

# **Economic Base Assessment of Sumter County, Alabama**

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## **Economic Background**

In the United States it is often the poor, and mainly those living in rural, natural resource settings, that bear the brunt of environmental degradation and exploitation in exchange for economic opportunity. Such externalities have become the norm in Sumter County, located in the Black Belt region of western Alabama. The county has no metropolitan areas and holds only seven towns in its 905 square miles along the boarder of Mississippi, with the remaining communities located in unincorporated areas.<sup>1</sup> (The towns include Livingston, the county seat, Cuba, Epes, Emelle, Gainesville, Geiger, and York.) According to the 2000 Census of Population and Housing, county population is 73 percent black in comparison to 26 percent for the state. In addition, 1997 estimates of median household income place Sumter median income levels one-third below that of the state. The county is also characterized by 33 percent of its population living below poverty, with child poverty rates at 40 percent, compared to 16 percent and 24 percent for Alabama, respectively.<sup>2</sup> These present day factors are wholly tied to the region's economic history, which is closely linked to the state's natural resource base and degree of dependency on it.

### **Agriculture**

The Black Belt region, a twelve-county stretch of land running from Sumter in the west to Russell in the east, is known for its fertile soil and rich farmland. Prior to the Civil War, the Black Belt was the center of the cotton plantation economy in Alabama and Sumter County served as the major population hub in the state. However, at that time, nearly half of the county's residents were slaves (Thornton, 1978). Following the war, cotton continued to be produced by the black population through sharecropping agreements until the boll weevil invasion of 1915 destroyed the fields and cotton's reign over them. However, by then the near century long dependence on single-crop production had taken its toll on the land, which eroded

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<sup>1</sup> Source of geographic statistics: U.S. Census Bureau. State and County Quickfacts. Sumter County, Alabama. <<http://quickfacts.census.gov>> Accessed 05/21/01.

<sup>2</sup> Poverty level estimates provided by the Alabama State Data Center, Center for Business and Economic Research, University of Alabama, and therefore may differ slightly from Census Bureau estimates.

and depleted the soil of nutrients, and the roots of persistent poverty among the black population had also taken hold.

Farmers have since been able to rebuild the quality of the land through rotation, fertilization, and other measures, and although no longer the base of Alabama agriculture, cotton production remains as an important contributor to the state economy.<sup>3</sup> Today Alabama's farm industry is more diversified, including the production of soybeans, corn, and hay, and the sale of livestock, largely beef cattle in the Black Belt.<sup>4</sup> Yet, despite the health of the industry, the resident population has seen no greater benefit, largely due to additional structural changes, such as mechanization and consolidation of farms.<sup>5</sup> The area's farms are now fewer in number, larger in size, and have a greater degree of external owner/management.<sup>6</sup>

## **Forestry<sup>7</sup>**

Besides rich soil, the landscape in the west central region, in addition to that of the southwest, contains the highest percentages of forest land in the state (77 and 76 percent, respectively). Alabama as a whole is dominated by forest coverage, with 68 percent of its land forested, and the majority of the forests are privately owned (95 percent) and largely by miscellaneous individuals (40 percent). The state's vast stretches of pine and hardwoods have made it one of the leading states for lumber production, with the most valuable sector being pulp and paper products, which is also true for Sumter County. Yet, the forest resource has not gone unscathed. The forests were seen as a hindrance to agriculture during the cotton boom and were somewhat depleted in its wake. However, widespread cropland abandonment followed the boll weevil infestation and depressed agricultural market in the 1930s. From then until the 1970s,

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<sup>3</sup> According to the Alabama Agricultural Statistical Service, cotton production reports for Sumter County totaled less than 500 acres or provided insufficient data.

<sup>4</sup> According to estimates produced in this study, ranch fed cattle was the 22<sup>nd</sup> largest industry sector in Sumter County by value added measures in 1998. In addition, hay (11,000 ac), soybeans (2,000 ac), and corn (700 ac) were the most significant crops harvested.

<sup>5</sup> The definition of farm used here is any establishment from which \$1000 or more of agricultural products were sold or would normally be sold during the year.

<sup>6</sup> In 1950 the number of farms in the state was approximately 116,000 and 41 percent of those were tenant operated compared to only 48,000 farms and approximately 8 percent tenant operated in 1999. Alabama Agricultural Statistical Service.

<sup>7</sup> Forest land coverage, ownership, and production statistics used in this section were obtained from the Alabama Agricultural Statistical Service.

aided by protection and technical assistance, the forest resource was restored, reaching its peak around 1962.

## **Manufacturing**

The diversification of agriculture and growth in the forest industry was coupled by the development of a broader manufacturing industry throughout the state, which in the 1940s was limited to basic textiles, primary metals, and lumbering. Expansion involved greater employment in those three sectors in addition to chemicals, industrial machinery, and rubber goods, to name a few. Understanding the relationship of these various manufacturing sectors to the region's natural resource base is a difficult task because agricultural and forest enterprises not only supply inputs to production, but are often involved in the processing, handling, and selling of output as well. For that reason they are generally lumped into an ill-defined category referred to as agribusiness, which includes all businesses involved in the production of goods from agriculture, forestry, and fisheries.

Historically, the aggregated lumber, furniture, pulp, and paper manufacturing sector has been the leading manufacturing sector in Sumter County and has remained as such in the last decade with more than 40 percent of total agribusiness employment and 14 percent of total county employment.<sup>8</sup> Textile and apparel manufacturing has ranked second among agribusiness manufacturing sectors (third overall, following primary agricultural production), but with a substantially smaller role in the county economy with 4.5 percent of total employment on average and 13 percent within the agribusiness sector.

## **Transportation and Trade**

Infrastructure development on Alabama's rivers has also taken place since the 1940s, providing dams for hydroelectric power and one of the best water-transportation systems in the south, fostering the emergence of one of the nation's major seaports in Mobile. Sumter County residents hoped to partake in the water transport and manufacturing industry growth with the

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<sup>8</sup> Estimates are based on 1998 IMPLAN Pro data sets for Sumter County and adjustments for growth and inflation were made for non-base data years.

opening of the Tennessee-Tombigbee (Tenn-Tom) Waterway in 1985, which runs through the rural regions of Mississippi and Alabama to Mobile Bay. Alabama counties along the waterway on average have had a net unemployment rate more than double the state and were optimistic that the Tenn-Tom would provide the needed jobs.<sup>9</sup>

Construction of the waterway began in 1971 and so too did industrial growth in anticipation of the new trade route. Sixteen towns in the region are noted as having acquired industrial parks prior to 1985 with the expectation that the jobs would soon follow (Torres, 1999). However, although trade has increased every year since its opening, the waterway has not sparked the economic prosperity that was predicted. This is due to many factors, including the obsolescence of the heavy industry for which the waterway was designed, competition for barge transport with the Mississippi River, and an increased dependence on external markets, particularly Asian, whose economic downturns have been directly linked to worker lay-offs in the ports along the Tenn-Tom. But this privilege has created a cost beyond the lack of control over global markets, the soil excavated in the construction of the Tenn-Tom was greater than that in the building of the Panama Canal, initiating a series of environmental impacts that continue to this day.

## **Other Industry**

Degradation of water and soil resources in Sumter County can also be linked to the dumping of toxic chemicals in Emelle, where, in 1978, the world's largest toxic waste dump was constructed on what was once fertile farmland.<sup>10</sup> The 2,700-acre landfill sits in the center of the county on top of the Eutaw Aquifer, which supplies water to a large portion of the state and 90 percent of the residents nearest the dump, are black and living in poverty (Bullard, 1990). Up to 1991 the dump was the recipient of between 5 and 6 million tons of waste, mainly from Superfund removal sites in other states and military installations overseas (Stott, 1986). Noted among the toxic chemicals dumped in Emelle are PCBs, DDTs, dioxins, and benzene (e.g. Ingersoll and Pasztor, 1984). That dumping involved six off-site spills and twelve on-site spills

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<sup>9</sup> Historical unemployment rates obtained from the Bureau of Labor Statistics, Local Area Unemployment Statistics.

<sup>10</sup> The dump started as a 300-acre tract of land in 1977 and the operation was later expanded to 2700 acres; *see* Alley et al., 1995.



between 1983 and 1984 alone, and there is speculation that a significant amount of illegal disposal of other toxins has also taken place (Cray, 1991).

Government and local elites are cited as being the primary land-use decision makers in the area, whose growth efforts centered on an underemployed labor force, weak labor unions, cheap land and labor, strong right-to-work laws, and lenient environmental regulations (Davidson, 2001). However, following the organized efforts of local activists, dumping in Emelle in the 1990s was reduced to approximately 15 percent of what it had been the prior decade. This reduction has revealed the gross dependence of the economy on the dump, with landfill generated state taxes moving from \$35 million in 1991 to \$1.5 million in 1999 and the direct loss of 340 jobs in Emelle in addition to the loss of support activities in the local economy (Reeves, 2000).

### **Economic Background Summary**

Clearly Sumter County is endowed with a diversity of natural resources that have played a significant role in both the social and economic history of the region and will likely continue to do so. The forest industry in particular shows signs of potential growth, but its ability to develop lucrative foreign export markets is not yet defined. In addition, the stark contrast of resource wealth and extreme poverty, together with persistent environmental degradation, question the possibility of not only sustainable economic growth, but also equitable growth in Sumter County. An analysis of how the county economy has changed over time, where it stands today, and how its current structure will likely influence that of its future, is integral for understanding the potential for that desired growth and stability.

### **Trend Analysis of Economic Base**

A region's wealth is a function of its resources and the ability to utilize those resources in a sustainable manner to produce income. Income is maintained and generated in a number of ways, such as: through the conversion of resources to commodities by local businesses and the selling of those commodities to customers outside the region, the attraction of new customers or businesses into the region, capture of local demand for goods and services, and obtainment of

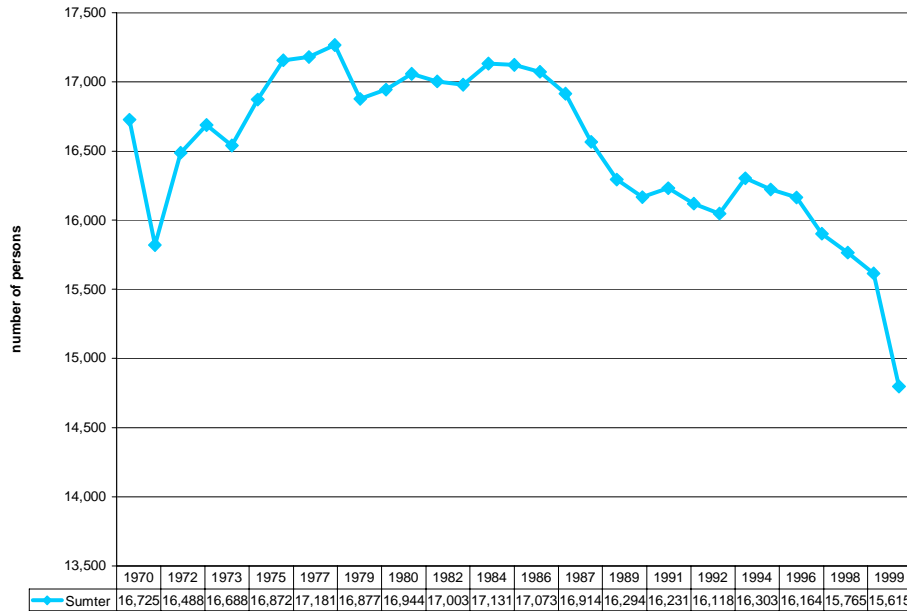
government transfers. The purpose of an economic base study is to define the linkages between local resources and income that flows from outside to inside the region in order to identify current and potential factors of economic growth. However, as indicated, economic systems are comprised of circular rather than linear flows. A regional economy consists of export producers, businesses that support export producers as well as residents, and a resident population that buys both locally and externally produced goods and services. Thus, all contribute to a region's economy and must be considered in the analysis. Indicators of economic growth and stability examined in this section include historical changes in population, employment, industry structure, and income. The relationships among those factors are further defined in the second part of this work, which consists of an input-output analysis of Sumter County's economic base.

## **Population**

Maintaining a healthy economy requires a stable or growing population, to work and consume and thereby support economic activity. A changing population is a reflection of a region's ability to attract and retain resident consumers and producers over a given period of time. Therefore population change is an indirect measure of past and potential economic prosperity. The following figures summarize population change for Sumter County, Alabama from 1970 to 2000 and compare it to population change rates for the State of Alabama and the United States (Figures 1-3).

Between 1970 and 2000, Sumter County's population decreased by 13 percent or 1,927 persons while the population for the State of Alabama grew by 22.4 percent or an average of 14,884 persons per county. State growth was moderately below that of the nation, which increased by 27.6 percent during the same period. However, a large percentage of that change for the county, state, and nation has taken place in the last decade, at -8.5 percent, 10.1 percent, and 13.1 percent from 1990 to 2000, respectively. In fact, Sumter County is noted for having suffered the largest percentage drop in population in the state during the 1990s, bringing the county population well below its 1970 level, 14,798 in 2000 compared to 16,725 in 1970 (*see* Figure 1).

Figure 1. Population; Number of Persons; Sumter Co., AL; 1970-2000

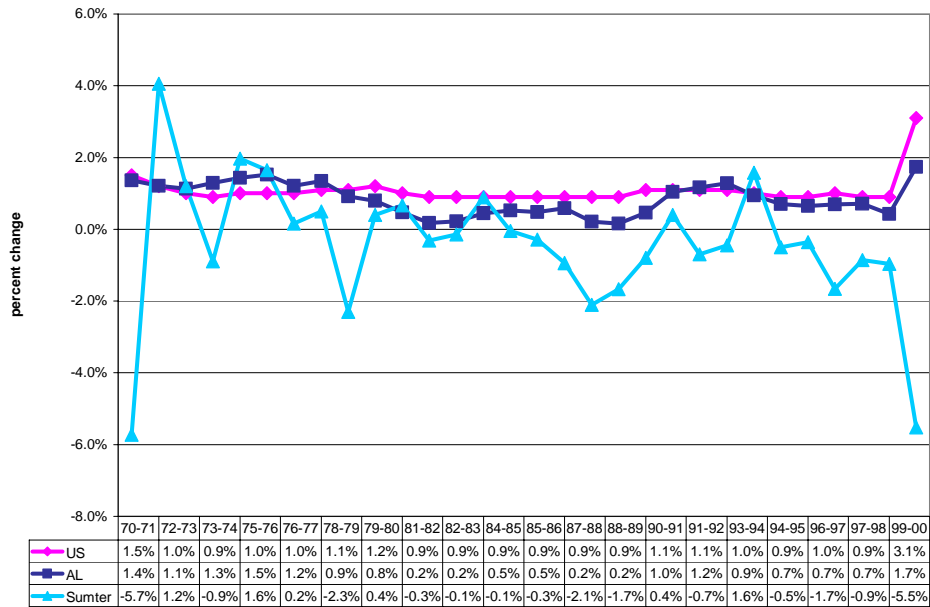


Data Source: Bureau of Economic Analysis, Regional Accounts Data, Local Area Personal Income, CA1-3 Population, Number of Persons.

Overall, yearly statewide population change has closely resembled that of the nation, with relatively steady growth over the course of the last thirty years and a more recent jump in growth rates exhibited in the 2000 Census statistics. Sumter County, on the other hand, has had variable growth rates, with sporadic increases and decreases from year to year and significant decline in the past year. This is suggested in Figure 2, which shows the absolute yearly change rates for Sumter County as well as Alabama and the United States.

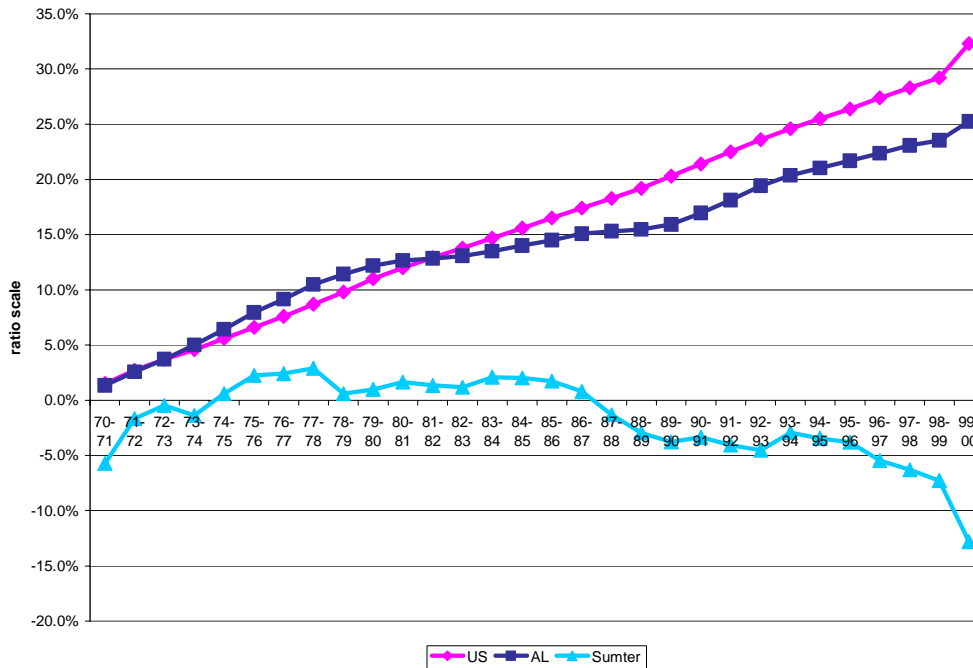
The rapidity and periodicity of that change is made clearer in Figure 3, whereby population change is plotted on a ratio scale so that the slope of the line represents per annum growth. By looking at the relative slope of the lines and distance between point markers the difference in growth rates at various times for Sumter County is immediately apparent. So too are the points of divergence and convergence with the state and nation. An examination of employment may help explain why the county has increasingly been moving away from the rest of the state and nation as shown.

Figure 2. Population; Absolute Percent Change; U.S., AL, & Sumter Co., AL; 1970-2000



Data Source: Bureau of Economic Analysis, Regional Accounts Data, Local Area Personal Income, CA1-3 Population, Number of Persons.

Figure 3. Population; Relative Percent Change; U.S., AL, & Sumter, Co., AL; 1970-2000



Data Source: Bureau of Economic Analysis, Regional Accounts Data, Local Area Personal Income, CA1-3 Population, Number of Persons.

## Employment

Traditionally, it is understood that changes in population reflect changes in employment opportunity in a region. However, it has also been suggested that the reverse is true where quality of life factors rather than employment draw individuals to an area. In the latter case economic growth takes place to meet the demands of an increasing population. Historical change in Sumter County as discussed previously supports neither scenario to its fullest, but indicates that outmigration may be the result of both the lack of employment opportunity and desirable living conditions. However, it is difficult to quantify the latter without a more detailed analysis, which is beyond the scope of this work. Therefore, the following figures provide greater detail as to the make-up of the transitions in Sumter County employment and information pertaining to the relationship of those changes to county population and state and national employment rates (Figures 4-7).

Figure 4 compares population and total employment change rates from 1970 to 1998 by way of elasticity measures. Elasticity is a concept that measures the responsiveness or sensitivity of one variable to another. A value equal to one is referred to as unit elasticity or proportional change, while a value greater than one is elastic and less than one, inelastic.<sup>11</sup> Both population and employment change in the county compared to each other for the prior year show fluctuating measures of elasticity over time, but two significant trends are clear.<sup>12</sup>

During the mid-1980s employment was extremely sensitive to population, likely due to increased pressure on the labor force stemming from heightened economic activity around the opening of the Tennessee-Tombigbee Waterway and the significant amount of dumping that took place in Emelle at that time in conjunction with Federal Superfund clean-ups. However, population to employment elasticity remained virtually zero, which suggests that regardless of increased employment opportunity in the region, the population of Sumter County will likely continue to decline. This conclusion is based on a special case of elasticity whereby any change in Y, employment, will have an infinite effect in X, population.<sup>13</sup> Since relative population change has continued to decline even in the face of increased employment possibilities, and the character of that employment has been negative in terms of quality of life factors, it can be

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<sup>11</sup> Elasticity measure =  $\Delta X/\Delta Y$ . Unit elasticity ( $\Delta X=\Delta Y$ ); Elastic ( $\Delta X>\Delta Y$ ); Inelastic. ( $\Delta X<\Delta Y$ )

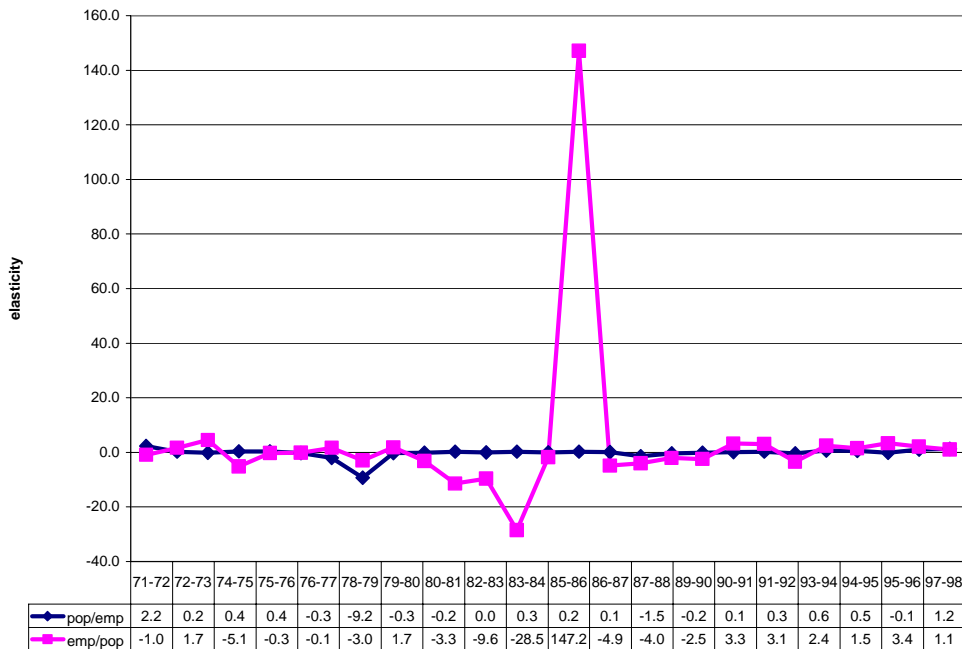
<sup>12</sup> Lagged ( $\Delta X/\Delta Y_{t-1}$ )

<sup>13</sup>  $\Delta X/\Delta Y = 0$  is known as perfect inelasticity.

understood that people in Sumter County are no longer willing to make environmental trade-offs for jobs.

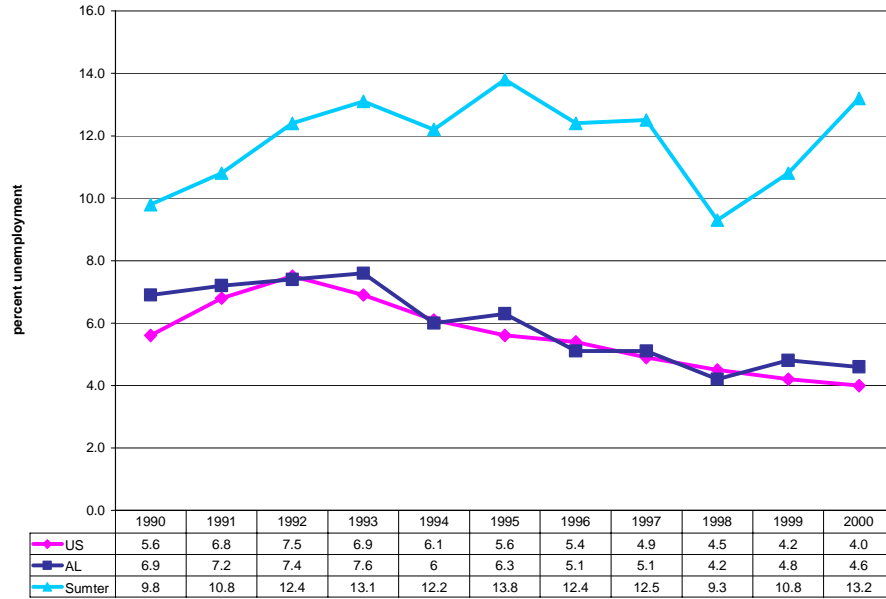
Likewise, the current situation involving increasing unemployment (*see* Figure 5) in addition to a degraded environment, appears to be a driving force for outmigration. Total employment in Sumter County increased by only 18.9 percent from 1970 to 1998 compared to a 40.8 percent increase in the state and 43 percent growth in the nation for the same time period (*see* Figure 6). Between 1990 and 1998 Sumter County's employment decreased by 1.5 percent while both the state and nation continued to grow (13.7 percent and 13 percent, respectively). This lack of growth in jobs in the county is evident by persistent high unemployment rates, averaging 11.8 percent from 1990 to 2000.

Figure 4. Population and Employment Elasticity; Lagged ( $\Delta X/\Delta Y_{t-1}$ ); Sumter Co., AL; 1970-1998



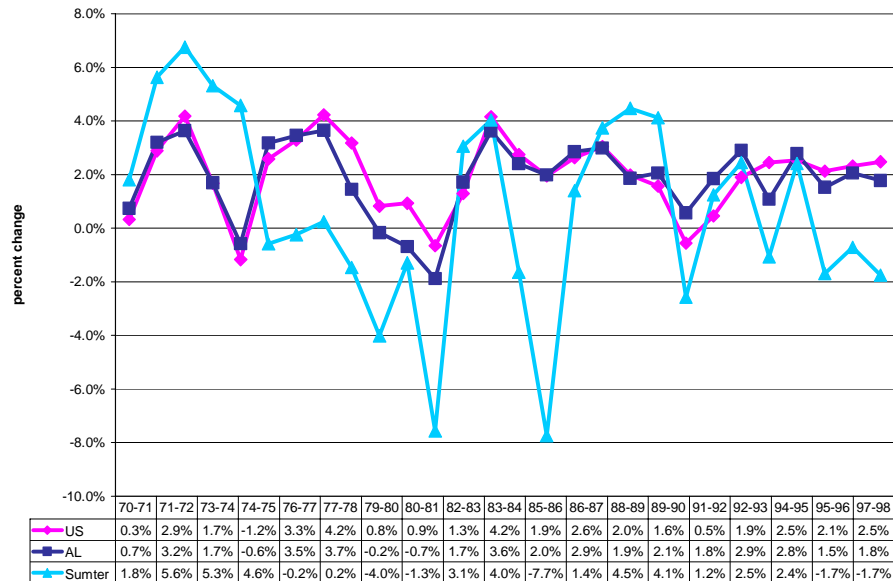
Data Source: Bureau of Economic Analysis, Regional Accounts Data, Local Area Personal Income, CA1-3 Population, Number of Persons and CA25- Total Full- and Part-time Employment by Industry.

Figure 5. Unemployment Rate; Monthly Average; U.S., AL, & Sumter Co., AL; 1990-2000



Data Source: Bureau of Labor Statistics, Local Area Unemployment Statistics, Unemployment Rates, NSA

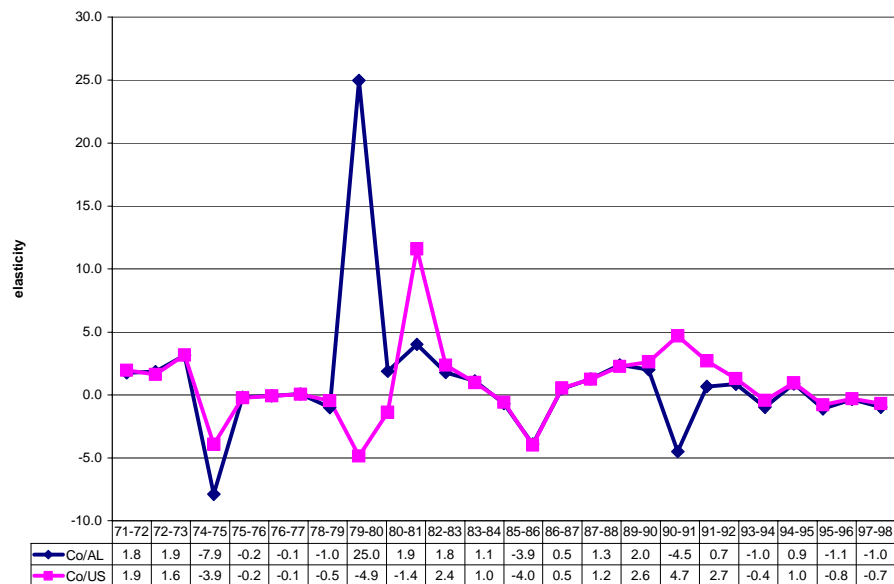
Figure 6. Percent Change in Total Full-time & Part-time Employment; U.S., AL, & Sumter Co., AL; 1970-1998



Data Source: Bureau of Economic Analysis, Regional Accounts Data, Local Area Personal Income, CA25- Total Full- and Part-time Employment by Industry.

The dependence on external management of local resources and vulnerability to related economic shocks can also be seen in employment elasticity measures comparing the county to the nation and state (*see* Figure 7). The increased sensitivity at the local level to periods of domestic macro-economic crises are apparent, but unfortunately, a comparative change to foreign economies is not represented in this model. Therefore, significant employment shocks to the pulp and paper as well as other industries related to foreign exchange are not captured.

Figure 7. Employment Elasticity; U.S., AL, & Sumter Co., AL; 1970-1998



Data Source: Bureau of Economic Analysis, Regional Accounts Data, Local Area Personal Income, CA25- Total Full- and Part-time Employment by Industry.

## Industry Structure

Changes in the activity-mix of the region can be measured by focusing on the relative importance of each industry. That relationship to total employment in the county between 1970 and 1995 is examined (Figures 8 and 9) as well as the concentration of that employment in comparison to the nation (Table 1). A preliminary discussion of import/export activity in conjunction with industry employment is also offered, but this is better explained by way of the input-output analysis that follows the trend analysis.

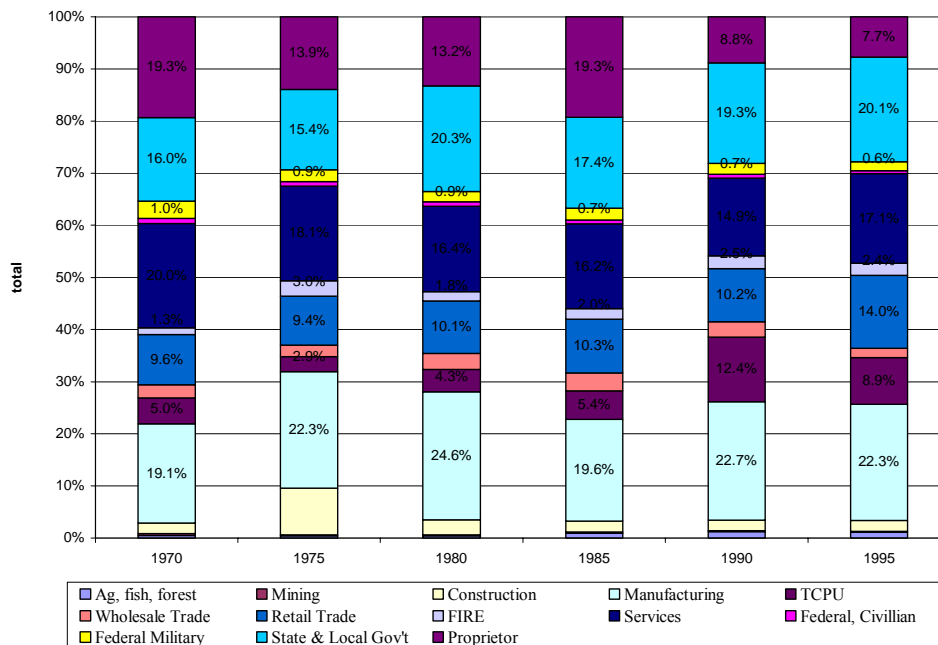
Percent employment by industry, as shown in Figure 8, reveals that manufacturing and state and local government have consistently been leading employers in Sumter, providing



approximately 35 to 45 percent of combined total county employment since 1970. Gains in manufacturing and TCPU shown since 1985 are likely due to trade along the Tenn-Tom since Sumter County wood products have accounted for approximately one third of the traffic on the waterway since its opening (Torres, 1999).

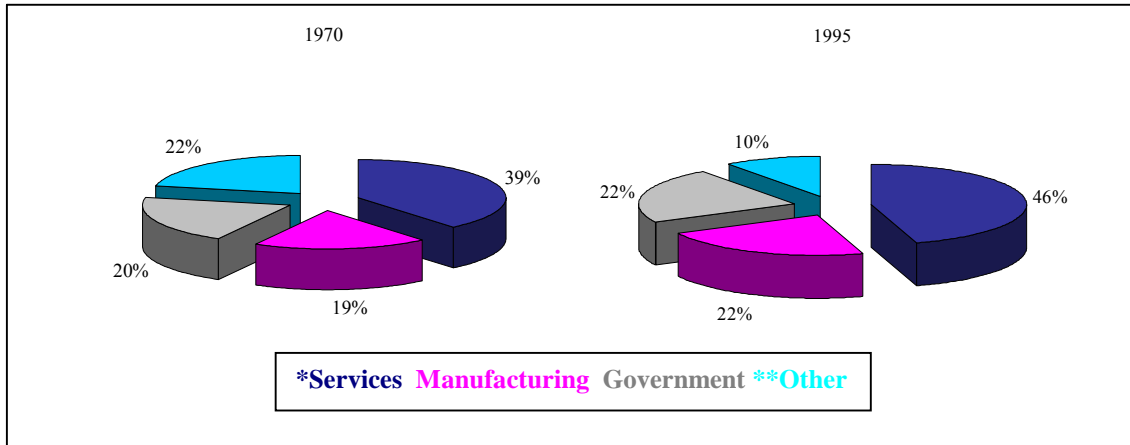
Wage and salary jobs as a percent of total full-time and part-time employment peaked in 1989 at 84.2 percent and have been declining since. The percentage of wage and salary jobs for the nation and state have also been declining, but to a lesser degree than in Sumter County. In relation, growth in proprietor employment in the county since 1989 has been solely in non-farm employment. Between 1989 and 1998 county wide farm employment was reduced by 5.5 percent, while non-farm employment grew by 28.6 percent. (The structural changes to farm employment support those noted for farm size, ownership, and mechanization in the economic background.) Despite that total growth of 23.1 percent, farm and self-employment in 1998 made up a smaller percentage of total county employment than in the past and the economy overall has become slightly less diversified (*see* Figure 9).

Figure 8. Percent Total Full- & Part-time Employment by Industry; Sumter Co., AL; 1970, 1975, 1980, 1985, 1990, & 1995



Data Source: Bureau of Economic Analysis, Regional Economic Information System, County Level Variables, CA25- Total Full- and Part-time Employment by Industry.

Figure 9. Industry Sector Employment; Percent Total Employment; Sumter Co., AL; 1970 & 1995



\*Services consists of agriculture, fishing, & forestry services, TCPU, wholesale & retail trade, FIRE, and other services based on USDA Economic Research Service service-dependent county designation. \*\*The Other category consists of all industries not included in services, manufacturing, and government. *Data Source:* Bureau of Economic Analysis, Regional Economic Information System, County Level Variables, CA25- Total Full- and Part-time Employment by Industry.

Table 1 presents a series of location quotients, which compare the percentage of population employed in each industry in the county to the corresponding percentage for the nation in the same year.<sup>14</sup> For example, the location quotient for manufacturing in 1970, .9938 or 99.4 percent, tells us that Sumter County had a fairly proportional concentration of manufacturing employment to that of the nation.<sup>15</sup> Reading across for the same industry, the coefficient rises to 1.6984 in 1995, indicating a more than proportional representation of manufacturing in the region to the U.S. (70 percent greater) and a growing industry specialization for the county.

Another use of the location quotient comes from recognizing that industry activities in a region supply both a local market and an external or export market and the desire to estimate how much of each activity is for export consumption. The simplest way to make such estimates is to use location quotients in conjunction with the basic/non-basic industry concept.<sup>16</sup> The idea is that some regional activities (basic) lead to growth while others (non-basic) are simply consequences of growth. In other words, a region, like a business, must earn its livelihood by

<sup>14</sup> The location quotients were obtained by dividing employment in each sector for the region by total regional employment ( $E_i/\sum E_{i-n}$ ). The same was done for the United States and the resultant decimals were divided into those derived for the region.

<sup>15</sup> Assumes even distribution of industry activity across geographic areas.

producing something for which there is a willingness to pay by others. Economic activities that serve the local market are simply the result of the level of income and demand achieved in the past and as such, they are participants in growth but not the motivating factors of that growth. On the other hand, activities that serve an external market provide the means for generating income. A useful example is the difference between subsistence farming and commercial farming. That which is generated for consumption by the farmer alone cannot advance the economic position of that farmer, but production in excess of primary needs provides the opportunity for the generation of wealth (given market demands for farm product).

Table 1. Location Quotients; County Industry Sector Compared to U.S.; Sumter Co., AL; 1970, 1975, 1980, 1985, 1990, & 1995

Industry Sector	1970	1975	1980	1985	1990	1995
Ag, Fishing, Forestry	0.9111	0.6188	0.4810	<b>1.0940</b>	<b>1.1292</b>	0.8576
Mining	0.5147	0.2329	0.1854	0.2076	0.2586	0.3135
Construction	0.4613	<b>2.0721</b>	0.6089	0.4515	0.3947	0.4080
Manufacturing	<b>0.9938</b>	<b>1.2860</b>	<b>1.3894</b>	<b>1.3709</b>	<b>1.6027</b>	<b>1.6984</b>
TCPU	0.6102	0.4961	0.6187	0.7785	0.6158	0.3844
Wholesale Trade	0.7183	0.6652	0.6651	0.7062	0.6171	0.8118
Retail Trade	0.7183	0.6652	0.6651	0.7062	0.6171	0.8118
FIRE	0.2219	0.4366	0.2393	0.2982	0.3199	0.3167
Services	<b>1.2017</b>	0.9609	0.7709	0.7199	0.5360	0.5598
Government	<b>1.2958</b>	<b>1.1399</b>	<b>1.4480</b>	<b>1.4750</b>	<b>1.4502</b>	<b>1.5153</b>
Federal, civilian	0.3628	0.3341	0.3346	0.3456	0.3148	0.3038
Military	<b>1.0365</b>	0.8979	0.9177	<b>1.1598</b>	<b>1.0621</b>	<b>1.0782</b>
State and local	<b>1.6526</b>	<b>1.3903</b>	<b>1.7993</b>	<b>1.7911</b>	<b>1.7601</b>	<b>1.7940</b>

*Data Source:* Bureau of Economic Analysis, Regional Accounts Data, Local Area Personal Income, CA25- Total Full- and Part-time Employment by Industry.

A location quotient greater than one suggests that the area economy has more than enough employment in that industry to supply the region with the amount of industry product demanded while also having a surplus of employment (i.e. production of goods/services) that can be sold outside of the region. Such industries are defined as basic and benefit the local economy by drawing dollars into the area from the outside, thus contributing to total county wealth. A location quotient less than one is interpreted as an industry that does not provide the necessary level of employment to produce that which is required to maintain normal consumption patterns.

<sup>16</sup> Location quotients used in this manner assume homogenous consumption patterns, constant labor productivity across regions, and that local demands are first met by local production.

This is referred to as a non-basic industry, which leads to the importation of goods and services, and is therefore a source of loss or leakage of wealth from the region.<sup>17</sup>

According to Table 1, mining, TCPU, FIRE, and construction have historically been sources of leakage for Sumter County, despite the 1975 2.0721 coefficient for construction in 1975, which may be reflective of the building of the Tenn-Tom and/or the increase in resident population at the time. But once again, this can only be thought of as a rudimentary measure since location quotients only estimate net surpluses over area consumption for aggregated industries.<sup>18</sup> However, they are helpful in gaining an initial understanding of the efficiencies and deficiencies of industry make-up over time as they pertain to regional growth.

## **Income**

Income serves as one of the main indicators of regional economic prosperity. While there are multiple measures of income, the one most widely used in tracking growth is personal income.<sup>19</sup> Per capita income, in addition to total personal income, can be used as scale measures of a region's economic health and that of the individuals that reside there. The following figures illustrate income in Sumter County in both current and real dollars and in comparison to change in income for the nation and state (Figures 10-13).

Annual change in personal income in Sumter County, Alabama has become less variable over the last two decades, but has increasingly diverged from the state and nation in relative terms (*see* Figures 10 and 11). Per capita income for Sumter County in 1999 was well below the 22,972 state and 28,546 national dollar values at 15,861 dollars. In fact, per capita income for Sumter County has remained at a rate between 50 and 60 percent of the U.S. for nearly three decades, while the state has become increasingly more proportional to the nation at a rate of 80 percent or greater since 1990 (*see* Figure 12). Yet, it is difficult to derive anything meaningful from weighing Sumter County against the State of Alabama and the United States. Aggregate measures are deceiving because there is substantial variation in per capita income among regional divisions across the U.S. and within Alabama. This variation is due to a number of

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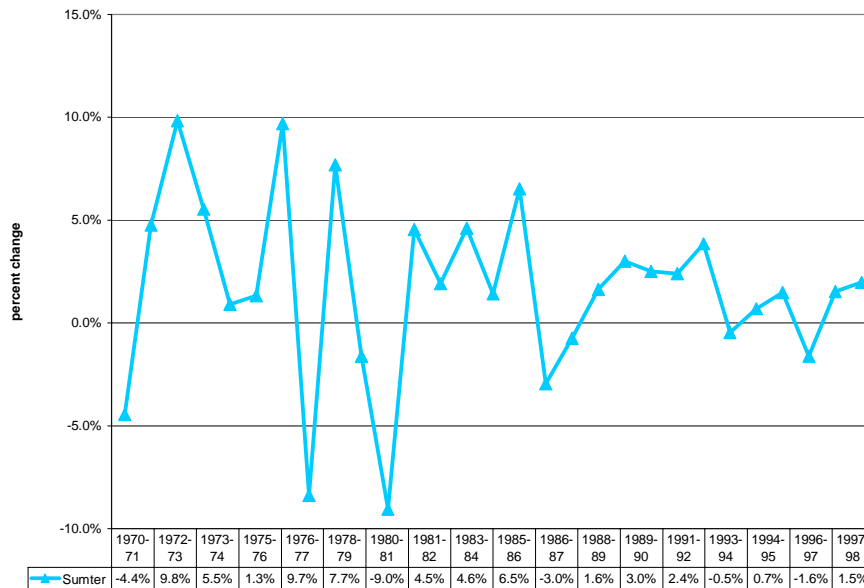
<sup>17</sup> Leakages are payments made to imports or value added sectors that do not re-spend the dollars in the region.

<sup>18</sup> The under-estimation of a region's gross exports are likely due to factors of aggregation and previously noted assumptions in reference to consumption and production patterns.

<sup>19</sup> Personal income, as defined by the U.S. Department of Commerce, Bureau of Economic Analysis, is the sum of wages and salaries, dividends, rents, and interests, transfer payments, other labor income, and income of proprietors.

factors, including relative costs of living, but it is most notably correlated with size. In the United States as a whole, per capita income levels have been consistently higher in metropolitan than in non-metropolitan areas (ERS, 2001). Due to this positive association with size it would be least expected for per capita income levels in a rural county like Sumter to exceed state and national averages. A better measure is to look at relative rates of change.

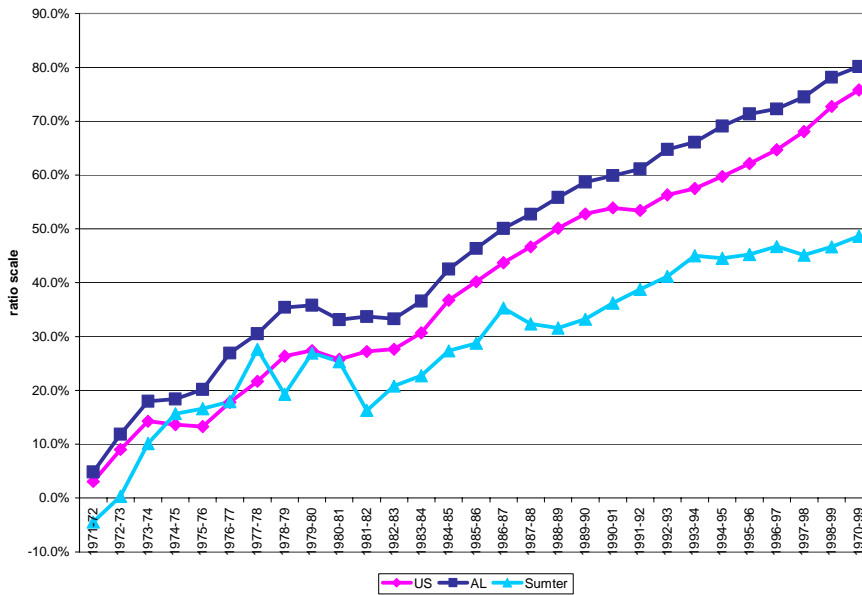
Figure 10. Personal Income; Real (2000) Change Thousands of Dollars; Sumter Co., AL; 1970-1999



Data Source: Bureau of Economic Analysis, Regional Accounts Data, Local Area Personal Income, CA05 Personal Income by Major Source and Earnings by Industry,

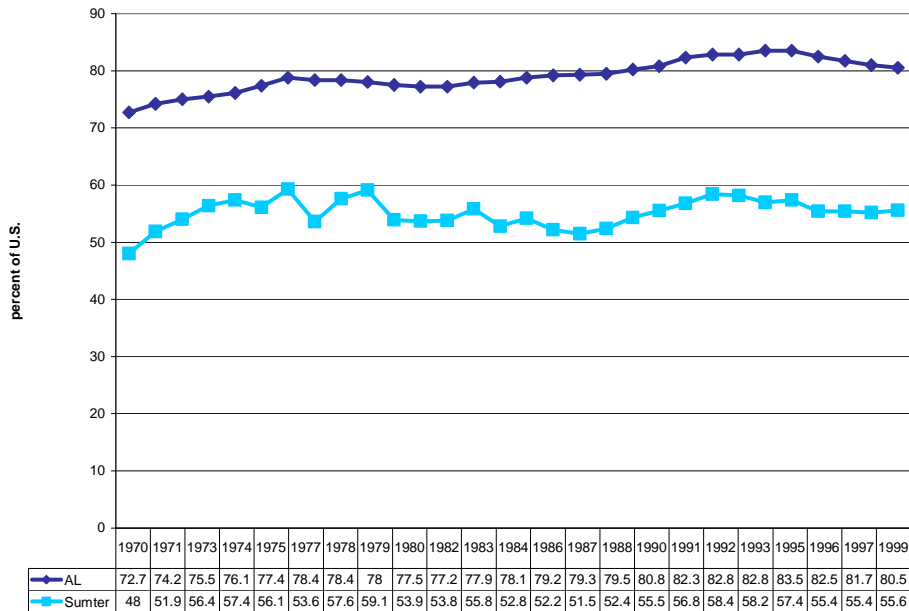
Relative per capita income rates of change in Sumter have exceeded those of the state and nation, with real change from 1990 to 1999 at 12.7 percent for the county, 12.1 percent for Alabama, and 12.5 percent for the United States. But overall, growth rates for the state and county exceeded the nation for the study period (*see* Figure 13). This suggests that both the State of Alabama and Sumter County were able to weather the national economic crises of each decade equally well if not better than the remainder of the nation on average.

Figure 11. Personal Income; Real (2000) Relative Change; Thousands of Dollars; U.S., AL, & Sumter Co., AL; 1970-1999



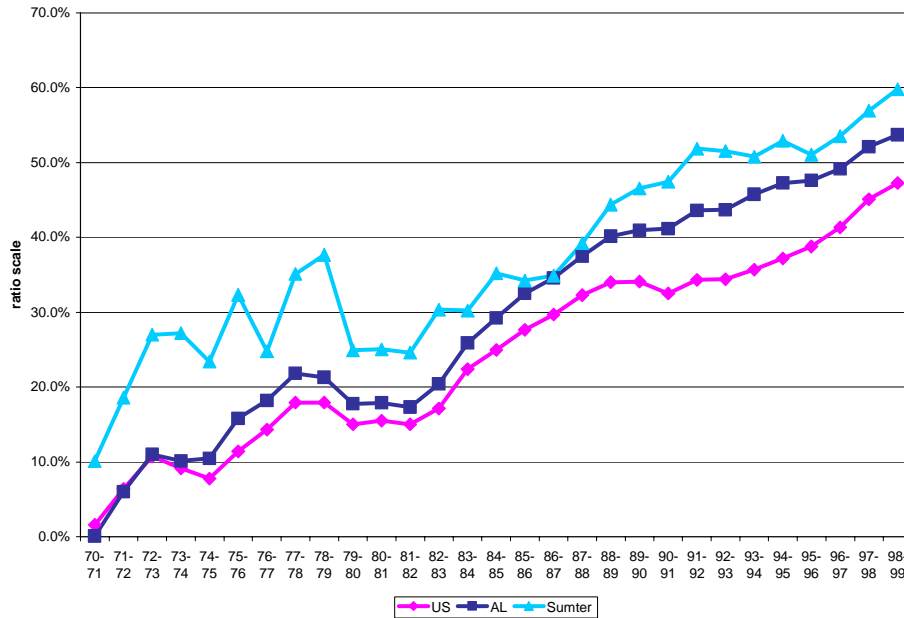
Data Source: Bureau of Economic Analysis, Regional Accounts Data, Local Area Personal Income, CA05 Personal Income by Major Source and Earnings by Industry,

Figure 12. Per Capita Income; Percent of the U.S.; AL & Sumter Co., AL; 1970-1999



Data Source: Bureau of Economic Analysis, Regional Accounts Data, Local Area Personal Income, CA1-3 Per Capita Personal Income, Percent of U.S.

Figure 13. Per Capita Income; Relative Change; Real (2000) Dollars; U.S., AL, & Sumter Co., AL; 1970-1999



Data Source: Bureau of Economic Analysis, Regional Accounts Data, Local Area Personal Income, CA1-3 Per Capita Personal Income, Percent of U.S.

### Summary Trend Analysis

The trend analysis of Sumter County population, employment, industry structure, and income offers little that cannot be explained by the county’s history. If anything it has served to support the impact of those historical relationships on the regional economy. In the past, phases of growth and decline have been inextricably linked to changes in the natural environment and exogenous economic shocks for which the residents of Sumter County have had little control. Even the greatest period of economic activity on the Tenn-Tom Waterway, which came in 1988 and was not sustained, is said to be the result of severe droughts along the Mississippi River that caused the water level to fall enough to force traffic to reroute down the Tenn-Tom.

Additional attempts to bring industry to the area have failed, and notably, such as a recent campaign to attract a Boeing rocket plant, the decision not to locate in Sumter was not because of what the county offers or fails to offer in terms of business potential. It was because of what the area lacks in reference to quality of life factors, such as good schools and desirable housing for employees and their families, and there is little that points to the region’s ability to provide such services in the near future.

The county has been experiencing drastic levels of unemployment and severe population decline and additional loss of its tax base through the reduction of dumping in Emelle. In conjunction there has been a decrease in the level of employment opportunity. Regardless, per capita income has continued to rise and it has done so at a rate exceeding that of the state and nation, yet in absolute measures the income of Sumter County residents remains significantly below that of individuals in other areas of the United States.

Sumter County is also characterized by an increasingly less diversified economy and greater specialization in the manufacturing industry as it relates to wood products. This industry shows potential for significant growth, particularly through foreign exchange. However, such growth may intensify the region's already deep dependency on forest resources and lack of control over market forces, thus placing the local economy in an all too familiar state of affairs.

The ability for Sumter County to capitalize on growth potential in a sustainable manner has yet to be proven. Yet the opportunity to consider viable alternatives to that which have been placed before it have been historically lacking. These and other factors suggest the need for a more formal examination of the county economic base, like the input-output analysis that follows. Such an analysis helps to identify a region's current economic structure, how that structure relates to growth, and what structural changes are needed to foster growth.

### **Input-Output Analysis of Economic Base**

There are many methods used to describe the economic base of a regional economy, including the simple location quotient approach applied previously. Among those methods is input-output modeling, which provides detailed information on individual sectors in relation to their contribution to the local economy. This technique requires the application of rigorous mathematical procedures to an itemized framework of regional accounts, which is information that describes the transactions between a specified region and the rest of the world as well as among the economic activities within that region.<sup>20</sup> It also offers a means for predicting how that economy will respond to change through the production of some type of multiplier ratio that represents the manner in which an initial increase in demand for regional goods and services ultimately impacts levels of income and employment in the region.

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<sup>20</sup> For a full explanation of methods a useful source is Miller and Blair, 1985.



Input-output modeling is made easy by the availability of computer software programs and databases specifically designed for such analysis. There are a number of programs that have been developed, but at their core is the IMPLAN (IMPact analysis for PLANning) modeling system that was introduced by the USDA Forest Service (Alward et al, 1989). The initial creation of IMPLAN was aimed at internal use by the Forest Service, but due to the overabundance of analyses requested its developers packaged the software and related databases for dissemination among interested parties.<sup>21</sup>

The IMPLAN system can be used to construct custom input-output models for any county or multi-county region in the United States.<sup>22</sup> The research presented in the remainder of this work is the result of its application to Sumter County, Alabama. The county model was constructed from relevant IMPLAN Pro 1998 data sets and parameters obtained from the Minnesota IMPLAN Group. The model and its interpretation reported here should be perceived of as descriptive in nature and should not be used for any detailed analysis without further consultation with the primary investigators. An overview of the input-output framework is first given in order to assist in the understanding of the technique's offerings and shortcomings.

## **Overview of Input-Output**

The focus of input-output analysis is the interdependency of each industry's sales and purchases with the contraction and expansion of the region's overall economy. In tracing those changes the flow of money can be followed backward as payments from purchaser to seller or forward in the form of goods and services from the producer to consumer. The framework of the economy is thereby symmetrical with respect to supply and demand, or in other words, inputs and outputs. As such, neither supply nor demand is assumed to be the sole determinant of growth.

A simplistic example of the linkages between an industry and its suppliers and consumers are depicted in Figure 14.<sup>23</sup> Industry I purchases the inputs needed to produce its products, such

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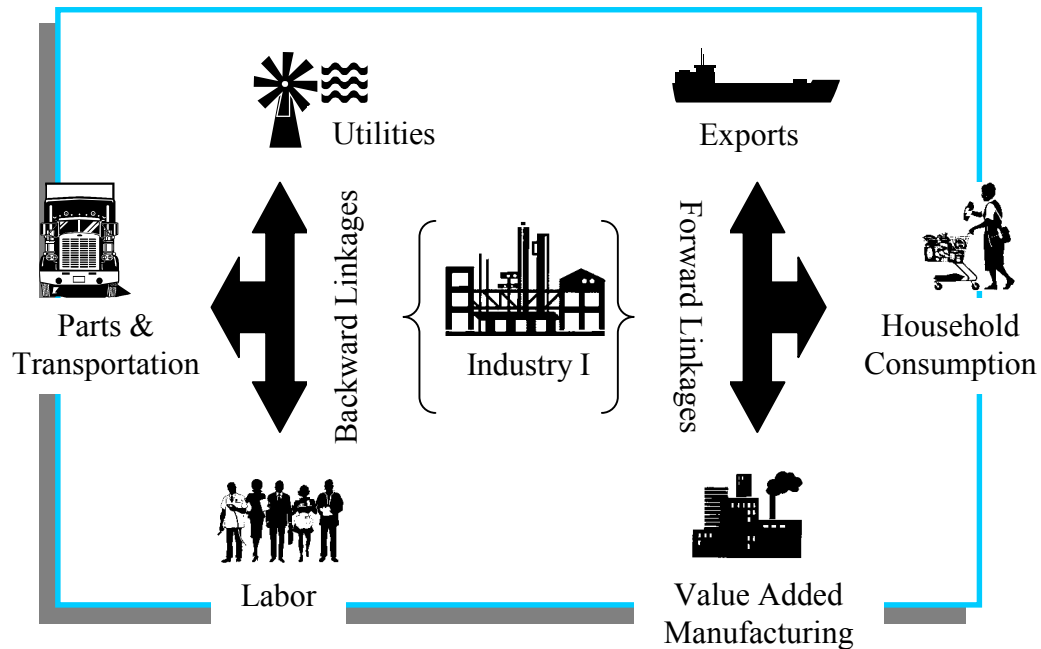
<sup>21</sup> IMPLAN was made available to the public through a joint effort by the Center for Community Economic Development and the University of Wisconsin Extension and is currently available for purchase through the Minnesota IMPLAN Group, Inc.

<sup>22</sup> Databases are also available by zip-code designation, therefore regions may also be specified on that basis.

<sup>23</sup> Derived from conceptual model presented in *IMPLAN Pro Version 2 (2000) User's Guide, Analysis Guide, and Data Guide*.

as labor, parts and transportation, utilities, and so forth. Those transactions or accounts with suppliers of goods and services are referred to as backward linkages. Forward linkages exist between an industry producing a good or service and its consumers. Those consumers may be households<sup>24</sup>, the outside world<sup>25</sup> (exports), or other local industries (intermediate demand<sup>26</sup>) or institutions (e.g. government<sup>27</sup>) that may use the product of industry I for consumption (final demand<sup>28</sup>) or as inputs to which they will add further value in the production of their own product.<sup>29</sup>

Figure 14. Forward and Backward Linkages Supporting Industry



Input-output analysis works in the reverse, stressing the effects of change from final demand backward to intermediate and primary supply sectors.<sup>30</sup> Therefore the method is market rather than input oriented and pays no attention to resource constraints or forward or

<sup>24</sup> Households are considered both consumers of goods and services as well as sellers (e.g. labor) and are defined as individuals or families either employed or residing in the region.

<sup>25</sup> The outside world refers to individuals and activities other than government outside of the region.

<sup>26</sup> Intermediate or inter-industry demand refers to transactions among private industries within the region.

<sup>27</sup> Government can be Federal, state, or local public authorities within or outside the region.

<sup>28</sup> Final demands are sales of output considered to be in its final form, ready for the final stage of use rather than additional processing. In other words, they are goods and services leaving the region's stream of processing activity by way of exports, household or public sector consumption, or through incorporation into capital stock.

<sup>29</sup> Value added is the portion of total value of output exclusively contributed by the intermediate industry.

<sup>30</sup> Inputs are known as factors of primary supply where they are inputs entering the region's processing system for the first time (e.g. labor and capital imports).

complementary linkage effects.<sup>31</sup> As such, input-output is said to be a demand-driven model of a regional economy that implicitly assumes that input supplies needed to meet demand are immediately forthcoming with no additive cost. For example, if export demand for a region's manufacturing products increased so that the sector's demand for labor exceeded the local labor force then it is inferred that workers from outside the region would move inside, thus filling the additional need. Conversely, a supply-driven model is dependent on the availability of input resources and assumes unlimited demand of regional products. Accordingly, supply-driven models work forward from primary supply to final demand and changes in the draw upon primary supplies, rather than final demand, give rise to income and employment growth.

The two models of economic growth are complementary, and if taken together, would provide greater insight into the real processes of change. However, the impacts of changes to input supplies are not as easily detected as that which is due to changes in input demand. For instance, besides some special occasions where technological difference is prevalent within a sector, goods normally pass through successive stages of processing that can be defined in a general production function. Therefore, the necessary increase in inputs due to change in output demand can reasonably be determined. Increases to supply, on the other hand, are not readily traceable. It cannot legitimately be stated that the increased availability of a particular supply will be used for the process and handling of any one product, unless, once again, the form of that input is highly specialized. Given that difficulty, there is presently no model that adequately incorporates the two approaches. As such, input-output remains one-sided and the user must be aware of the implications of that bias.<sup>32</sup>

There are three descriptive measures of economic contributions associated with input-output models: output, value added, and employment. Employment represents the number of jobs or people employed in an industry and output is the total dollar value of industry production.

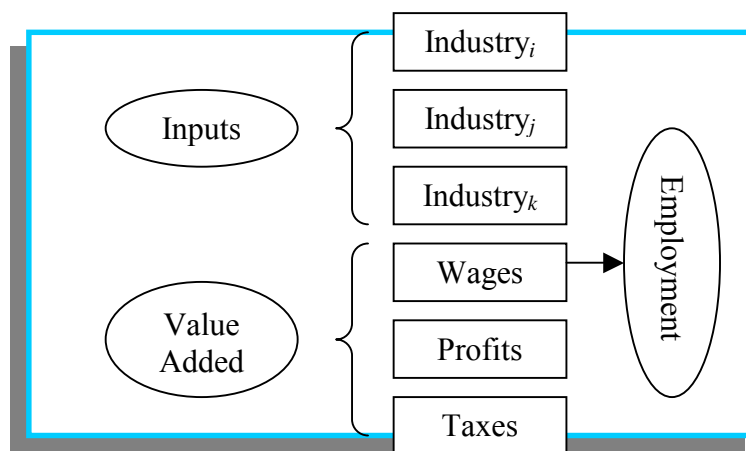
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<sup>31</sup> The technical limitations of input-output are based on the following assumptions: 1. The output of each sector is produced with a unique set of inputs, as such, there is no substitution of inputs. 2. The amount of input purchased is determined solely by level of output. Therefore, price effects, changes in technology, and economies of scale are not accounted for. 3. There are no external economies of scale (no agglomeration economies or new industries are included in an additive manner). 4. The in-state and out-of-state distribution of purchases and sales is fixed. 5. There are no constraints on resources, supply is infinite and perfectly elastic. 6. Local resources are efficiently employed, meaning there is no under employment of resources. All new employment stems from employees moving into the region and anyone who loses their job will leave the region.

<sup>32</sup> To guard against misleading conclusions the analysis results must be checked against the known conditions of the study region. For instance, knowledge of excess capacity or resource shortages should be considered during the process of interpretation and wherever possible the analytical technique should be modified to reflect those conditions.

Value added is comprised of wages, profits, and taxes that result from economic activity and it is the most readily accepted measure of economy-wide effects because it avoids the measurement error that takes place when the value of industry output is used. The error stems from multiple counting that occurs when output is summed across industries, in other words, output of an industry may be part of the value of output from another or several industries due to inter-industry linkages. Since value added is unique to each industry, it can be summed across the economy without suffering the same. Employment is a value added concept and is also exclusive to individual industries, yet it lacks as a measurement of effects by itself because it does not account for differences in productivity among industries. Figure 15 shows the relationship among these individual measures.<sup>33</sup>

Figure 15. Total Value of Output of Industry I



As previously expressed, input-output models are driven by final demand for goods and services. In order to meet those demands industries respond by way of direct or indirect supply in the sense that each producing industry generates its own demand that other industries must fulfill. This is an iterative process that is captured by input-output through what are known as multipliers.

Multipliers break the round by round impacts of economic stimuli into three components: direct effects, indirect effects, and induced effects. Direct effects represent the impacts of the initial change to final demand, therefore it is the change under consideration, such as an increase

<sup>33</sup> Derived from conceptual model presented in Deputy and Hopkins, February 1999.

in product output to the manufacturing sector where demand for manufactured goods has gone up. Indirect effects are the inter-industry changes that would result from purchases made by the manufacturing sector as it responds to that new demand. This may not only result in increased activity for other sectors, but may also invoke additional changes to manufacturing as well. Induced effects represent the impacts to all local industries that result from the growth in expenditures of households.<sup>34</sup> Those expenditures stem from the generation of new income by way of the direct and indirect effects. For instance, that initial change in manufacturing output may yield new jobs thus producing additional income, of which a portion is spent within the regional economy, creating additional demands for goods and services in multiple industries, and so on and so forth.<sup>35</sup>

The process described is sometimes referred to as the circular flow of income, which is presented in Figure 16.<sup>36</sup> Beginning with industry I, an economic stimuli (i.e. change in final demand) will result in factor payments made from industry I to land, labor, capital, and government in return for inputs and supplies, thereby creating induced effects. Those induced effects will return to industry I as well as other industries as product payments, which is income used to purchase more goods and services. The initial stimuli will also cause other industries to respond due to demands placed on them by industry I as it meets its needs. This will in turn create indirect effects that also move back through the system as factor payments in exchange for the inputs and supplies needed to meet their new demand.

This seemingly endless flow of money continues until all income generated leaks out of the region, meaning that with each iteration some of that income may go to purchase imports<sup>37</sup> or into other financial realms, such as household savings. In that respect, it should be recognized that the size and location of the study area, and even the make-up of its population, might significantly alter the amount of leakage, and therefore, the magnitude of the multiplier. For instance, the greater the size of the defined region, the greater the opportunity may be to conduct economic activity within that region (e.g. a larger selection of businesses from which to make

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<sup>34</sup> The input-output model treats households as a separate industry and changes in spending from within that industry reflect increases or decreases in income and/or population that result from changes in final demand. Induced effects from other factors, such as government and investment, may also be counted, but the most prevalent measure is household alone.

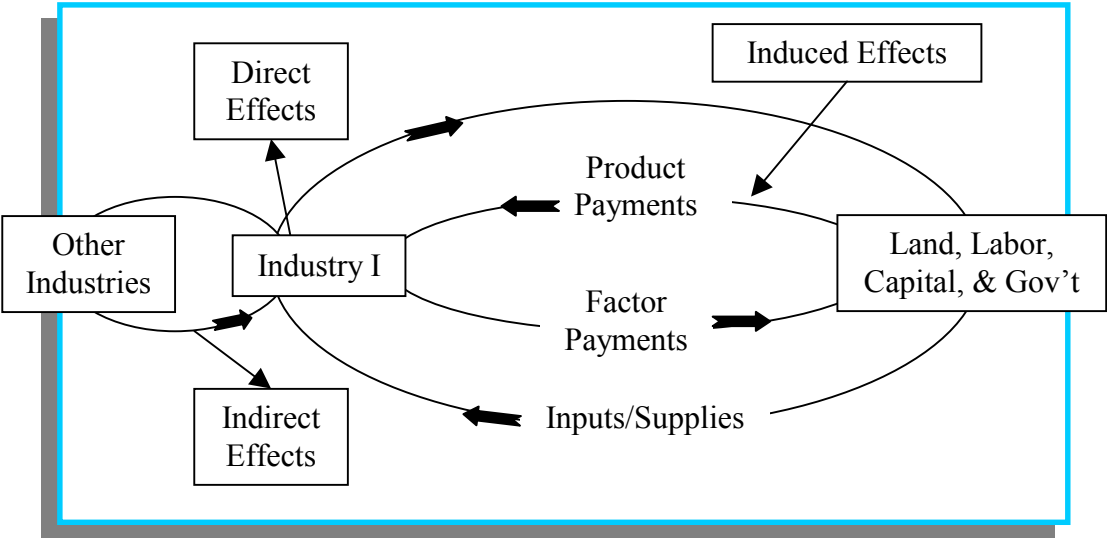
<sup>35</sup> Regional purchase coefficients, an econometrically derived measure of trade flows, are used to adjust for those portions of industry purchases made outside the region.

<sup>36</sup> Derived from conceptual model presented in Deputy and Hopkins, February 1999.

<sup>37</sup> Purchases made from outside the region under consideration, whether they be domestic or foreign.

purchases). In reference to geography, locations near major economic centers external to the region may draw from the local income pool more so than would be the case for remote study areas. The last example, population, presents multiple factors related to consumption and savings patterns, such as differences based on income levels or life-cycle stages. Therefore, for multipliers to prove useful for estimating impacts to changes in the local economy or identifying the structural interdependence between sectors, they must be accompanied by additional insight with respect to the region’s situation.

Figure 16. Circular Flow of Income



IMPLAN offers three basic sets of multipliers: output, employment, and total value added. The difference between these multipliers is relative to the relationships shown in Figure 15. Output multipliers represent the sum of direct and indirect requirements from all sectors needed to deliver a one-dollar unit of output to final demand. Employment multipliers measure the total change in employment due to a one-unit change in labor force employed for a given sector. Value added multipliers represent income or any value added component derived from the relationship between income and output. They include labor income (personal income = employee compensation + proprietor’s income), other property type income, and indirect business taxes. The total value added multiplier represents the additive change in those components based on the individual dollar shift in final demand.

There are also three common types of multipliers and they vary based on the effects that are counted. Type I multipliers measure the direct and indirect effects of change in economic activity. They are limited to capturing inter-industry effects, that is, the result of local industries buying from other local industries. Type II multipliers capture direct and indirect effects that stem from income and expenditures of households in addition to the inter-industry effects. This results in a higher estimate of economic activity (i.e. larger multiplier values) than for Type I.

Finally, type SAM multipliers capture the same effects as type II, but in a more well-defined manner by using complete social accounting information to generate a model that includes non-industrial financial flows (e.g. taxes).<sup>38</sup> This allows for the incorporation of such things as the effects of additional institutions (e.g. government) into the model as well as the resultant effects of the disaggregation of internal and external income flows, labor by household location, and households by income.<sup>39</sup> Generally, type SAM multipliers will be smaller than Type II, in part because household expenditures are based on disposable rather than total income.

Although type SAM multipliers more realistically capture the process of change in a regional economy than type II, and type II more so than type I, they are also more prone to error given the level of detail. However, since government activity is thought to be directly linked to the local economy and the role of income (i.e. poverty) is of particular concern for the region under consideration in this report, social accounts were used in the construction of the input-output model that follows.

## **Commodity Supply**

Commodity supply is a measure of the resources available to a region from which to extract value added. In other words, it represents the product base on which other economic activity is dependent (i.e. by way of production and trade of those commodities). Two different forms of commodity production are considered in this analysis, industry commodity production,

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<sup>38</sup> The social accounting matrix contains standard input-output information (value added factors, institutional final demand, and import/export trade) as well as: 1. Factor and institution exports- value added and institution payments received from outside the region. 2. Factor imports- distribution of payments outside the region. 3. Factor distribution- payments from value added sectors to institutions. 4. Inter-institutional transfers- payments from one institution to another.

<sup>39</sup> Social accounts include data on income distribution, commuting, tax payments, and savings. This allows for labor income to be distributed among households living in the region, households outside the region, and social security

which represents the production of commodities by industries and institutional commodity sales or those commodities produced by non-industry sources, such as households. Each are presented as a percentage of total production for all commodities and that which is available for local and domestic consumption (Table 2).<sup>40</sup> Industry production is further broken down into production as a percentage of market shares by individual sectors (Table 3).<sup>41</sup>

Table 2. Commodity Supply; Percent of Total; Sumter Co., AL; 1998

<b>Commodity</b>	Industry Commodity Production*	Institutional Commodity Sales*	Total Commodity Supply*	Net Commodity Supply*
Ag, Fishing, Forestry	5.2%	0.9%	5.0%	5.0%
Mining	0.0%	0.1%	0.0%	0.0%
Construction	5.1%	0.0%	4.8%	5.0%
Manufacturing	37.3%	0.9%	35.6%	34.6%
TCPU	11.6%	0.9%	11.0%	10.8%
Trade	9.2%	4.9%	9.0%	9.2%
FIRE	6.5%	0.0%	6.2%	6.3%
Services	14.6%	77.3%	17.6%	18.3%
Government	10.2%	0.0%	9.7%	10.1%
Other	0.3%	15.0%	1.0%	0.7%
<b>Total</b>	<b>320.97</b>	<b>20.24</b>	<b>341.20</b>	<b>326.84</b>

Total percentages may not sum to 100 due to rounding  
\*Millions of Dollars

Industry based production is largely comprised of manufacturing commodities, which make up more than 37 percent of that which is produced locally (*see* Table 2). Services are the second largest industry commodity produced and also represent the most significant category of institutional commodity sales (77.3 percent). The majority of total commodity supply, approximately 96 percent, remains available for local and domestic export consumption. Therefore, very little of what is produced in Sumter County is being exported directly to foreign markets. This is understandable, since much of what might be perceived of as foreign exports from Sumter are product sales to multinational companies that are involved in foreign trade.

Industry sectors are defined by the product that they produce the most, however, total industry output may also include alternative commodity types. For instance, in Sumter County

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taxes. Therefore consumption expenditures of in-region households are based on disposable income only and measures of government and investment can also be derived if so desired.

<sup>40</sup> Local commodity demand + domestic commodity demand = net commodity supply = total commodity supply – foreign exports. Foreign exports are commodities exported beyond national borders while domestic exports are commodities exported (outside of the region) but that which remains within national boundaries.

<sup>41</sup> Market shares are the percentage of the total production of a commodity that is produced by each industry.



only 71.4 percent of service commodities are produced by the service industry. The remaining market share is for the most part produced by miscellaneous other enterprises, with 21.1 percent of production (*see* Table 3).<sup>42</sup> Unlike most other places, where government commodity production is highly diversified, Sumter County government contributes 6.1 percent to TCPU commodity production and little elsewhere. Potentially owing to the limited community services in the region. In general, the majority of Sumter industries are single commodity type, which alludes to the specialization and lack of diversification noted earlier.

Table 3. Market Share of Commodity Produced; Percent of Total; Sumter Co., AL; 1998

<b>Commodity / Industry</b>	Ag, Fishing, Forestry	Mining	Const- ruction	Manu- facturing	TCPU	Trade	FIRE	Service	Government	Other
Ag, Fishing, Forestry	99.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
Mining	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Construction	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Manufacturing	0.0%	59.9%	0.0%	99.8%	0.0%	0.0%	0.0%	4.5%	0.0%	2.0%
TCPU	0.0%	0.0%	0.0%	0.0%	93.5%	0.0%	0.0%	2.1%	0.1%	0.1%
Trade	0.0%	0.0%	0.0%	0.0%	0.0%	96.7%	0.0%	0.0%	0.0%	0.2%
FIRE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.0%	0.7%	0.0%	0.0%
Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	71.4%	0.0%	0.0%
Government	0.0%	0.0%	0.0%	0.0%	6.1%	0.7%	1.9%	0.1%	99.9%	0.0%
Other	0.8%	31.8%	0.0%	0.0%	0.4%	2.6%	0.0%	21.1%	0.0%	28.7%
Households	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.9%
Capital	0.0%	8.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.9%
Inventory	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Total percentages may not sum to 100 due to rounding

## Commodity Demand

Demand can also be broken into two categories, intermediate commodity demand or locally generated demand by industries for local and/or imported commodities and institutional commodity demand, which is local demand by non-industry sources for the same commodities. Institutional demand is comprised of household, government, and other institution final

<sup>42</sup> Inventory consists of output that is produced but not sold within one year. The inventory production sector can be thought of as a regional warehouse in which all commodity produced that is not immediately consumed or used to produce more commodities gets placed.

commodity demands, such as capital.<sup>43</sup> Each represents end users that buy goods and services for consumption (includes imports and exports). These goods and services leave the regional economy, and therefore, are not used to generate more products locally.<sup>44</sup> Both total intermediate and institutional demands, as well as relevant breakdowns are given in the following tables (Tables 4-10).

The leading intermediate commodity demands in Sumter County include manufacturing and FIRE (*see* Table 4). FIRE (23.6 percent) is also among the leaders for institutional demand, holding the number one spot. Intermediate commodity demand is broken into industry sectors in Table 5. This table gives an indication as to the backward linkages that exist for local industries. For instance, 52.7 percent of total demand for the construction industry is for manufacturing commodities, which in Sumter are produced almost entirely by the manufacturing industry (*refer to* Table 3). However, the extent to which local manufacturing industry production is used to meet that demand will be discussed in a later section.

Table 4. Commodity Demand; Percent of Total; Sumter Co., AL; 1998

<b>Commodity / Industry</b>	<b>Intermediate Commodity Demand*</b>	<b>Institutional Commodity Demand*</b>	<b>Total Gross Commodity Demand*</b>
Ag, Fishing, Forestry	4.9%	0.6%	2.1%
Mining	3.5%	0.0%	1.3%
Construction	2.8%	5.9%	4.8%
Manufacturing	39.7%	16.0%	24.5%
TCPU	11.4%	7.4%	8.8%
Trade	7.5%	17.9%	14.2%
FIRE	18.9%	23.6%	21.9%
Services	0.8%	11.6%	7.7%
Government	0.8%	11.6%	7.7%
Other	1.0%	1.7%	1.4%
<b>Total*</b>	<b>134.49</b>	<b>323.37</b>	<b>457.86</b>

Total percentages may not sum to 100 due to rounding

\*Millions of dollars

<sup>43</sup> Capital is representative of private expenditures for durable goods or capital equipment, but expenditure values are not representative of those made by industrial sector, but rather, are increases to a region's overall durable goods assets.

<sup>44</sup> This is the same as final demands as discussed in the overview.

Table 5. Intermediate Commodity Demand; Percent of Total; Sumter Co., AL; 1998

Industry/ Commodity	Ag, Fishing, Forestry*	Mining*	Con- struction*	Manu- facturing*	TCPU*	Trade*	FIRE*	Services*	Govern- ment*
Ag, Fishing, Forestry	34.3%	0.0%	1.1%	5.2%	0.0%	1.3%	2.4%	0.3%	0.4%
Mining	0.2%	0.0%	1.2%	3.9%	9.9%	0.0%	0.0%	0.0%	4.9%
Construction	2.3%	0.0%	0.2%	1.1%	5.3%	1.6%	12.5%	2.3%	28.7%
Manufacturing	28.0%	0.0%	52.7%	54.5%	10.3%	21.1%	2.3%	18.2%	17.5%
TCPU	7.5%	0.0%	6.0%	7.9%	34.8%	11.5%	6.5%	9.0%	19.3%
Trade	11.0%	0.0%	15.2%	11.4%	4.5%	8.9%	1.2%	5.0%	2.7%
FIRE	11.2%	0.0%	3.4%	3.0%	6.4%	13.6%	50.2%	16.1%	7.6%
Services	5.3%	0.0%	19.9%	11.6%	25.1%	39.3%	22.5%	46.4%	14.1%
Government	0.1%	0.0%	0.3%	0.4%	0.6%	1.9%	2.3%	2.4%	2.2%
Other	0.0%	0.0%	0.0%	1.0%	3.1%	0.9%	0.3%	0.3%	2.2%
<b>Total Demand*</b>	9.464	0	12.933	102.695	21.62	9.13	6.614	19.552	4.458

Total percentages may not sum to 100 due to rounding

\*Millions of dollars

Total institution commodity demands include household and government demand as well as capital formation, inventory purchases, and foreign exports. In Sumter County households make up the largest proportion of institutional commodity demand (*see* Table 6). However, the single largest percentage of commodity demand by institution is held in capital formation for construction commodities.

Table 6. Institutional Commodity Demand; Percent of Total; Sumter Co., AL; 1998

Institution/ Commodity	Sum of Households	Sum of Federal	Sum of State & Local*	Capital*	Inventory*
Ag, Fishing, Forestry	0.7%	0.0%	0.4%	0.0%	2.0%
Mining	0.0%	0.0%	0.0%	0.0%	0.0%
Construction	0.0%	3.8%	13.7%	78.4%	0.0%
Manufacturing	18.6%	13.0%	7.9%	0.1%	27.7%
TCPU	7.8%	1.8%	5.5%	6.6%	29.7%
Trade	18.7%	1.2%	1.5%	11.9%	11.4%
FIRE	22.5%	3.6%	2.3%	2.5%	0.0%
Services	29.1%	15.1%	5.9%	0.5%	0.0%
Government	0.7%	60.1%	62.9%	0.0%	0.0%
Other	1.9%	1.3%	0.1%	0.0%	29.7%
<b>Total Demand*</b>	255.13	5.59	53.12	15.49	2.02

Total percentages may not sum to 100 due to rounding

\*Millions of dollars

Table 7. Household Commodity Demand; Percent of Total; Sumter Co., AL; 1998

Household Income/ Commodity	<\$5k	\$5-10k	\$10-15k	\$15-20k	\$20-30k	\$30-40k	\$40-50k	\$50-70k	\$70k+
Ag, Fishing, Forestry	0.7%	0.7%	0.8%	0.8%	0.7%	0.6%	0.7%	0.6%	0.5%
Mining	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Construction	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Manufacturing	16.1%	17.7%	20.9%	20.4%	19.4%	18.1%	19.8%	19.0%	17.7%
TCPU	8.5%	8.5%	9.2%	8.3%	7.7%	7.1%	6.9%	6.7%	6.8%
Trade	16.1%	15.9%	19.3%	18.8%	20.4%	19.0%	20.6%	20.6%	19.2%
FIRE	21.2%	20.8%	23.3%	21.9%	22.1%	23.1%	24.5%	23.6%	24.8%
Services	35.3%	34.0%	24.1%	27.5%	27.1%	29.6%	24.8%	26.4%	28.1%
Government	0.6%	0.6%	0.7%	0.8%	0.8%	0.6%	0.7%	0.6%	0.8%
Other	1.6%	1.7%	1.7%	1.6%	1.9%	1.8%	2.0%	2.5%	2.1%
<b>Total Demand*</b>	<b>38.68</b>	<b>34.15</b>	<b>25.33</b>	<b>21.60</b>	<b>41.33</b>	<b>25.74</b>	<b>16.47</b>	<b>33.62</b>	<b>18.21</b>

Total percentages may not sum to 100 due to rounding

\*Millions of dollars

Household commodity demand consists of payments by individuals and households to industries for goods and services used for personal consumption. Household demand makes up the largest component of final demand, as shown in Table 6. Yet, spending patterns can differ dramatically when disaggregated by income level and commodity types. For instance, spending on services is greatest in Sumter County for the lowest two income groups, 35.3 percent for those below \$5k and 34 percent for \$5k-10k, compared to 24.1 percent for the next highest income group (*see* Table 7). In addition, table 7 suggests that spending on services is greatest for all Sumter County households regardless of income range and the same holds for FIRE in the second place spot. However, there is a clear break from lower to higher income groups for the third position, manufacturing for 5 thousand to 20 thousand household incomes and Trade (combined retail and wholesale) for the 20 thousand to 70 thousand range. Yet, when commodity types are further disaggregated owner-occupied dwellings appear as that which is most in demand for the majority of income groups (*see* Table 8). This suggests that at the local level increases to services and FIRE may be well received, but that is dependent on the current level of saturation in addition to other market and income forces, such as price levels and the ability to purchase.

Table 8. Top Household Commodity Demands; Percent Total All Commodity Demands by Income Group; Sumter Co., AL; 1998

Household Income/ Commodity	<\$5k	\$5-10k	\$10-15k	\$15-20k	\$20-30k	\$30-40k	\$40-50k	\$50-70k	\$70+
Owner-occupied Dwellings	7.1%	5.5%	8.0%	7.9%	8.1%	9.8%	11.0%	12.5%	15.1%
Hospitals	9.7%	9.4%	4.1%	8.8%	7.3%	9.4%	4.9%	5.0%	4.6%
Real Estate	8.4%	8.7%	8.1%	6.5%	5.7%	4.7%	3.6%	2.0%	1.2%
Doctors and Dentists	4.4%	4.5%	5.4%	5.2%	5.3%	4.7%	5.7%	5.9%	5.3%
Eating & Drinking	4.0%	2.6%	3.6%	4.0%	4.4%	4.4%	4.9%	4.7%	5.0%
Banking	3.7%	4.1%	4.4%	3.8%	4.3%	4.3%	4.7%	4.0%	3.1%
Wholesale Trade	3.3%	3.5%	4.1%	3.8%	3.9%	3.6%	3.8%	3.8%	3.4%
Insurance Carriers	1.3%	1.6%	2.3%	2.6%	2.9%	3.4%	4.0%	4.2%	4.8%
Miscellaneous Retail	2.1%	2.3%	3.0%	2.6%	3.2%	2.8%	3.0%	3.0%	2.6%

Government commodity demand is broken into Federal expenditures on military purchases, non-military purchases, and investment and state and local expenditures on non-education, education, and investment. Non-military expenditures supply all other Federal government functions (e.g. natural resource management of public lands) and non-education expenditures are for all other state and local government activities, such as police protection. Both Federal and state and local investment expenditures are for capital goods and construction. As would be expected, the majority of state and local expenditures are on education and are derived from the government (*see* Table 9). The majority of all other government institutional demands are for government commodities, except for significant amounts in manufacturing and service commodities in Federal non-defense and state and local non-education institutions.

Table 9. Government Commodity Demand; Percent of Total; Sumter Co., AL; 1998

Institution/ Commodity	Federal Non- defense*	Federal Defense*	Federal Investment*	State & Local Non-education*	State & Local Education*	State & Local Investment*
Ag, Fishing,						
Forestry	0.0%	0.0%	0.0%	0.9%	0.2%	0.0%
Mining	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
Construction	5.3%	0.0%	18.9%	8.7%	2.0%	97.4%
Manufacturing	15.6%	0.0%	75.2%	12.7%	6.5%	2.0%
TCPU	4.5%	0.0%	0.2%	7.7%	5.3%	0.0%
Trade	1.8%	0.0%	5.5%	3.1%	0.9%	0.3%
FIRE	9.1%	0.0%	0.0%	7.1%	0.3%	0.0%
Services	37.8%	0.0%	0.0%	12.4%	3.7%	0.0%
Government	22.7%	100.0%	0.0%	47.4%	80.8%	0.0%
Other	3.3%	0.0%	0.0%	0.0%	0.1%	0.2%
<b>Total Demand*</b>	2.229	2.856	0.508	15.37	32.333	5.415

Total percentages may not sum to 100 due to rounding

\*Millions of dollars

The last category of commodity demands are exports. Foreign exports are shipments from local industries to destinations outside of the United States, while domestic exports are shipments outside of the local area but within the U.S. Manufacturing commodities make up the greatest percentage share of both foreign and domestic exports (*see* Table 10). When that sector is disaggregated by that which is applicable only to the forestry industry, wood product commodities are by far the most in demand by both foreign and domestic markets followed closely by pulp and paper (*see* Table 11).<sup>45</sup>

Table 10. Commodity Exports; Percent of Total; Sumter Co., AL; 1998

<b>Export/Commodity</b>	<b>Foreign*</b>	<b>Domestic*</b>	<b>Total*</b>
Ag, Fishing, Forestry	5.6%	22.1%	17.3%
Mining	0.0%	0.0%	0.0%
Construction	0.0%	0.0%	0.0%
Manufacturing	58.0%	68.0%	65.1%
TCPU	15.8%	7.6%	9.9%
Trade	4.6%	0.0%	1.3%
FIRE	4.2%	0.0%	1.2%
Services	3.3%	0.0%	1.0%
Government	0.1%	2.4%	1.7%
Other	8.5%	0.0%	2.4%
<b>Total*</b>	<b>17.80</b>	<b>44.21</b>	<b>62.01</b>

Total percentages may not sum to 100 due to rounding

\*Millions of dollars

Table 11. Commodity Exports; Forestry Sector; Percent of Total; Sumter Co., AL; 1998

<b>Export/Commodity</b>	<b>Foreign*</b>	<b>Domestic*</b>	<b>Total*</b>
All Others	58.1%	0.0%	11.4%
Ag, Forestry, Fishing	0.0%	0.1%	0.1%
Pulp & Paper	16.0%	49.1%	42.6%
Wood Furniture	0.0%	0.0%	0.0%
Wood Products	25.9%	50.8%	45.9%
<b>Total*</b>	<b>17.80</b>	<b>72.91</b>	<b>90.71</b>

Total percentages may not sum to 100 due to rounding

\*Millions of dollars

## Consumption Patterns

In order to understand the conjunction between the supply and demand factors noted for Sumter County and the growth potential as they relate to the local economy, consumption

<sup>45</sup> The data necessary to subdivide agricultural, forestry, and fishing services into their respective industries/commodities were not available. Therefore, this is the only sub-sector that is not wholly applicable to forestry.

patterns must also be examined. Local supply and demand relationships are translated through the S/D ratio, average RPCs, and average RSCs (Tables 12 and 13). The domestic S/D ratio is the relationship of net commodity supply to total gross commodity demand. (If supply exceeds demand then the ratio is set to one). The regional purchase coefficient (average RPC) is the estimated fraction of the county's gross regional commodity demand that is satisfied by local commodities. For example, if the RPC for agriculture is equal to .75 then 75 percent of local demand is met by locally produced commodities and therefore, 25 percent of that demand must be met by imports (Tables 14 and 15). On the other hand, the regional sales coefficient (average RSC) is the fraction of net commodity supply used to meet county gross commodity demand. If the RSC for agriculture is .91 then 91 percent of that which is produced locally is consumed locally.

Table 12. Comparison of Commodity Supply and Demand; Sumter Co., AL; 1998

Commodity	Domestic S/D Ratio	Average RPC	Average RSC
Ag, Fishing Forestry	1	0.9054	0.4837
Mining	0.0088	0.0088	1
Construction	0.8125	0.8125	1
Manufacturing	1	0.85	0.7279
TCPU	0.9453	0.8723	0.8666
Trade	0.5367	0.5367	0.9783
FIRE	0.3418	0.3418	0.971
Services	0.6437	0.6437	0.9919
Government	1	0.9874	0.9734
Other	0.3831	0.3831	0.6523

Domestic export demand for commodities produced in Sumter County exceed supply for all commodities except agriculture, fishing, and forestry services, manufacturing, and government (*see* Table 12). The percentage of local demand met by locally produced commodities is greatest for government (99 percent) and agriculture, fishing, and forestry service (91 percent). Yet, mining and construction have the greatest percentage of total commodity produced and consumed locally at 100 percent, followed closely by services, trade, and government. In general, besides other<sup>46</sup> commodities, FIRE shows the greatest potential for growth domestically and potentially locally as well, since 97 percent of that which is produced is consumed locally yet only 34 percent of that demand is being filled. Trade and services also

show the potential for local growth, with only 54 percent and 64 percent of current demand met, respectively. However, when disaggregating for the forestry sector pulp and paper, wood products, and agricultural, fishing, and forestry services show the least growth potential for local and domestic markets (*see* Table 13). While wood furniture would be a likely candidate for production expansion as only 2.6 percent of both domestic and local market demands were met by Sumter County in 1998.

Table 13. Comparison of Commodity Supply and Demand; Forestry Sector; Sumter Co., AL; 1998

Commodity	Domestic S/D Ratio	Average RPC	Average RSC
All Others	0.6109	0.6109	0.9659
Ag, Forestry, Fishing	1	0.8555	0.7378
Pulp & Paper	1	0.959	0.31
Wood Furniture	0.2583	0.2583	1
Wood Products	1	0.8202	0.2732

Imports in Trade, FIRE, and services make up the most significant portion of total imports (*see* Table 14). Among the three, FIRE commodity purchases represent the highest level of leakages for the county in terms of both total and institutional imports, followed by services and then trade. Yet services and manufacturing imports are greatest for intermediate use.

Table 14. Commodity Imports; Sumter Co., AL; 1998

Import/ Commodity	Intermediate*	Institutional*	Total*
Ag, Fishing, Forestry	1.6%	0.2%	0.6%
Mining	12.2%	0.0%	4.0%
Construction	1.8%	3.4%	2.9%
Manufacturing	20.8%	7.3%	11.7%
TCPU	5.1%	2.9%	3.6%
Trade	15.3%	21.5%	19.5%
FIRE	17.3%	35.7%	29.7%
Services	23.5%	25.5%	24.9%
Government	0.0%	0.4%	0.3%
Other	2.2%	3.1%	2.8%
<b>Total*</b>	<b>53.33</b>	<b>109.21</b>	<b>162.55</b>

Total percentages may not sum to 100 due to rounding

\*Millions of dollars

Only a small percentage of forestry sector commodities are imported compared to all others for the county (*see* Table 15), and when taken as a comparison of imports to exports for

<sup>46</sup> “Other” is a catch-all grouping of that which does not readily lend itself to categorization in any of the alternative



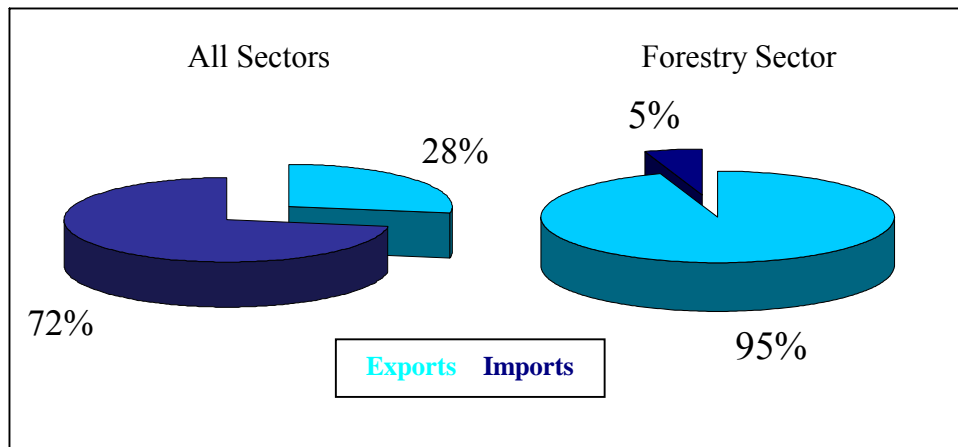
that sector alone, the percentage of forestry sector exports is extremely high relative to those for all sectors (see Figure 17). The county as a whole is importing far more than it is exporting, which suggests that its level of self-sufficiency is low. Yet, the forestry sector is clearly defined as a dominant export base for the county, which means that the region is highly dependent on forestry for the draw of wealth from outside to inside the county.

Table 15. Commodity Imports; Forestry Sector; Sumter Co., AL; 1998

Import/ Commodity	Intermediate*	Institutional*	Total*
All Others	93.5%	99.6%	97.6%
Ag, Forestry, Fishing	0.1%	0.0%	0.0%
Pulp & Paper	1.1%	0.0%	0.4%
Wood Furniture	0.1%	0.2%	0.2%
Wood Products	5.3%	0.1%	1.8%
<b>Total*</b>	<b>62.76</b>	<b>128.49</b>	<b>191.25</b>

Total percentages may not sum to 100 due to rounding  
 \*Millions of dollars

Figure 17. Trade Balance; Percent of Total Imports & Exports; Sumter Co., AL; 1998



In reference to the last point, the economic base shows little room for future growth as evidenced by comparing Tables 10 and 12. For instance, 68 percent of manufacturing commodities were exported domestically in 1998 thereby suggesting that it accounted for a significant percentage of wealth generation in Sumter. In conjunction, domestic supply of those commodities exceeded demand, leaving little to no room for domestic export growth given market conditions. A worse scenario presents itself when the forestry sector is examined alone

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sectors, therefore it is difficult to infer any relationships from it.

as both the pulp and paper and wood products sector domestic markets are saturated (S/D = 1). This means that the final demand for commodities on which the county is most dependent exhibits little hope for future growth in the domestic arena.

### Economic Contributions

A relative measure of the economic contributions of the aforementioned activities to the region can be ascertained from examining the value of each industry's total production (output), number of jobs (employment), and related income flows (i.e. value added). Values for all aggregated industry sectors are given as well as the total in comparison to the forestry sector (Tables 16 and 17).

Table 16. Output, Employment & Value Added; Percent of Total; Sumter Co., AL; 1998

Industry	Industry Output*	Employment	Employee Compensation*	Proprietor Income*	Other Property Income*	Indirect Business Tax*	Total Value Added*
Ag, Fishing, Forestry	5.2%	8.8%	0.9%	36.8%	6.0%	4.3%	5.4%
Mining	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Construction	5.1%	3.5%	3.8%	8.6%	1.3%	1.1%	3.4%
Manufacturing	38.1%	18.5%	24.3%	7.9%	29.4%	10.1%	23.2%
TCPU	11.2%	6.1%	9.5%	9.1%	12.5%	22.1%	10.9%
Trade	9.1%	17.5%	11.5%	8.9%	10.9%	39.3%	12.9%
FIRE	6.5%	2.7%	2.4%	3.1%	27.2%	16.9%	9.1%
Services	13.2%	17.6%	19.0%	25.6%	5.6%	6.2%	15.7%
Government	11.1%	22.4%	27.7%	0.0%	7.1%	0.0%	18.9%
Other	0.3%	3.0%	0.9%	0.0%	0.0%	0.0%	0.6%
<b>Total*</b>	<b>397.25</b>	<b>6300.00</b>	<b>130.93</b>	<b>18.09</b>	<b>48.73</b>	<b>13.04</b>	<b>210.79</b>

Total percentages may not sum to 100 due to rounding

\*Millions of dollars

Total output for the Sumter County economy was 397.252 million dollars in 1998, of which 38.1 percent was produced by manufacturing and 13.2 percent by services (see Table 16). As in the trend analysis, the largest employers in 1998 continued to be government (22.4 percent), manufacturing (18.5 percent), services (17.6 percent), and trade (17.5 percent). The largest employers, as noted earlier, were government, manufacturing, and services. Government, which includes schools, state and local government, and federal government and military, also

generated the largest percentage of employee compensation in the county (27.7 percent). However, manufacturing was the most significant industry overall for total value added for the year, adding 48.850 million dollars to the 161.937 million dollars of all other industries combined. The forestry sector in comparison to the rest gave the county 29.1 percent of its output, which was equally distributed between pulp and paper and wood products (*see* Table 17). However, pulp and paper contributed nearly 40 percent more in employment and 80 percent more of total value added than did wood products.

Table 17. Output, Employment, & Value Added; Forestry Sector;  
Percent of Total; Sumter Co., AL; 1998

<b>Industry</b>	Industry Output*	Employment	Employee Compensation*	Proprietor Income*	Other Property Income*	Indirect Business Tax*	Total Value Added*
All Others	70.9%	86.7%	81.8%	93.5%	78.4%	92.1%	82.6%
Ag, Forestry, Fishing	0.1%	0.4%	0.0%	0.2%	0.0%	0.0%	0.1%
Pulp & Paper	14.5%	7.5%	10.8%	6.3%	15.5%	4.2%	11.1%
Wood Furniture	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Wood Products	14.5%	5.4%	7.4%	-0.1%	6.1%	3.6%	6.2%
<b>Total*</b>	397.25	6300.00	130.93	18.09	48.73	13.04	210.79

Total percentages may not sum to 100 due to rounding  
\*Millions of dollars

The industry to industry impact of economic activity can be determined by examining production relationships in the region. The benefit of doing so is that it allows for the estimation of changes to total economic contribution based on change in demand. One way to accomplish this is to state the patterns of expenditures made by a sector as proportions of all inputs needed to produce one dollar of output in a given sector, thus identifying linear production relationships.<sup>47</sup> This information is commonly presented in what is known as a direct requirements table (Tables 18 and 19).<sup>48</sup>

The direct requirements table can only be read down, as each column essentially represents a “production recipe” for one dollar of output for the purchasing sector at the column

<sup>47</sup> This is done by dividing the dollar value of inputs purchases from each sector by total expenditures.

<sup>48</sup> This is also referred to as the matrix of technical coefficients excluding households and imports, which if included would set the total row to one for each industry.

head.<sup>49</sup> Each number in the column is the dollar amount of inputs required from the processing sector on the left in order to produce that unit of output. For example, in Sumter County, for every dollar of sales by the manufacturing sector 37 cents worth of additional output from itself, 8 cents of output each for trade and services, and an additional 16 cents from remaining industries is required (*see* Table 18).

Given this example, an additional dollar of output by the manufacturing sector leads to the purchase of a total of 68 cents from other firms located in the region.<sup>50</sup> If those production requirements are not met by industries within the region then they are either obtained from institutions (i.e. households) or are imported. Therefore, in Sumter’s manufacturing sector 32 cents worth of inputs are derived from institutions or imports. This gives a sense for the level of industry and inter-industry self-sufficiency of the region and its ability to generate wealth. The greater the factor payments for intermediate inputs and supplies made externally, the greater the dependency of the local economy on the outside world (i.e sensitivity to exogenous factors of change) and the greater the opportunity for leakage. This is discussed in more detail in the remainder of this section.

Table 18. Direct Requirements Table; All Sectors; Sumter Co., AL; 1998

Purchasing / Processing Sectors	Ag.		Const- ruction	Manu- facturing	TCPU	Trade	FIRE	Service	Govern- ment
	Fishing, Forestry	Mining							
Ag, Fishing, Forestry	0.16	0.00	0.01	0.04	0.00	0.00	0.01	0.00	0.00
Mining	0.00	0.00	0.01	0.03	0.05	0.00	0.00	0.00	0.00
Construction	0.01	0.00	0.00	0.01	0.03	0.00	0.03	0.01	0.03
Manufacturing	0.13	0.00	0.34	0.37	0.05	0.05	0.01	0.07	0.02
TCPU	0.03	0.00	0.04	0.05	0.17	0.03	0.02	0.03	0.02
Trade	0.05	0.00	0.10	0.08	0.02	0.02	0.00	0.02	0.00
FIRE	0.05	0.00	0.02	0.02	0.03	0.03	0.13	0.06	0.01
Services	0.02	0.00	0.13	0.08	0.12	0.10	0.06	0.17	0.01
Government	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Other	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00
<b>TOTAL</b>	<b>0.46</b>	<b>0.00</b>	<b>0.64</b>	<b>0.68</b>	<b>0.48</b>	<b>0.25</b>	<b>0.26</b>	<b>0.37</b>	<b>0.10</b>

Assuming the direct requirements table represents the spending patterns necessary for additional production in all sectors, the effects of a change in a final demand for output in one can be traced to that of another. For instance, in the direct requirements table for the forestry

<sup>49</sup> This production formula is assumed to be constant and the same for all sector establishments regardless of input prices or production levels (e.g. no economies of scale).

<sup>50</sup> Sums may not be exact due to rounding.

sector, a one dollar unit change in demand for pulp and paper output results in an additional 26 cents worth of demand in pulp and paper products, 5 cents in wood products, and 47 cents from all other non-forestry sectors (*see* Table 19). Therefore, the direct effects of that one-dollar change on the economy would be 177 cents (the initial change plus the direct effect). However, the effect of that change does not stop at that point, the indirect effects must then be estimated by carrying those changes through the impacted sectors. In other words, the 47 cents worth of new demand on all other sectors, the 5 cents on wood products, and the additional 26 cents to pulp and paper must be accounted for. This is accomplished by multiplying the value of the direct effects by the numbers in the relevant columns, which would result in an additional 41 cents, making a total region-wide impact of 218 cents.

Table 19. Direct Requirements Table; Forestry Sector; Sumter Co., AL; 1998

<b>Purchasing / Processing Sectors</b>	All Others	Ag, Forest, Fish, Svc	Wood Products	Wood Furniture	Pulp and Paper
All Others	0.37	0.60	0.34	0.00	0.47
Ag, Forest, Fish Svc	0.00	0.02	0.00	0.00	0.00
Wood Products	0.00	0.00	0.25	0.00	0.05
Wood Furniture	0.00	0.00	0.00	0.00	0.00
Pulp and Paper	0.01	0.01	0.00	0.00	0.26
<b>Total</b>	<b>0.38</b>	<b>0.63</b>	<b>0.59</b>	<b>0.00</b>	<b>0.77</b>

The cycle of effects does not stop after just two rounds, however, the process continues until the level of indirect effects becomes insignificant (*refer to* Figure 16 *discussion*). IMPLAN calculates the sum of these effects or total requirements, which are presented in Tables 20 and 21 for all Sumter County sectors and the forest sector in comparison to all others.<sup>51</sup> Each column value indicates the total dollar value of output required from the processing sector by the purchasing sector for a one dollar increase in its final demand.<sup>52</sup> For example, the first element in the construction column (.03) indicates the total dollar increase in agriculture, fishing, and forestry service production that results from a one dollar increase in final demand for construction products. The second element indicates the total increase in mining output (.00) due to that same one-dollar increase in final demand for construction products. The one-dollar effect across industries continues to be captured down the row, totaling an industry-wide effect of nearly three-quarters times the original change to the construction industry (1.73).

<sup>51</sup> The total requirements table is also referred to as the Leontief inverse table.

Table 20. Total Requirements Table; All Sectors; Sumter Co., AL; 1998

<b>Purchasing / Processing Sectors</b>	Ag, Fishing, Forestry	Mining	Const-ruktion	Manu-facturing	TCPU	Trade	FIRE	Services	Government	Other
Ag, Fishing, Forestry	1.17	0.00	0.03	0.06	0.00	0.01	0.01	0.01	0.00	0.00
Mining	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Construction	0.01	0.00	1.01	0.01	0.03	0.01	0.03	0.01	0.02	0.00
Manufacturing	0.20	0.00	0.45	1.49	0.10	0.08	0.03	0.11	0.04	0.00
TCPU	0.05	0.00	0.07	0.08	1.17	0.04	0.02	0.05	0.02	0.00
Trade	0.04	0.00	0.07	0.06	0.02	1.02	0.01	0.02	0.00	0.00
FIRE	0.03	0.00	0.02	0.02	0.02	0.02	1.05	0.03	0.00	0.00
Services	0.00	0.00	0.09	0.07	0.08	0.06	0.03	1.10	0.01	0.00
Government	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
<b>Total</b>	1.51	0.00	1.73	1.79	1.42	1.22	1.17	1.31	1.11	1.00

Table 21. Total Requirements Table; Forestry Sector; Sumter Co., AL; 1998

<b>Purchasing / Processing Sectors</b>	All Others	Ag, Forest, Fish, Svc	Wood Products	Wood Furniture	Pulp and Paper
All Others	1.27	0.44	0.31	0.00	0.47
Ag, Forest, Fish Svc	0.00	1.01	0.00	0.00	0.00
Wood Products	0.01	0.00	1.27	0.00	0.07
Wood Furniture	0.00	0.00	0.00	0.00	0.00
Pulp and Paper	0.01	0.02	0.01	0.00	1.33
<b>Total</b>	1.29	1.48	1.58	0.00	1.86

An additional interpretation of the total requirements table is the amount of openness within the economy based on its measure of economic linkages. As mentioned previously, highly linked economies are more self-sufficient in production and are less dependent on outside input sources. A perfectly self-sufficient economy is referred to as a closed economy, whereas open economies are those which must rely on imports and therefore suffer leakages. The degree of linkage or openness of the Sumter economy can be obtained by reviewing the off-diagonal values in the total requirements table.<sup>53</sup> The larger the values the more tightly linked (closed) the economy, likewise, the smaller the values the more open the economy. The table can be difficult to interpret, however, therefore two illustrative examples for individual sectors are given (Figures 18 and 19).

<sup>52</sup> Total requirements are representative of inter-industry effects only (i.e. direct plus indirect), therefore induced effects are not included in the measure.

<sup>53</sup> Off-diagonal values are those that are less than one.

Figures 18 and 19 show the flow or ripple effect of a one hundred dollar unit change in final demand for construction and government output, respectively. The smaller graph on the left begins with round 0, the initial change, therefore the small graphs in both figures are to scale and can be directly compared. Round 0 is dropped in the larger graph so that the changes are visually more apparent. Clearly, the industry-wide direct effect of the change to construction is greater than that for government, as the impact of that 100 units is barely detectable in the smaller figure for government. In addition, the scale of effects in the larger graph is 10 times greater for construction than government. However, as the larger graphs reveal, the backward linkages of the government sector are more extensive (reaching more local industries) than the construction sector. Also, the initial 100 dollars circulates through more rounds of economic activity for government than for construction, although a greater percentage of that 100 dollars leaks out of the economy in the first round. As such, from a policy perspective, the preferred sector change would depend on the desired outcome (e.g. diversification and more self-sufficient vs. greater dollar returns but less self-sufficient).

Figure 18. Ripple Effect; One Hundred Construction Units; Sumter Co., AL; 1998

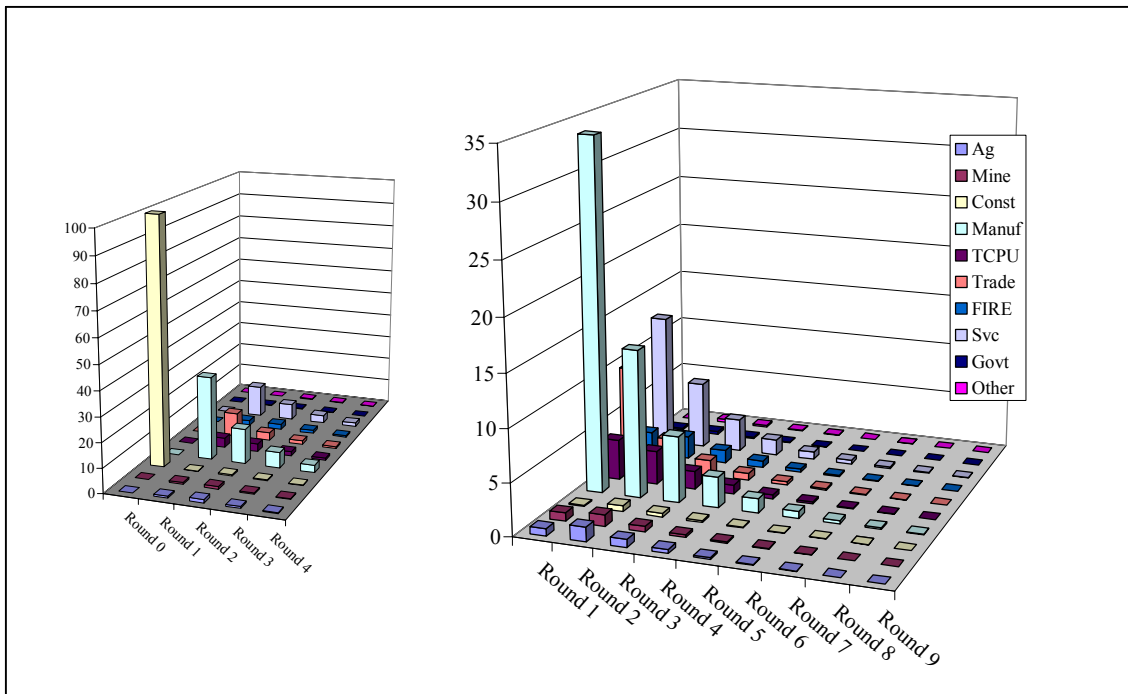
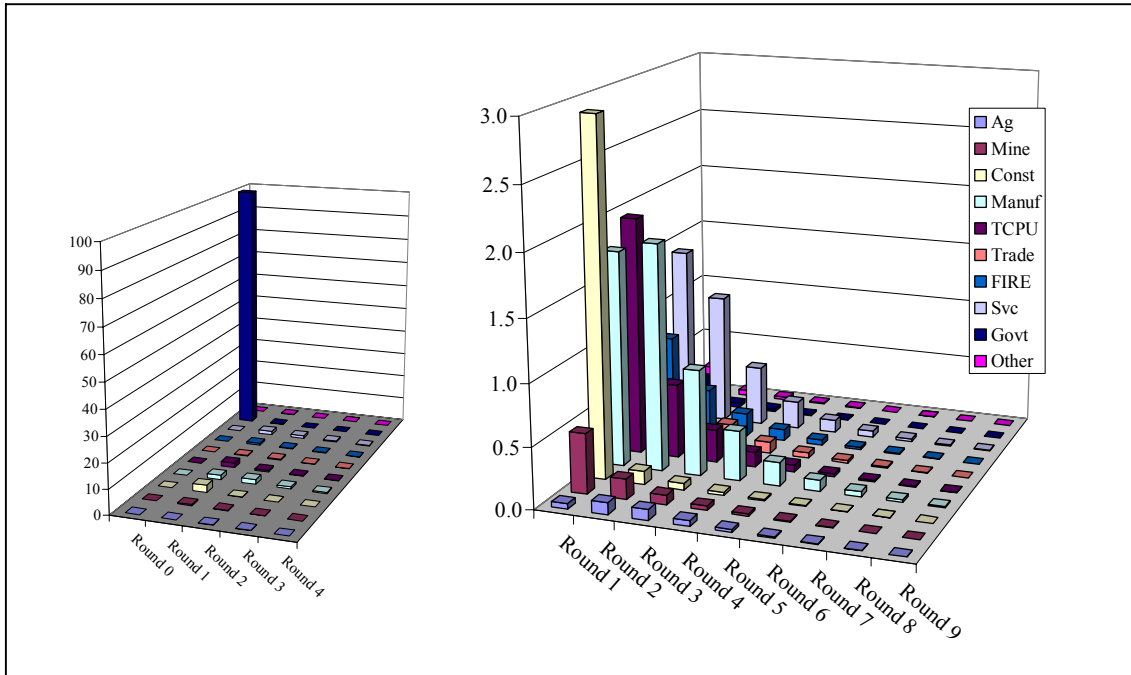


Figure 19. Ripple Effect; 100 Government Units; Sumter Co., AL; 1998



The industry to industry relationships presented numerically in the total requirements table and graphically by the ripple effect figures are equivalent to Type I output multipliers. Output is the basis of the other sets of multipliers as well, income per dollar of output for value added and output per worker ratios for employment. All three sets of final demand multipliers are given for all sectors as well as the forestry sector (Tables 22 and 23). Looking at the Type SAM multipliers in Table 22, manufacturing has the greatest overall effect for total value added, employment, and output. For the forestry sector, pulp and paper, which falls within the aggregated manufacturing sector, also has the largest multiplier for all three (*see* Table 23).

Multipliers can be used to assess the potential impacts of change to a region based on a “shock” or change in economic stimuli, such as the 50 new jobs in manufacturing used to produce an example impact analysis for Sumter County, as shown in Table 24. However, the determination as to whether or not a multiplier is accurate or the impact results reasonable requires additional research time, particularly time to answer a number of important questions. The most essential is of course: How closely does the estimate reflect economic relationships in the region under consideration? The answer may be dependent on the type of data used (e.g. primary or secondary), the level of sector aggregation, the base year from which the model was



constructed, the size of the impact in relation to the size of the affected industry, whether or not households or other institutions were included, and a number of other relevant factors. Therefore use of multipliers should be dealt with caution.

Table 22. Final Demand Multipliers; Sumter Co., AL; 1998

<b>Effect / Industry</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total*</b>	<b>Type I**</b>	<b>SAM***</b>	
<b>Value Added</b>	Ag, Fishing,						
	Forestry	0.5446	0.2563	0.2213	1.0222	1.4707	1.8770
	Mining	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Construction	0.3587	0.3190	0.2236	0.9012	1.8893	2.5126
	Manufacturing	0.3223	0.3411	0.1916	0.8550	2.0582	2.6526
	TCPU	0.5161	0.2098	0.2007	0.9266	1.4065	1.7953
	Trade	0.7483	0.1104	0.2200	1.0787	1.1476	1.4416
	FIRE	0.7437	0.0955	0.0889	0.9282	1.1284	1.2480
	Services	0.6280	0.1568	0.2795	1.0642	1.2496	1.6947
	Government	0.8992	0.0471	0.3390	1.2853	1.0524	1.4294
	Other	1.0000	0.0000	0.3852	1.3852	1.0000	1.3852
<b>Employment</b>	Ag, Fishing,						
	Forestry	26.6259	8.7002	6.3149	41.6410	1.3268	1.5639
	Mining	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Construction	10.9193	9.0022	6.4296	26.3512	1.8244	2.4133
	Manufacturing	7.7028	9.6914	5.6274	23.0217	2.2582	2.9887
	TCPU	8.5759	5.0486	6.0044	19.6289	1.5887	2.2888
	Trade	30.4630	2.9925	6.3104	39.7658	1.0982	1.3054
	FIRE	6.5095	2.1206	2.5828	11.2129	1.3258	1.7225
	Services	21.0478	4.1782	8.0149	33.2409	1.1985	1.5793
	Government	31.8780	1.2167	9.6353	42.7301	1.0382	1.3404
	Other	150.7824	0.0000	10.8756	161.6580	1.0000	1.0721
<b>Output</b>	Ag, Fishing,						
	Forestry	1.0000	0.5316	0.4053	1.9369	1.5316	1.9369
	Mining	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Construction	1.0000	0.7279	0.4074	2.1353	1.7279	2.1353
	Manufacturing	1.0000	0.7949	0.3468	2.1417	1.7949	2.1417
	TCPU	1.0000	0.4169	0.3606	1.7775	1.4169	1.7775
	Trade	1.0000	0.2196	0.4018	1.6214	1.2196	1.6214
	FIRE	1.0000	0.1732	0.1589	1.3321	1.1732	1.3321
	Services	1.0000	0.3080	0.5083	1.8163	1.3080	1.8163
	Government	1.0000	0.1057	0.6249	1.7306	1.1057	1.7306
	Other	1.0000	0.0000	0.7131	1.7131	1.0000	1.7131

\*Total = direct + indirect + induced, \*\* Type I = direct + indirect, \*\*\* Type SAM = Type I + induced

Table 23. Final Demand Multipliers; Forestry Sector; Sumter Co., AL; 1998

Effects / Industry		Direct	Indirect	Induced	Total*	Type I**	SAM***
<b>Value Added</b>	All Others	0.6181	0.1740	0.4422	1.2343	1.2815	1.9968
	Ag, Forestry, Fishing	0.3741	0.2851	0.3886	1.0477	1.7620	2.8006
	Pulp & Paper	0.2283	0.3906	0.3550	0.9739	2.7113	4.2668
	Wood Furniture	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Wood Products	0.4056	0.3011	0.3846	1.0914	1.7424	2.6906
<b>Employment</b>	All Others	0.3876	5.4758	0.8607	8.7242	1.2824	1.9974
	Ag, Forestry, Fishing	0.5985	9.6740	0.1806	9.4531	1.1104	1.2495
	Pulp & Paper	0.8706	1.5528	0.1295	8.5528	2.9679	4.8637
	Wood Furniture	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Wood Products	0.2039	8.2493	0.0565	8.5097	2.0055	3.4751
<b>Output</b>	All Others	1.0000	0.2924	0.7283	2.0207	1.2924	2.0207
	Ag, Forestry, Fishing	1.0000	0.4823	0.6400	2.1223	1.4823	2.1223
	Pulp & Paper	1.0000	0.8638	0.5848	2.4486	1.8638	2.4486
	Wood Furniture	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	Wood Products	1.0000	0.5850	0.6336	2.2186	1.5850	2.2186

\*Total = direct + indirect + induced, \*\* Type I = direct + indirect, \*\*\* Type SAM = Type I + induced

Table 24. Impact Estimates; 50 New Manufacturing Jobs; Type SAM Multipliers; Sumter Co., AL; 2002 (Deflated)

Total Impact / Industry	Value Added	Employment	Output
Ag, Fishing, Forestry	\$88,490	4	\$162,490
Mining	\$0	0	\$0
Construction	\$150,293	5	\$419,022
Manufacturing	\$783,659	19	\$2,431,108
TCPU	\$466,545	8	\$903,897
Trade	\$678,480	28	\$906,738
FIRE	\$505,965	4	\$680,312
Services	\$824,398	28	\$1,312,794
Government	\$1,197,746	43	\$1,332,087
Other	\$33,700	5	\$33,700
Foreign Trade	\$0	0	\$0
Domestic Trade	\$0	0	\$0
<b>Total</b>	<b>\$4,729,277</b>	<b>323.6</b>	<b>\$8,182,147</b>

## **Input-Output Analysis Summary**

The input-output analysis of Sumter County has revealed the continued dependence of county economic health on its natural resources. The forestry sector is the major contributor to the county economy through related manufacturing production in pulp and paper and wood products. Wood products exceeds pulp and paper in level of exports, but between the two, pulp and paper contributes more to the county by way of employment and income, which is a result of its more extensive linkages within forestry and other sectors of the local economy. However, the ability of either to contribute further to the wealth of Sumter County is questionable.

Potential growth in local and domestic markets for pulp and paper and wood products appears to be limited as the markets are already saturated. Yet, due to structural limitations in the model, it was not possible to estimate market potential as it pertains to foreign markets. Information uncovered in the economic background and trend analysis suggest that lucrative markets exist for those products, particularly in the Asian arena, but the extent of that opportunity cannot be determined based on the current analysis. In addition, wood furniture shows the greatest potential for expansion into value added manufacturing, but the possibility to diversify into that area is dependent on many factors, including the characteristics and sustainability of the forest stock.

Other potential factors of growth that surfaced in the analysis are in the FIRE, services, and trade industries. All have excess demand in comparison to both local and domestic supply and each is currently a source of leakage from the local economy, particularly FIRE. Therefore, there appears to be a number of viable alternatives in which to diversify, either by industry sector or range of product within those sectors.

## **Conclusion**

This analysis paints neither a bleak nor bright picture of the future of Sumter County's economic base. In order for the forestry industry to act as a factor of growth in the local economy it is important that it diversifies within, both across sector (extent of activities) and across product (commodity groupings). This requires healthy harvesting, processing, and distribution functions. In that respect, Sumter County has an advantage over the majority of other rural, resource based economies in the United States. Its harvesting and processing sectors

remain intact and for the most part healthy (*see* Appendix).<sup>54</sup> In addition, the seeds for growth in distribution have been planted via the Tennessee-Tombigbee waterway and existing linkages to foreign markets.

## References

- Alley, K., C. Faupel, and C. Bailey. 1995. The Historical Transformation of a Grassroots Environmental Group. *Human Organization*. Vol.54/No.4
- Alward, G., E. Siverts, D. Olson, J. Wagner, D. Senf, and S. Lindall. 1989. *Micro-IMPLAN*. Fort Collins, CO: USDA Forest Service.
- Bullard, R. 1990. *Dumping in Dixie: Race, Class, and Environmental Quality*. Boulder: Westview.
- Cray, C. 1991. *Waste Management, Inc.: An Encyclopedia of Environmental Crimes and Other Misdeeds*. Greenpeace Report.
- Deputy, D. and D. Hopkins. February 1999. *Economic Impact of the Wilmington Blue Rocks Baseball Team*. Delaware Economic Development Office, Business Research Section..
- Economic Research Service (ERS), US. Department of Agriculture. *Understanding Rural America*. <<http://ww.ers.usda.gov>> Accessed June, 2001.
- Ingersoll, B. and A. Pasztor. May 16, 1984. Waste Management Inc. Failed to Dispose of DDT, Though it Certified Move to US. *Wall Street Journal*.
- Miller, R. and P. Blair. 1985. *Input-Output Analysis: Foundations and Extensions*. Englewood Cliffs, NJ: Prentice Hall.
- Minnesota IMPLAN Group (MIG). 2000. *IMPLAN Pro Version 2 User's Guide, Analysis Guide, and Data Guide*. Stillwater MN: Minnesota IMPLAN Group, Inc.
- Reeves, J. April 10, 2000. Attack on Landfill Kills Alabama Town Taxes, Federal Laws, Not Hazardous Waste, Doom Emelle. *The Detroit News*.
- Stott, N. 1986. Our Throwaway World: How Affluence Causes Effluence. *The New Internationalist*. Issue 157/March

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<sup>54</sup> As shown in the appendix, logging, sawmills, paper mills, and other forestry related functions exist within the sectors of Sumter County's economy.

Thornton, J. 1978. *Politics and Power in a Slave Society: Alabama, 1800-1860*. Louisiana State University Press.

Torres, M. 1999. Great Expectations: Changing Times Puncture Waterway Boosters' Promises. *Tombigbee Country*. University of Alabama Department of Journalism/Mobile Register. <<http://www.ccom.ua.edu/Tombigbee>>

## **Data Sources**

Alabama Agricultural Statistical Service. <<http://www.aces.edu/dept/nass>>

Alabama State Data Center, Center for Business and Economic Research. <<http://cber.cba.ua.edu/asdc.html>>

Bureau of Labor Statistics, Local Area Unemployment Statistics. <<http://stats.bls.gov/lauhome.htm>>

Minnesota IMPLAN Group, Inc. <<http://www.implan.com/>>

United States Department of Commerce, Bureau of Economic Analysis. <<http://www.bea.doc.gov/>>

United States Department of Commerce, Bureau of the Census. <<http://www.census.gov/>>

## Appendix

Table A-1. Sumter County Industry Sectors

Code	Industry	Industry Output*	Employment	Total Value Added*
2	Poultry and Eggs	2.319	14	0.908
3	Ranch Fed Cattle	6.357	137	3.028
4	Range Fed Cattle	0.986	23	0.498
5	Cattle Feedlots	0.251	2	0.099
9	Miscellaneous Livestock	3.89	182	2.119
12	Feed Grains	0.27	5	0.172
13	Hay and Pasture	1.421	82	1.087
14	Grass Seeds	0.06	6	0.047
17	Tree Nuts	0.014	1	0.009
18	Vegetables	0.07	1	0.052
21	Oil Bearing Crops	0.372	10	0.319
22	Forest Products	3.535	58	2.364
24	Forestry Products	0.81	4	0.387
25	Commercial Fishing	0.128	4	0.116
26	Agricultural, Forestry, Fishery Services	0.299	26	0.112
48	New Residential Structures	5.347	43	1.076
49	New Industrial and Commercial Buildings	5.259	47	1.7
50	New Utility Structures	0.905	10	0.357
51	New Highways and Streets	0.961	10	0.356
53	New Mineral Extraction Facilities	0.313	7	0.132
54	New Government Facilities	2.301	16	0.825
55	Maintenance and Repair, Residential	1.266	17	0.488
56	Maintenance and Repair Other Facilities	3.815	70	2.299
60	Poultry Processing	0.402	3	0.088
124	Apparel Made From Purchased Materials	15.213	190	3.132
133	Logging Camps and Logging Contractors	16.686	85	7.228
134	Sawmills and Planing Mills, General	12.907	84	2.946
139	Veneer and Plywood	1.642	12	0.598
147	Wood Products, N.E.C	26.239	291	12.543
162	Paper Mills, Except Building Paper	0.441	2	0.127
164	Paperboard Containers and Boxes	41.846	232	8.865
173	Converted Paper Products, N.E.C	15.379	105	4.17
174	Newspapers	2.717	39	1.211
179	Commercial Printing	1.325	14	0.427
244	Ready-mixed Concrete	4.998	35	1.516
250	Minerals, Ground Or Treated	11.59	75	5.932
354	Industrial Machines N.E.C.	0.158	2	0.067
433	Railroads and Related Services	2.107	11	1.297
434	Local, Interurban Passenger Transit	0.104	3	0.061
435	Motor Freight Transport and Warehousing	26.773	267	10.963
441	Communications, Except Radio and TV	1.208	5	0.78
442	Radio and TV Broadcasting	0.431	4	0.147
443	Electric Services	2.724	6	2.234
445	Water Supply and Sewerage Systems	0.189	1	0.123
446	Sanitary Services and Steam Supply	11.148	86	7.458
447	Wholesale Trade	9.811	162	6.693
448	Building Materials & Gardening	0.131	5	0.115

Table A-2. Sumter County Industry Sectors

Code	Industry	Industry Output*	Employment	Total Value Added*
449	General Merchandise Stores	2.966	116	2.387
450	Food Stores	4.718	198	4.42
451	Automotive Dealers & Service Stations	5.734	194	4.966
452	Apparel & Accessory Stores	1.53	45	1.136
453	Furniture & Home Furnishings Stores	0.318	12	0.273
454	Eating & Drinking	6.185	214	3.036
455	Miscellaneous Retail	4.873	160	4.111
456	Banking	8.317	86	6.204
457	Credit Agencies	0.132	4	0.115
459	Insurance Carriers	0.539	4	0.313
460	Insurance Agents and Brokers	1.158	26	0.9
461	Owner-occupied Dwellings	10.533	0	8.064
462	Real Estate	5.129	47	3.598
463	Hotels and Lodging Places	0.966	33	0.593
464	Laundry, Cleaning and Shoe Repair	0.558	40	0.419
466	Beauty and Barber Shops	0.103	7	0.061
467	Funeral Service and Crematories	0.473	17	0.326
468	Miscellaneous Personal Services	0.316	6	0.066
470	Other Business Services	0.314	4	0.187
473	Equipment Rental and Leasing	2.026	20	1.25
475	Computer and Data Processing Services	2.396	21	1.684
476	Detective and Protective Services	0.657	18	0.49
478	Automobile Parking and Car Wash	0.092	4	0.069
479	Automobile Repair and Services	1.17	21	0.58
482	Miscellaneous Repair Shops	0.316	7	0.104
483	Motion Pictures	0.233	4	0.044
489	Membership Sports and Recreation Clubs	0.399	23	0.143
490	Doctors and Dentists	3.462	61	1.963
491	Nursing and Protective Care	10.039	300	7.357
493	Other Medical and Health Services	1.683	48	0.706
494	Legal Services	2.214	20	1.738
495	Elementary and Secondary Schools	1.695	77	0.745
499	Child Day Care Services	1.398	36	0.642
500	Social Services, N.E.C.	1.803	37	0.873
502	Other Nonprofit Organizations	4.302	34	3.707
507	Accounting, Auditing and Bookkeeping	1.518	55	1.368
508	Management and Consulting Services	14.424	212	7.888
512	Other State and Local Govt Enterprises	5.667	40	1.893
513	U.S. Postal Service	1.963	34	1.28
519	Federal Government - Military	2.623	99	2.623
520	Federal Government - Non-Military	0.738	13	0.738
522	State & Local Government - Education	26.078	911	26.078
523	State & Local Government - Non-Education	7.131	312	7.131
525	Domestic Services	1.23	188	1.23
528	Inventory Valuation Adjustment	0.016	0	0.016
	Totals	397.252	6,300	210.787

\*Millions of Dollars

