Alabama state and Mobile OCS production are located at cells F7 and S7, respectively. To update E&D costs, simply paste the information from years 1982 through 2010 from "Platform Costs.xls". Excel's Edit—Paste Special—Transpose menu option must be used because the source data are arrayed horizontally and the destination is arrayed vertically. The Transpose function will also convert the expenditures to values.

[1] Forecasts end in 2003 because no new structures are expected after that year. Platform spending past 2003 is assumed to be zero.

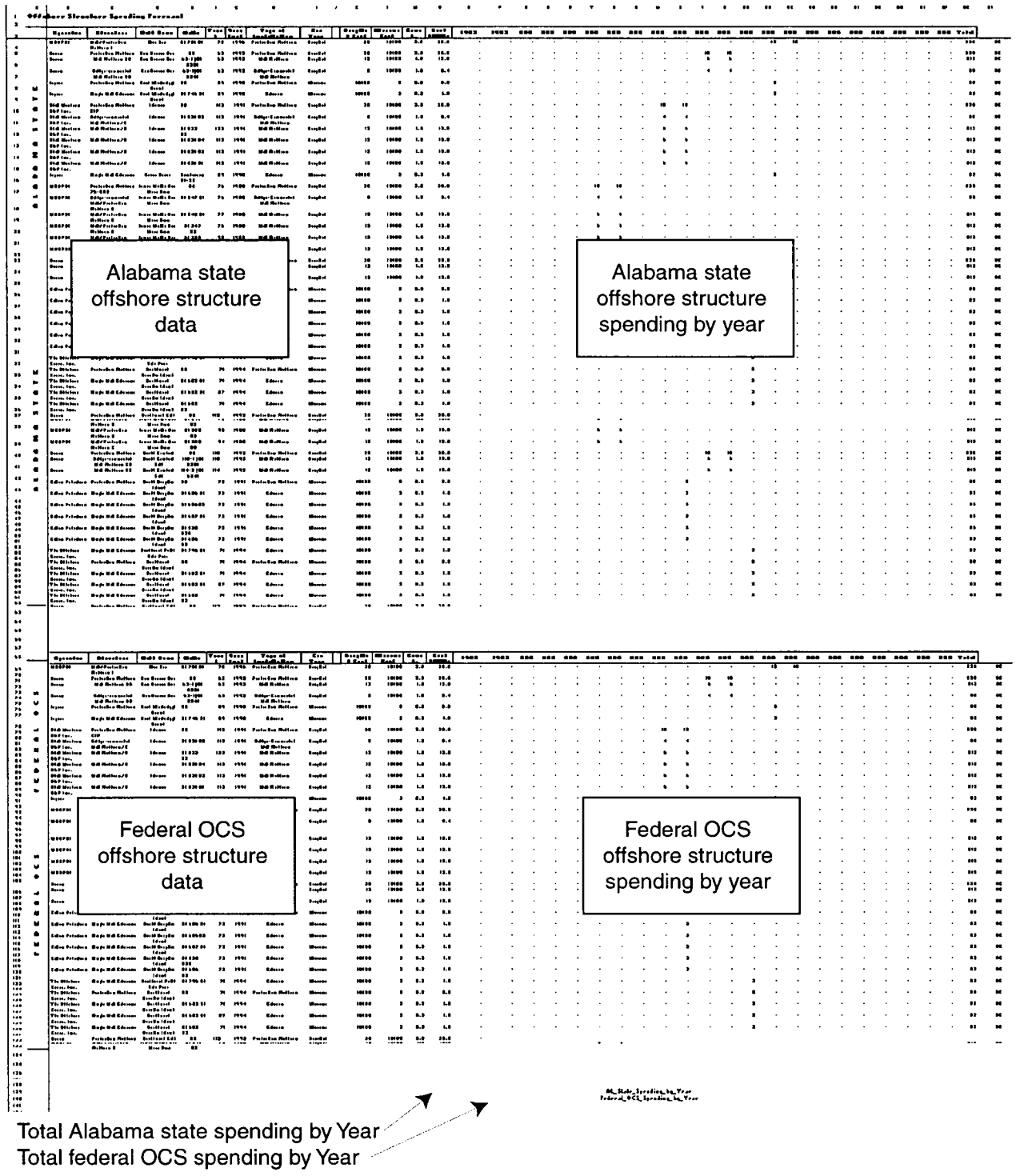


Figure B.1. Overview of Spreadsheet Layout "Platform Costs.xls"

Appendix C

Technical Addendum: IMPLAN Modeling Summary/Modifications

Introduction

This document provides a detailed description of the IMPLAN model developed in support of the study "Economic Effects of Coastal Alabama and Destin Dome Offshore Natural Gas Exploration, Development, and Production." For the interested analyst, this document provides a more thorough overview than is presented in the final study.

Antecedents

The Minnesota IMPLAN Group's (MIG's) ***IMPLAN Professional*** economic input-output modeling system was used to develop multipliers for estimating the local and regional economic impacts of development and production of Mobile Bay state and federal offshore natural gas resources.[1] An earlier DOS version of IMPLAN (MI91-F) was used by Foster Associates for portions of previous studies of Mobile Bay OCS gas development (Foster Associates 1994, 1996). Subsequently MIG developed a Windows/NT version, which incorporates a number of changes and improvements in the methodology. Of particular importance to the current analysis was application of the IMPLAN system to estimate all local and regional impacts in the 1996 update of the 1994 Mobile Bay OCS gas study (see Foster Associates 1996). In that study, the DOS version of IMPLAN was used for the Mobile County, statewide Alabama and Louisiana-Texas study areas. The 1994 and 1996 studies provide the basis for allocating OCS operators' expenditures amongst the IMPLAN model's industry sectors for each phase of OCS gas development and production as well as for local and state government spending of gas industry bonuses, royalties, tax payments and trust fund interest earnings deriving from OCS development.[2]

The sectoral allocation sets are the basic foundation of the impact analysis. They describe the composition of goods and services, by phase, consumed for a given level of output of OCS gas development and production (and related local and state government spending of derived taxes and interest income). Provision of these goods and services to OCS operators and state and local governments by workers and businesses generates income and employment, which over time has a cumulative, multiple effect on the economy. To project the cumulative changes in the local and regional economies it is necessary first to estimate the spending that OCS operators and

[1] Hereafter referred to as IMPLAN. The Minnesota IMPLAN Group, Inc. sells and supports proprietary modeling software and regional economic data sets for estimating economic impacts in every county in the United States. This study used IMPLAN Pro Version 1.1.6008 for Windows/NT and the 1995 (latest available) county data set for Mobile County and the statewide sets for Alabama, Louisiana and Texas.

[2] In the original 1994 work, IMPLAN was used only for the combined Louisiana-Texas study area, while the REMI (Regional Economic Models, Inc.) system of econometric modeling with conjoined input-output inter-industry transactions database was used to estimate impacts in Mobile County and statewide Alabama. Appendix B of the 1994 study, *Model Selection Criteria and Output*, contains a detailed explanation of the modeling methodology and underlying data collection and model calibration exercise to reflect the special conditions that characterize the Mobile Bay OCS gas exploration and development environment. An explanation of the adaptation and application of IMPLAN to the Mobile County and statewide Alabama study areas is provided in Foster Associates (1996).

governments will generate and then estimate the portion that will be expended in the study areas of interest—Mobile County, Alabama statewide and combined Louisiana-Texas (which was done in Section 3), and then apply those forecasts to economic multipliers (whose development is the subject of this sub-section).

Modifications to the IMPLAN Pro Model

To make the IMPLAN Pro model reflect more accurately current economic conditions in the study areas and portray more realistically the effects of changes in OCS spending, it was necessary to modify some of the default values in the Mobile County and Alabama data sets.[3] Three changes were made. First, changes were made in the Mobile County 1995 data set to correct for the absence of three industry subsectors that should be included (the source data from the Bureaus of Economic Analysis and Labor Statistics evidently combined these subsectors' activities with others, and it was necessary to create them in the Mobile County data base so that the impacts of OCS activities would be more accurately reflected). An underlying problem with the IMPLAN database set for Mobile County is the lag in adjusting values to reflect the development of new industries in response to the emergence of the OCS market. The three industry subsectors will be identified below.

The second modification involved changing the values for output and earnings per worker in several OCS-related sectors because the default values in the Mobile County data set were much lower than the OCS industry typically pays its specially-qualified type of worker. The changes were necessary to avoid overestimating the numbers of workers that would be directly hired to work on the OCS facilities. No changes were necessary for the statewide Alabama, Louisiana or Texas database sets' output and earnings per OCS worker values. In the case of statewide Alabama, the impact modeling focused on state General Fund spending based on OCS-derived taxes, bonuses and royalties, and from the Forever Alabama Wild Trust's interest earnings. This required separate adjustments, which are described below. For statewide Louisiana and Texas, which were combined into a single regional impact area to account for non-Mobile Bay area sources of OCS-related goods and services, it was not necessary to modify the output and earnings per OCS worker parameter values. These states' data sets already reflect the long establishment of these industries.

The third modification involved construction of a custom set of impact sectors for state and local government (SLG) spending. IMPLAN's default set for SLG spending includes just two subsets: educational and non-educational activities. All of the value of output from these sectors is in the form of employee compensation. As a result, the default set of industry sectors generates no intermediate inputs of goods and services (the indirect effects, reflecting the stimulus of government spending on supplier industries). Only induced effects from the government workers' consumption spending are modeled in the basic IMPLAN. IMPLAN allows users to create new or customized sectors, however. MIG created a special set of government spending activity vectors for the various segments of the public sector (e.g., police, welfare, recreation,

[3] This discussion is fairly technical, and assumes that the reader is somewhat familiar with input-output modeling in general and with the structure and operating procedures of IMPLAN Pro in particular. A full description of the model is beyond the scope of this study, but MIG has a comprehensive Internet website at http:\\www.implan.com that fully describes its products and services. MIG also provides a fully operational demonstration version of the model on CD-ROM, except that it runs only a single county—Larimer, Colorado.

health and natural resources) to account for their consumption of non-labor goods and services. We thus were able to create sets of SLG spending vectors in the form of impact scenarios that combined the payroll and non-payroll expenditures of Mobile County and the Alabama state governments (per their Fiscal Year 1997 budgets) that capture the full range of direct (employee compensation), indirect (suppliers' business) and induced (workers' consumption spending) impacts of their expenditures of OCS-related revenues.

OCS Expenditure Patterns

As noted earlier, the allocation of OCS operators' expenditures among supporting industries is the foundation of the IMPLAN analysis. The composition of industry inputs by phase of Mobile Bay OCS activity was determined in Foster's 1994 work for Chevron USA (Foster Associates 1994) on the basis of surveys of the industry. In Foster's 1996 work, the allocation was refined and applied to the IMPLAN modeling. Table A-1 presents these data, showing the percentage composition of OCS-related outlays, by phase of activity (exploration and development, platform fabrication and installation, pipeline construction, onshore treatment plant construction, and gas production operations and maintenance activities).

These values were used to create impact scenarios for the Mobile County and Louisiana-Texas (or "La-Tx") models. The process involved creating a set of grouped activities (collections of IMPLAN industry sectors for each OCS phase) whose individual elements (or "events" in IMPLAN nomenclature) added up to unity (1.0000). Exploration/Development Drilling would be one group, for example, in which the activities of "new well drilling," "oil and gas exploration" and "other O&G field services," entailing expenditures of 0.138983, 0.172770 and 0.057139, respectively, per unit of total outlay, would be combined as a single "event" into IMPLAN sector 57 with a value of 0.3689 (because that sector covers all subparts of SIC code 138). Similarly, an outlay of 0.05678 would be made per unit of total outlay for "chemicals, n.e.c.", etc., etc., per the table. The group would then be run through the impact modeling with a group value of $1 million. The following image is a print screen of the IMPLAN impact analysis program, illustrating how the data are organized for processing.

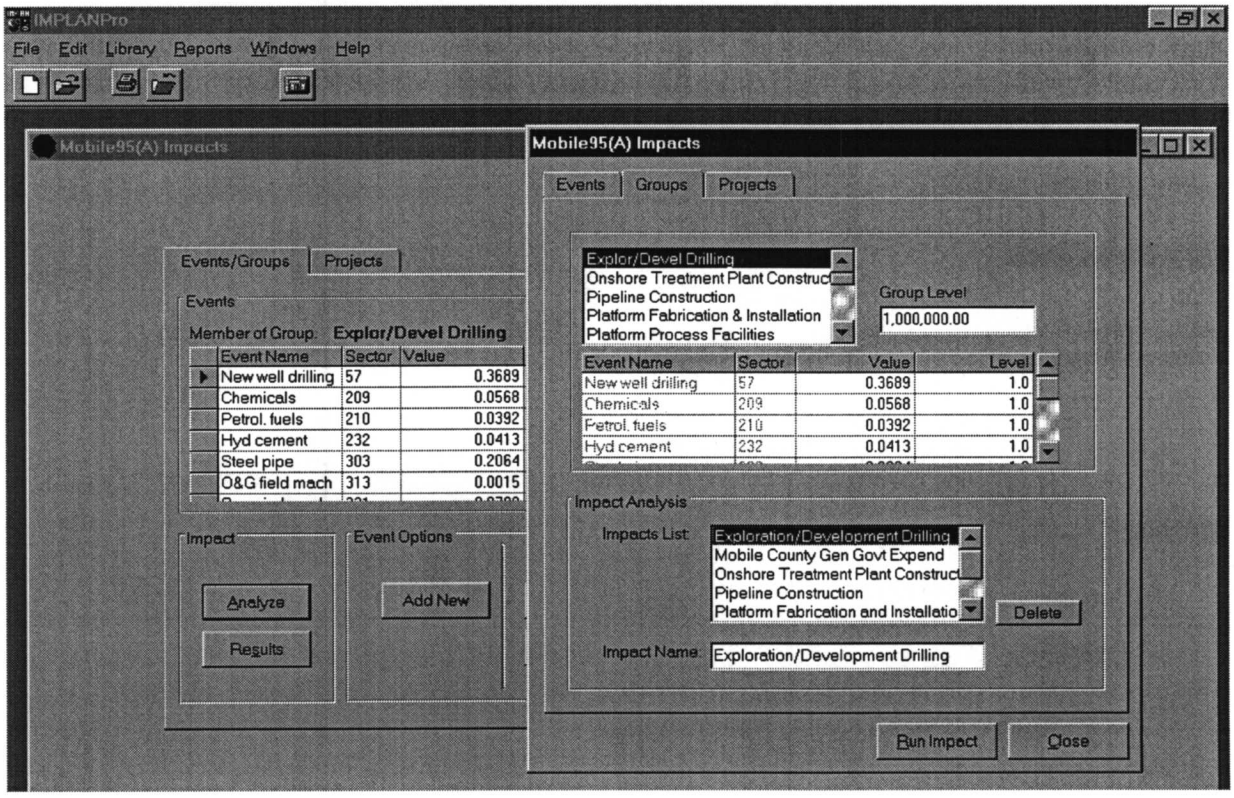

IMPLANPro
File Edit Library Reports Windows Help
Mobile95(A) Impacts
Events/Groups Projects
Events
Member of Group: Explor/Devel Drilling
Event Name Sector Value
New well drilling 57 0.3689
Chemicals 209 0.0568
Petrol. fuels 210 0.0392
Hyd cement 232 0.0413
Steel pipe 303 0.2064
O&G field mach 313 0.0015
Impact
Analyze
Results
Event Options
Add New
Mobile95(A) Impacts
Events Groups Projects
Explor/Devel Drilling
Onshore Treatment Plant Construct
Pipeline Construction
Platform Fabrication & Installation
Platform Process Facilities
Group Level
1,000,000.00
Event Name Sector Value Level
New well drilling 57 0.3689 1.0
Chemicals 209 0.0568 1.0
Petrol. fuels 210 0.0392 1.0
Hyd cement 232 0.0413 1.0
Impact Analysis
Impacts List:
Exploration/Development Drilling
Mobile County Gen Govt Expend
Onshore Treatment Plant Construct
Pipeline Construction
Platform Fabrication and Installatio
Delete
Impact Name:
Exploration/Development Drilling
Run Impact
Close

Table A-1
Composition of OCS Expenditures

No.	Activity	SIC Code	IMPLAN Sector No.	Percentage of Total Outlays (by phase)				
				Exp/Dev Drilling	Pipeline Construct-tion	Platform Fab/Inst.	Onshore Treatment Plant	Produc-tion O&M
1	Oil & gas operations	131	38*					36.3%
2	New gas utility facilities	1629	50*				65.7%	
3	Pipeline construction	1629	50*		46.6%			
4	New well drilling	1381	57*	13.9%				
5	Oil & gas exploration	1382	57*	17.3%				
6	Misc. natural resource facility const.	1629	53*			19.5%		
7	Other O&G field services	1389	57*	5.7%	2.1%	0.2%	0.2%	18.4%
8	Chemicals, nec	2899	209	5.7%		0.0%	0.0%	0.9%
9	Petroleum fuels	291	210	3.9%				4.4%
10	Hydraulic cement	324	232	4.1%				0.7%
11	Steel pipe	3317	303	20.6%	37.1%	0.1%	0.1%	
12	Iron & steel forgings	3462	290**			1.4%	1.4%	
13	Fabricated plate work	3443	284			0.7%	0.7%	
14	Turbines	3511	307			0.8%	0.8%	
15	Construction machinery & equip.	3531	311			1.2%	1.2%	
16	O&G field machinery	3533	313	0.2%	0.1%	14.3%	14.3%	0.0%
17	Special industrial machinery, nec	3559	331**	7.1%	4.6%	5.4%	5.4%	5.1%
18	Pumps & compressors	3561, 63	332		2.9%	0.2%	0.2%	
19	Switchgear	3613	356			0.2%	0.2%	
20	Shipbuilding	3731	392			46.2%		
21	Instrumentation	3823	403**			3.3%	3.3%	
22	Water transport	44	436	4.2%	1.6%	1.1%	1.1%	4.0%
23	Air transport	45	437	1.5%	0.1%	0.2%	0.2%	3.8%
24	Misc. equip. rent/lease	7359	473	6.8%		0.0%	0.0%	1.4%
25	Test/research facilities	8731,2,4	509	5.7%				4.5%
26	Envir/engineering services	871	506	2.6%	4.6%	4.8%	4.8%	14.7%
27	Acctg/misc. business services	872, 79	507	0.5%	0.0%	0.3%	0.3%	4.2%
28	Eating/drinking places	58	454	0.2%	0.1%	0.2%	0.2%	1.7%
	Total			**100 %**	**100 %**	**100 %**	**100 %**	**100 %**

* Sector with modified output and earnings per worker (see text).

** Sector added to Mobile County database (see text).

Source: Tables 3.2-1 through 3.2-6.

Note:
SIC code 1629 covers "Heavy Construction, NEC" (industrial nonbuilding structures construction), which maps into IMPLAN sectors 50 and 53. IMPLAN did not have separate sectors for oil & gas-related pipeline construction, offshore platform construction or for gas treatment plant construction (on- or offshore). All IMPLAN has are its sectors 50 (New Utility Structures) and 53 (New Mineral Extraction Facilities). Both of the IMPLAN sectors comprise an amalgam of SIC sectors 15, 16, and 17 (general building contractors, heavy construction contractors, and special trade contractors, respectively). It was decided that construction of pipelines and gas treatment plants was covered by new utility structures while platforms were covered by new mineral extraction facilities. Thus the application of one SIC code (1629) to two different IMPLAN sectors.

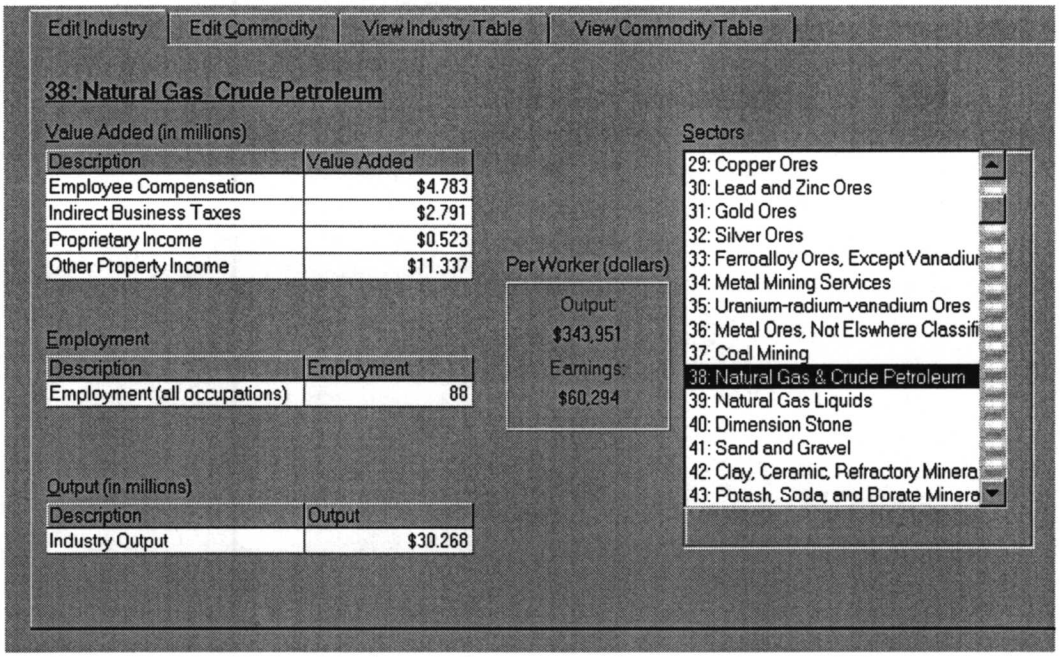
The IMPLAN program then generates reports showing the direct, indirect and induced effects for each sector in the economy for a variety of impact parameters, including total industry output, personal income and employment. The impact reports can be aggregated to consolidate the number of industry sectors presented (there are over 500 in the local and regional economies), with the most usual format being values at the 1-digit SIC level. The final product of the exercise was a set of coefficients for the impacts of expending one million dollars in each OCS activity phase. These coefficients were then used to calculate the year-to-year total values of changes in income and employment in Mobile and LA/TX, as a function of the projected OCS annual expenditures during the study period.

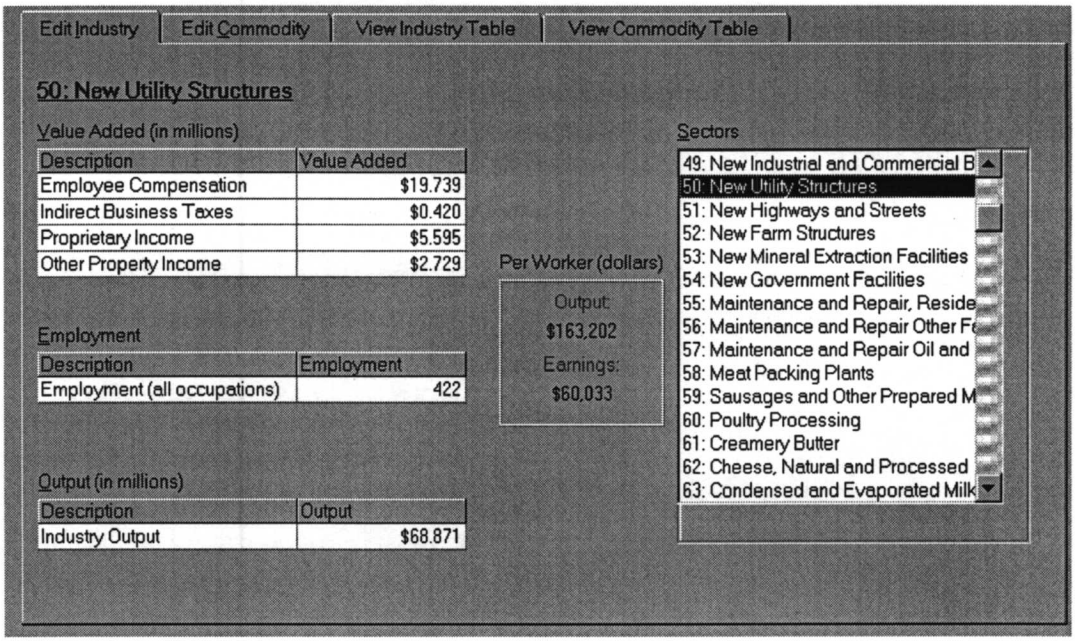
Revisions to Industry Sector Data

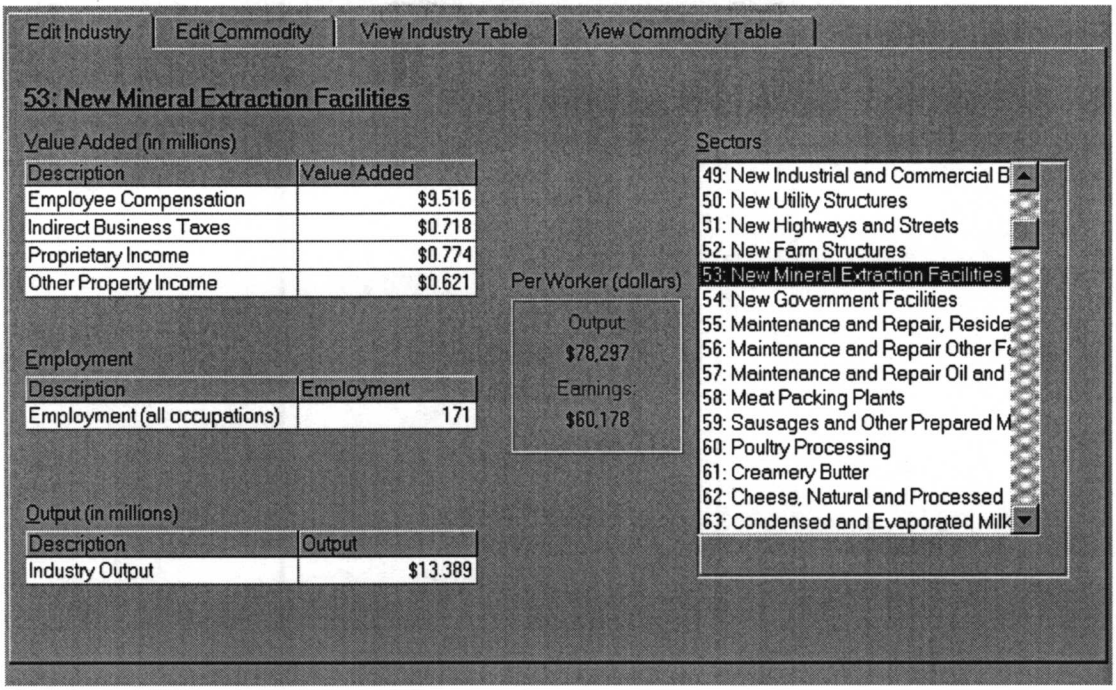
In the column labeled IMPLAN Sector No. in Table A-1, several of the items have asterisks attached. Sectors 38, 50, 53 and 57 (with a single asterisk) are directly related to OCS gas facility construction and operation activities, and the default values in the Mobile County database for output and earnings per worker are significantly lower than what the industry actually pays for the specially skilled workers used in offshore work. This reflects the (inevitable) lag in model providers being able to obtain timely data from the national sources (BEA and BLS) on changes in the structures of local economies: in the case of Mobile County, the database does not yet account adequately for the development of the Mobile Bay OCS gas industry. The default values in the IMPLAN database for annual earnings per worker in these sectors are on the order of $20,000 to $25,000, whereas in reality the gross earnings per OCS worker (including benefits and employer contributions) run around $60,000 per year. Surveys of OCS operators provided the basis for modifying the model. The problem with using the default values for these sectors is that they would greatly overestimate the number of workers that would be hired per million dollars of construction/operation outlay. This bias would lead to the incorrect conclusion that many more people would have to be recruited to work on the OCS projects than actually were necessary, which has negative implications for pressure on local housing and public service resources.

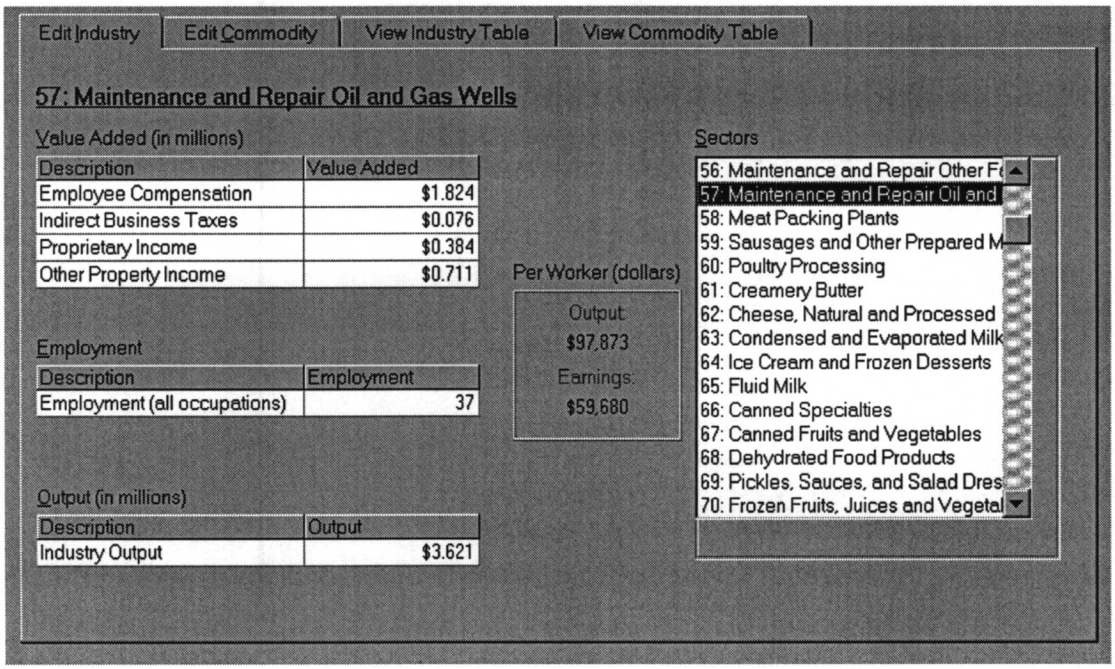
The IMPLAN model allows users to substitute data when they have better information than the default database, and this was done with the Mobile County model. The process involves editing values in the Region Data section of the model—specifically, altering the number of workers in the sector database—so as to yield correct levels of output and earnings per worker. After these changes are made the model has to be recompiled.

The following pictures are screen prints of the model's Region Data section showing the revised values for the OCS sectors used in the Mobile County model. The values in the Value Added and Output boxes are default values. Only the value in the Employment box was changed (from the default value of 274 to 88 in the case of Sector 38) which yielded the desired Per Worker Earnings value of approximately $60,000.


Edit Industry
Edit Commodity
View Industry Table
View Commodity Table
38: Natural Gas Crude Petroleum
Value Added (in millions)
Description | Value Added
Employee Compensation | $4.783
Indirect Business Taxes | $2.791
Proprietary Income | $0.523
Other Property Income | $11.337
Employment
Description | Employment
Employment (all occupations) | 88
Output (in millions)
Description | Output
Industry Output | $30.268
Per Worker (dollars)
Output:
$343,951
Earnings:
$60,294
Sectors
29: Copper Ores
30: Lead and Zinc Ores
31: Gold Ores
32: Silver Ores
33: Ferroalloy Ores, Except Vanadiu
34: Metal Mining Services
35: Uranium-radium-vanadium Ores
36: Metal Ores, Not Elswhere Classifi
37: Coal Mining
38: Natural Gas & Crude Petroleum
39: Natural Gas Liquids
40: Dimension Stone
41: Sand and Gravel
42: Clay, Ceramic, Refractory Minera
43: Potash, Soda, and Borate Minera


Edit Industry
Edit Commodity
View Industry Table
View Commodity Table
50: New Utility Structures
Value Added (in millions)
Description | Value Added
Employee Compensation | $19.739
Indirect Business Taxes | $0.420
Proprietary Income | $5.595
Other Property Income | $2.729
Employment
Description | Employment
Employment (all occupations) | 422
Output (in millions)
Description | Output
Industry Output | $68.871
Per Worker (dollars)
Output:
$163,202
Earnings:
$60,033
Sectors
49: New Industrial and Commercial B
50: New Utility Structures
51: New Highways and Streets
52: New Farm Structures
53: New Mineral Extraction Facilities
54: New Government Facilities
55: Maintenance and Repair, Reside
56: Maintenance and Repair Other F
57: Maintenance and Repair Oil and
58: Meat Packing Plants
59: Sausages and Other Prepared M
60: Poultry Processing
61: Creamery Butter
62: Cheese, Natural and Processed
63: Condensed and Evaporated Milk

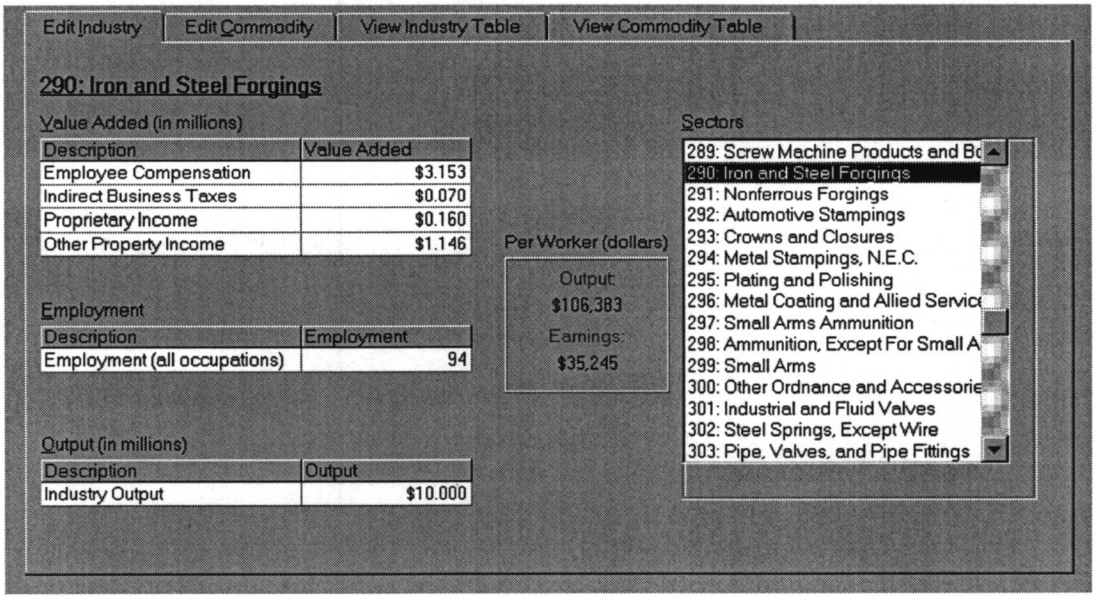




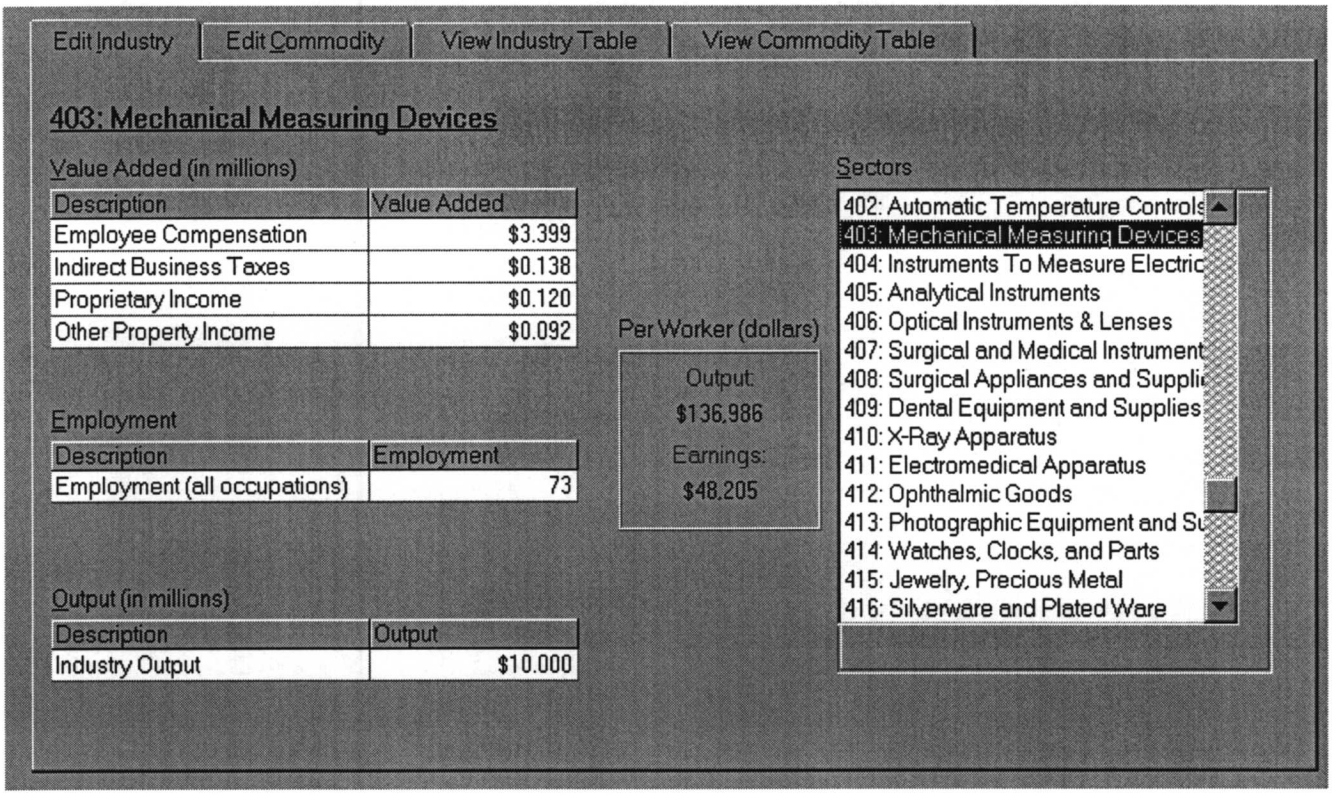
Referring back to Table A-1, three sectors—290 (Iron & steel forgings: SIC 3462), 331 (Special industrial machinery, n.e.c: SIC 3559) and 403 (Instrumentation: SIC 3823)—had to be added to the Mobile County database to reflect development of those industries locally in support of the OCS activities. To accomplish this the model's Region Data section was edited via insertion of appropriate values in the Value Added, Employment and Output boxes for these industries. The default Mobile County model's database shows zeros in the boxes for these sectors. To create values we took the counterpart values from the statewide Alabama model, and scaled them down

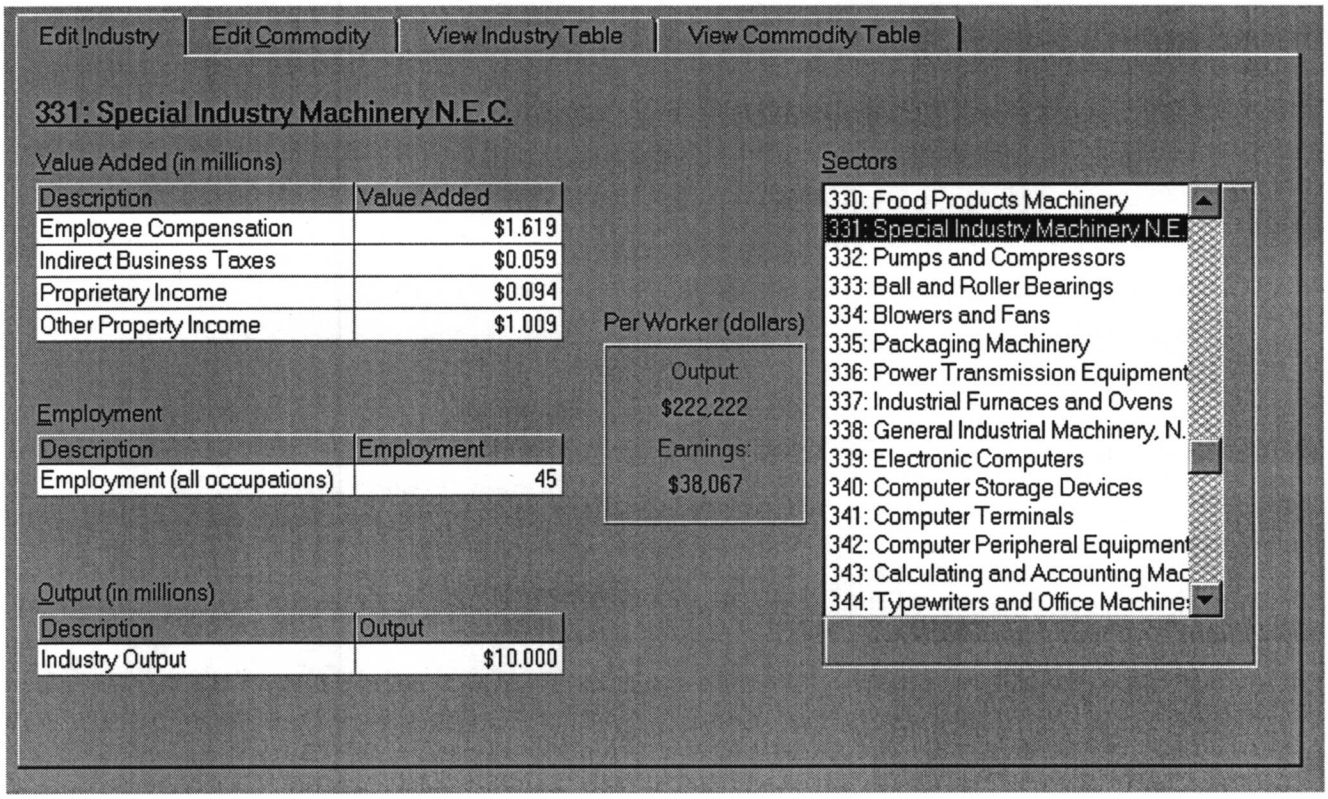
to a nominal total industry output value of $10 million for Mobile County. Thus a sector was created which would generate indirect and induced effects in response to direct spending for outputs of that sector.[4] Without the new sector, the model would have had to import 100 percent of the inputs from outside the county in order to meet the change in demand for its products. With the new sector, the model generates income and employment for Mobile County-based factors of production. An additional step in modifying the model was to import the production functions for the new sectors from the IMPLAN library of production functions. These production functions contain all the coefficients for inputs of intermediate products and services than go into production of the sector's final product, and are based on nationwide averages. Once the changes in the Region Data are made, the model has to be reconstructed, during which time (utilizing the Advanced Construction mode) the production functions for the affected industry sectors are imported.

Following are screen pictures of the modified Region Data sets for Sectors 290, 403 and 331:



[4] The actual size of the sector is not particularly important to the analysis, just so it can accommodate the demands from the OCS activities. Ten million dollars in total output was deemed adequate for the introduced sectors.


Edit Industry
Edit Commodity
View Industry Table
View Commodity Table
403: Mechanical Measuring Devices
Value Added (in millions)
Description | Value Added
Employee Compensation | $3.399
Indirect Business Taxes | $0.138
Proprietary Income | $0.120
Other Property Income | $0.092
Employment
Description | Employment
Employment (all occupations) | 73
Output (in millions)
Description | Output
Industry Output | $10.000
Per Worker (dollars)
Output:
$136,986
Earnings:
$48,205
Sectors
402: Automatic Temperature Controls
403: Mechanical Measuring Devices
404: Instruments To Measure Electric
405: Analytical Instruments
406: Optical Instruments & Lenses
407: Surgical and Medical Instrument
408: Surgical Appliances and Suppli
409: Dental Equipment and Supplies
410: X-Ray Apparatus
411: Electromedical Apparatus
412: Ophthalmic Goods
413: Photographic Equipment and Su
414: Watches, Clocks, and Parts
415: Jewelry, Precious Metal
416: Silverware and Plated Ware


Edit Industry
Edit Commodity
View Industry Table
View Commodity Table
331: Special Industry Machinery N.E.C.
Value Added (in millions)
Description | Value Added
Employee Compensation | $1.619
Indirect Business Taxes | $0.059
Proprietary Income | $0.094
Other Property Income | $1.009
Employment
Description | Employment
Employment (all occupations) | 45
Output (in millions)
Description | Output
Industry Output | $10.000
Per Worker (dollars)
Output:
$222,222
Earnings:
$38,067
Sectors
330: Food Products Machinery
331: Special Industry Machinery N.E.
332: Pumps and Compressors
333: Ball and Roller Bearings
334: Blowers and Fans
335: Packaging Machinery
336: Power Transmission Equipment
337: Industrial Furnaces and Ovens
338: General Industrial Machinery, N.
339: Electronic Computers
340: Computer Storage Devices
341: Computer Terminals
342: Computer Peripheral Equipment
343: Calculating and Accounting Mac
344: Typewriters and Office Machine

Regional Purchase Coefficients

Foster surveyed offshore operators and contractors regarding the origin of the their labor and materials as part of the research effort to make the IMPLAN sectors more closely match the unique requirements of Norphlet gas exploration and production. This research yielded more accurate estimates of local spending and leakage than IMPLAN's default regional purchase coefficients (RPC). The local share of investment by offshore operators is discounted for leakage, so IMPLAN is only modeling the share of operator spending that occurs in the County. Accordingly, for the Mobile County model, the RPCs were uniformly used at 100% local supply (i.e., LPC switch set to No).

Modifications to State and Local Government Spending Sectors

As noted earlier, an issue with modeling of state and local government (SLG) expenditures is the recognition of non-labor goods and services procured as part of the general business of government. Agencies and departments purchase supplies and services from the private sector, and increases in government spending have an expansionary effect on the economy. The problem with the IMPLAN basic model is that the government sectors are 1) highly aggregated (i.e., SLG educational and non-educational expenditures are the only two general government sectors in the standard database) (government-owned enterprises like water and power utilities are treated separately), and 2) all the value of the SLG expenditures is treated as employee compensation. Accordingly, the model does not generate indirect effects from SLG spending because the sectors' output consists only of worker compensation, without any intermediate inputs.

MIG recognized this problem and created a special set of production functions for the intermediate input requirements of a range of government activities, such as police, fire, welfare, health, redevelopment and the like. MIG made these available to users via the MIG Internet website in the form of a downloadable file named "Expanded Gov FD.iad" (expanded government final demand). This data file is actually an IMPLAN model with consumption and investment sectors for various government functions at the federal, state and local levels. Users can import and compose impact scenarios from it to run on any geographically based model—e.g., Mobile County or statewide Alabama. The underlying production functions for the various government functions are generic, being based on national averages taken from the Census of Governments. It is important to note that the government final demand model excludes employee compensation; i.e., it includes only intermediate inputs (called "non-administrative" expenses by MIG). Workers' wages and salaries have to be added to complete the analysis.

The functional, or departmental composition of Mobile County's and Alabama State's general government spending was used as the input to the SLG spending model. This was based on their FY 1997 budgets, which identified the functional allocation of spending among departments like police, fire, etc., and the portion of the total budget absorbed in government workers' wages and salaries. The next step combined the functional (non-labor) expenditures with the employee compensation values for each jurisdiction and derived their percentage shares of their respective totals. The percentages were then converted to dollars whose total amounted to $1 million. These values were then fed into the Mobile County and statewide Alabama models to obtain the direct, indirect and induced effects coefficients for impacts on total output, personal income and employment.

Tables A-2 and A-3 present the worksheets for determining the composition of SLG expenditures for, respectively, Mobile County and statewide Alabama. The tables identify the SLG spending sectors that were imported from the "Expanded Gov FD.iad" model. Note that for Mobile County, the final demand vectors for functional expenditures add up to $421,000, with employee compensation adding another $579,000 to complete the one million dollar base case. For statewide Alabama, the ratio was 38% functional expenditures and 62% employee compensation.

These values were then run through the two jurisdictions' models to obtain coefficients of impacts of general government spending per million dollars of expenditures of OCS-related taxes and other revenues.

Table A-2
Mobile County Government Expenditures, FY 1997 (Excluding Debt Service): Basis for Allocation of Spending Among Activities

		Distribution[1] (%)		
Function	**1997 Exp**	**100%**	**Norm. to $421k**	**IMPLAN FD Activity**
General Government	28,865,341	33.9%	142,616	cons exp other general government
Public Safety	29,039,287	11.4%	47,825	cons exp police
		11.4%	47,825	cons exp fire fighting organizations
		11.4%	47,825	cons exp correctional institutions
Highway and Roads	13,292,649	15.6%	65,675	cons exp public highways
Sanitation	1,089,145	1.3%	5,381	cons exp sanitation
Health	2,389,677	2.8%	11,807	cons exp hospitals & categorical
Welfare	2,892,269	3.4%	14,290	cons exp public welfare
Culture and Recreation	2,264,929	2.7%	11,190	cons exp natural resources & agricultural
Education	2,104,625	0.8%	3,466	cons exp public education
		0.8%	3,466	cons exp elem & secondary ed
		0.8%	3,466	cons other education & libraries
Capital Outlay	2,150,756	2.5%	10,626	invest other general government
Infrastructure Outlay	1,121,448	1.3%	5,541	invest waterports and airports
Total Functional Expenditures	**85,210,124**	**100.0%**	**421,000**	
Mobile County Employee Compensation			**579,000**	SLG 523 Empl Comp
Total			**$1,000,000**	

[1] Budget allocated 42.1% to procurements of intermediate inputs and 57.9% to employee compensation (per county budget).

Source: Mobile County Commission, 1998; Foster Associates, 1998.

Table A-3
Alabama General Government Expenditures, FY 1997 (excluding Debt Service): Basis for Allocation of Spending Among Activities

Function	1997 Exp ($000)	Distribution[1] (%) 100%	Norm. to $380k	IMPLAN FD Activity
Economic Development	18,702	2.1%	7,935	invest waterports and airports
Educational and Cultural	10,858	11.3%	47,539	cons exp elem & secondary ed
		11.3%	47,539	cons other education & libraries
		11.3%	47,539	cons exp public education
Natural Resources & Recreation	7,781	0.0%	38	cons exp natural resources & agricultural
Alabama Forever Wild Trust[2]	15,000	0.0%	74	cons exp natural resources & agricultural
Health - Physical & Mental	299,695	0.4%	1,481	cons exp hospitals & categorical
Social Services	55,322	0.1%	273	cons exp public welfare
Protection of Persons & Property	281,867	1.1%	4,763	cons exp correctional institutions
		1.1%	4,763	cons exp fire fighting organizations
		1.1%	4,763	cons exp police
Transportation	350	0.0%	1.7	cons exp public highways
General Government	203,896	0.2%	1,007	cons exp other general government
Capital Projects	36	0.0%	0.2	invest waterports and airports
Transfers to Proprietary Funds	2,070	0.0%	10	invest other general government
Subtotal Natural Resources	22,781	0.0%	113	cons exp natural resources & agricultural
Subtotal Capital Projects	18,738	2.1%	7,936	invest waterports and airports
Total Functional Expenditures	**895,577**	**40.0%**	**$380,000**	
Alabama State Gov. Employee Compensation			**$620,000**	SLG 523 Empl Comp
Total			**$1,000,000**	

[1] Budget allocated 38% to procurements of intermediate inputs and 62% to employee compensation (per state budget).

[2] $15 million/year for Alabama Forever Wild Trust based on long-term cap on total size of trust fund principal.

Source: Alabama Dept. of Finance, 1998.

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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.