Economic and Fiscal Impacts of an Increase in Consumer Spending on Baldwin and Mobile Counties and the State of Alabama

by

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Content

Executive Summary

- This report presents the economic and fiscal impacts of a $1,000,000 increase in consumer spending in the retail sector in Baldwin and Mobile counties by the participants of the Strengthen Alabama Homes program as a result of a reduction in home insurance premiums. It is assumed that the lowering of insurance premiums will result in an increase in consumer spending. The increase in spending will impact the following sectors: motor vehicle and parts dealers; food and beverage stores; general merchandise stores; and other retail. The economic impacts focus on output, value-added, earnings and employment. Output refers to total or gross business sales and contains value-added, which is contribution to gross domestic product (GDP) or the value of goods and services produced on a value-added basis. Earnings impacts are part of the value-added and are the wages and salaries of the workers recognized by the employment impact. The fiscal impacts are conservative because they are derived from the earning impacts and the total spending with just income and sales taxes considered; other taxes and fees (e.g., utility taxes, car tags and fees, rental/leasing, cigarettes and tobacco, insurance premiums, driver's license, auto title, and other personal property, etc.) are not considered.

- The overall economic impact of increase in retail spending on the economy of Baldwin county is $1.5 million in output, which includes a $1.0 million value-added to the county's GDP of which nearly $0.5 million is earnings for 17 direct and indirect jobs (12 direct paying $26,101 and 5 indirect paying $28,728). The earnings impact will generate $12,327 in county and local sales taxes.

- The economic impacts on Mobile county's economy are nearly $1.6 million in output, which includes a $1.0 million contribution to county's GDP and nearly $0.5 million in earnings to households from 17 jobs (12 direct jobs paying $26,247 and 5 indirect paying $30,692). The earnings impact will generate $12,327 in county and local sales taxes.

- The total economic impacts of the total expenditure on the Alabama economy are $1.8 million in economic activity or output, which includes over $1.1 million contribution to state's GDP and $0.6 million in earnings to Alabama households from 21 direct and indirect jobs (14 direct paying $26,121 and 7 indirect paying $34,283). The earnings impacts will generate $28,131 in tax revenues, of which $19,913 will be in individual income taxes and $8,218 in county and local sales taxes.

- The results in this report demonstrate that the Strengthen Alabama Homes program will have a positive impact on the retailers in the area as program participants will use their savings from the program to increase their purchases, which indirectly will create new jobs both in Baldwin and Mobile counties and the state, and add value to the current GDP.

Introduction

In 2011, the Alabama State Legislature enacted the Strengthen Alabama Homes (SAH) program mandating insurance agencies that operate in the state to offer discounts for coastal houses and manufactured houses that are built, rebuilt or retrofitted in accordance with FORTIFIED standards (Please refer to the FORTIFIED Homes report for more information on the program). In this report we assume that as a direct result of participating in the SAH program, homeowners in the Baldwin and Mobile counties will have saved $1,000,000 collectively and spent that same amount of money in various local retail stores, including food and beverages, general merchandise, motor vehicle and parts dealers and other retailers (referred to herein as "Retail Spending").

The economic impacts presented in this report focus on output, value-added, earnings, and employment. Output refers to total or gross business sales and contains value-added (the contribution to GDP or the value of goods and services produced on a value-added basis within a specific region or state), which in turn contains earnings impacts (the wages and salaries of the workers recognized by the employment impact). The fiscal impacts focus on just sales and income taxes but are conservative because other taxes and fees (e.g., utility taxes, car tags and fees, rental/leasing, cigarettes and tobacco, insurance premiums, driver's license, auto title, and other personal property, etc.) are not considered.

Economic and Fiscal Impacts

Four main types of multipliers—output, value-added, income or earnings, and employment—are used to conduct the analysis. Output multipliers represent the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand (final consumption) by the industry of the economic entity under study. Value-added multipliers are similarly defined except that they represent the total dollar change in value-added across all industries. Earnings multipliers represent the total dollar change in earnings of households employed by all industries for each additional dollar of payroll expenditure (or each dollar of output delivered to final demand) by the industry whose economic impact is being estimated. Employment multipliers represent the total change in the number of jobs in all industries for each direct job (or for each million dollars of output delivered to final demand) by the industry considered.

To determine the total economic and fiscal impacts, two types of economic impacts are estimated. The first type, household impacts, derives from the way the spending behavior of workers affects households (i.e., jobs and earnings). The second type, expenditure impacts, focuses on broad economy-wide impacts that take all expenditures into consideration—gross business sales and contribution to GDP or value-added. Multipliers from the Regional Input-Output Modeling System (RIMS II), developed and maintained by the U.S. Department of Commerce's Bureau of Economic

Analysis are used. The impact model developed for the analysis combines relevant BEA RIMS II multipliers with economic structures and fiscal impact components that are specific to Baldwin and Mobile counties and the State of Alabama.

The overall economic impact of Retail Spending on the economy of Baldwin County is over $1.5 million in output, which includes a $1.0 million value-added to the county's GDP of which nearly $0.5 million is earnings for 17 direct and indirect jobs. The direct retail jobs will pay an average of $26,101, and the indirect jobs will pay an average of $28,728. The earnings impact will generate $12,327 in county and local sales taxes (see Table 1). The economic impacts of an increase in retail spending on Mobile county's economy are nearly $1.6 million in output, which includes over $1.0 million contribution to county's GDP and nearly $0.5 million in earnings to households from 17 jobs. The direct retail jobs will pay an average of $26,247, and the indirect jobs will pay an average of $30,692. The earnings impact will generate $12,327 in county and local sales taxes.

The total economic impacts of an increase in retail spending on the Alabama economy are nearly $1.8 million in economic activity or output, which includes over $1.1 million contribution to state's GDP and $0.6 million in earnings to Alabama households from 21 direct and indirect jobs. The direct construction jobs will pay an average of $26,121, and the indirect jobs will pay an average of $34,283. The earnings impacts will generate $28,131 in tax receipts to the state, of which $19,913 will be in individual income taxes and $8,218 in sales taxes.

Table 1. Economic and Fiscal Impacts of Retail Sales

	Baldwin	Mobile	Alabama
Input Data			
Total expenditures	$1,000,000	$1,000,000	$1,000,000
Economic Impacts (Direct and Indirect)			
Total employment	17	17	21
Direct employment	12	12	14
Indirect employment	5	5	7
Output (Gross Business Sales)	$1,549,025	$1,569,925	$1,794,250
Value-added (Contribution to GDP)	$1,021,000	$1,026,200	$1,137,225
Earnings (total wages and salaries)	$456,850	$468,425	$605,675
Earnings (direct wages and salaries)	$313,211	$314,966	$365,696
Earnings (indirect wages and salaries)	$143,639	$153,459	$239,979
Direct jobs average earning	$26,101	$26,247	$26,121
Indirect jobs average earning	$28,728	$30,692	$34,283
Fiscal Impacts (Direct and Indirect)			
Individual income tax			$19,913
County and local sales tax	$12,327	$12,327	$8,218

Source: U.S Department of Commerce, Bureau of Economic Analysis; Alabama Department of Revenue and Center for Business and Economic Research, The University of Alabama.

Conclusions

This report clearly indicates that an increase in retail spending will have a positive impact on both Baldwin and Mobile counties, as well as on the State of Alabama. Baldwin county impacts will be $1.5 million in output, which includes $1.0 million in value-added of which nearly $0.5 million is earnings for 17 direct and indirect jobs, and $12,327 is county and local sales taxes. Mobile county impacts will be $1.6 million in output, which includes over $1.0 million in value-added of which $0.5 million is earnings for 17 direct and indirect jobs, and $12,327 is county and local taxes. Economic impacts on overall Alabama economy will be $1.8 million in output, which includes $1.1 million in value-added of which $0.6 million is earnings for 21 direct and indirect jobs, and $28,131 is state taxes comprising $19,913 in income tax and $8,218 in sales tax.

APPENDIX A

Methodology – Model

The economic and fiscal impacts presented in this reports are determined using a model that combines specific economic structure and fiscal components for Baldwin and Mobile counties and Alabama with multipliers from the Regional Input-Output Modeling System (RIMS II), and input-output model developed and maintained by the U.S. Department of Commerce's Bureau of Economic Analysis (BEA). The economic impacts focus on output, value-added, earnings and employment. Output refers to total or gross business sales and contains value-added, which is contribution to GDP or the value of goods and services produced on a value-added basis. Earnings impacts are part of the value-added and are the wages and salaries of the workers recognized by the employment impact.

The four main types of multipliers—output, value-added, income or earnings, and employment—are used to conduct the analysis. Output multipliers represent the total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand (final consumption) by the industry of the economic entity under study. Value-added multipliers are similarly defined except that they represent the total dollar change in value-added across all industries. Earnings multipliers represent the total dollar change in earnings of households employed by all industries for each additional dollar of payroll expenditure (or each dollar of output delivered to final demand) by the industry whose economic impact is being estimated. Employment multipliers represent the total change in the number of jobs in all industries for each direct job (or for each million dollars of output delivered to final demand) by the industry whose economic impact is being estimated. As RIMS II multipliers for the retail industry are currently not available, for this study the average of four retailing subcategories (motor vehicle and parts dealers; food and beverage stores; general merchandise stores; and other retail) were used to estimate the economic and fiscal impacts. The multipliers used in the analysis are below.

		Final Demand			Direct Effect		
Area	Industry	Output	Earnings	Employ-ment	Value-added	Earnings	Employ-ment
	Motor vehicle and parts dealers	1.5071	0.4992	13.1978	1.0891	1.3629	1.5736
	Food and beverage stores	1.5832	0.4716	19.4047	1.0283	1.4648	1.3783
	General merchandise stores	1.5283	0.4157	18.0969	0.9692	1.5021	1.3621
	Other retail	1.5775	0.4409	17.9778	0.9974	1.5046	1.4227
Baldwin	**Average**	**1.5490**	**0.4569**	**17.1693**	**1.0210**	**1.4586**	**1.4342**
	Motor vehicle and parts dealers	1.5178	0.5078	13.0185	1.0891	1.3777	1.5425
	Food and beverage stores	1.6023	0.4827	19.3058	1.0325	1.4898	1.3627
	General merchandise stores	1.5642	0.4309	18.1684	0.9832	1.5475	1.3589
	Other retail	1.5954	0.4523	17.8352	1.0000	1.5339	1.4026
Mobile	**Average**	**1.5699**	**0.4684**	**17.0820**	**1.0262**	**1.4872**	**1.4167**
	Motor vehicle and parts dealers	1.7480	0.6509	16.6777	1.2012	1.5198	1.7007
	Food and beverage stores	1.8354	0.6232	23.9929	1.1452	1.6555	1.4575
	General merchandise stores	1.7875	0.5655	22.7160	1.0978	1.7478	1.4623
	Other retail	1.8061	0.5831	22.1539	1.1047	1.7018	1.4994
Alabama	**Average**	**1.7943**	**0.6057**	**21.3851**	**1.1372**	**1.6562**	**1.5300**

Note: Final demand employment multipliers reflect jobs per million dollars of expenditure.
Source: U.S. Bureau of Economic Analysis.

Fiscal impacts are derived from the earning impact and cover workers' income and sales taxes only. These impacts are conservative for this reason and also because several other taxes and fees (e.g., utility taxes, car tags and fees, rental/leasing, cigarettes and tobacco, insurance premiums, driver's license, auto title, and other personal property, etc.) are not considered. It is important to note that not all of the earnings impacts are sales or income taxable.

Spending on sales taxable items constitute 42.4 percent of total earnings based on U.S. Bureau of Labor Statistics (BLS) data. State taxable income (net income) is about 65.8 percent of earnings and the applicable tax rate is 5.0 percent. Sales taxes used are 6.0 percent for both Baldwin and Mobile counties (combined county and city), and 4.0 percent for the state.

APPENDIX B

Methodology - Economic Impact Analysis

Economic impact analysis measures the effects of a specific economic activity or event on a specified geographic area. Examples include the economic impact on a state or county of a proposed industrial plant, an existing industry, closing a military installation, or expansion of an existing industrial facility. In some cases, federal laws, as well as state and local regulations, require economic impact studies prior to the implementation of a particular policy (relocation of an economic activity, change in tax policy, changes in zoning ordinance, etc.). Impact studies are designed to provide information for instituting policies to facilitate positive economic impacts and/or mitigate potential negative impacts. Economic impact analysis is therefore an important decision making tool in both public and private sectors. The analysis typically focuses on one or more of the major economic indicators: output, value-added, employment, and income. The purpose of an impact study usually determines which socioeconomic variable(s) should be monitored. In this study, the focus is on all four major indicators and the consequent changes in income and sales revenues.

Economic impacts comprise direct and indirect impacts. Direct impacts include the wages and salaries of the employees who work directly for an economic entity (e.g., firm, industry, or institution) as well as all other expenditures of the entity, including any taxes and distributed profits. Indirect economic impacts, often referred to as the "ripple" or "multiplier" effects, occur because of additional demand arising from new income and expenditures for inputs (products and services) related to the economic entity of focus. New income creates demand for consumer products and services and their associated indirect impacts are often called induced impacts. Indirect and induced impacts may spark demand for the output of the entity under study. For example, expenditures made by workers create impacts on vendors and also on consumer products and services industries. These industries and their workers in turn make purchases from other vendors in the area, and so forth. In this interconnected manner, businesses increase their production of goods and services to meet the direct and indirect demands created by workers. All of this results in development of the economy at state, metro, county and city levels. The total economic impacts capture all the direct, indirect, and induced effects. The ratio of the total economic impact to the direct effect is the multiplier that can be used to summarize the economic effects of the organization on the region or area of focus.

Economic relationships do not obey strict geographic boundaries as spending by industries and their workers flow across such boundaries enabled by transportation and communication. Thus a portion of the indirect effects of purchases or expenditures may occur beyond the boundaries of the specified region. Such occurrences are called *leakages* and are more likely for small geographic areas while *linkages* (supplier-purchaser relationships) are more likely for large areas. Generally, small geographic areas will have small *absolute* economic impact due to a high likelihood of leakage. A large region will have a bigger absolute economic impact, but a smaller *relative* economic impact.

The closure of one plant within a state, for example, may have only a small relative impact even if the plant employs thousands of workers; the absolute impact could be large. The important point is that the effect or size of the economic impact is influenced by the size of the study area. If the area is too broadly defined, the relative impact will be small. If narrowly defined, the relative impact will be large.

Determining the Multiplier

Several methodological approaches are used in estimating economic impacts. These include the construction of econometric, economic base, computable general equilibrium (CGE), and input-output (I-O) models. Econometric and CGE models can be very costly and time-consuming to build. Economic base models require a very detailed set of information that is sometimes not available. The other methodological approaches generate slightly smaller multipliers than I-O models because of assumptions on factors such as input substitution and optimization behavior by economic agents. The I-O modeling framework is used in this study. The technique generates multipliers for the economic activity of interest by focusing on economic interactions among all industries and all other economic transactions in the specified region. Interindustry relationships exist in backward (suppliers and other upstream linkages and leakages) and forward (distributors, retailers, customers, and other downstream linkages and leakages) directions. The number and strength of these backward and forward linkages and leakages determines the multiplier effects of the industry. In general, products and services that require a small number of inputs and little additional processing (little value addition) will have smaller multiplier effects than complex products that require lots of inputs and extensive processing.

The nature of the product and technology largely determine the degree of interindustry linkages and leakages, and the specific impact on a region depends upon the degree to which these interindustry relationships are localized. Technology determines inputs and economics determines the geographic source of supply and destination of products or services. Leakage involves purchases outside the economic impact study area and represents activities of local firms that have no economic impact on the local economy. Identifying leakage can provide valuable planning information to local economic development authorities for commercial or industrial development that provides opportunities for "localizing" such impact. An activity's maximum impact on a specific area is obtained when all interindustry linkages occur within the area. An economy-wide view is required for impact estimation and the I-O technique permits the incorporation of such a perspective.

To estimate the economic impacts, linkages between the activity of interest and all related suppliers and customers must be traced. This task is greatly facilitated by the BEA's RIMS II, which provides multipliers for every state, region, county, and metropolitan area in the nation. The RIMS II I-O model contains data on each industry that reflects the value of inputs used in the production of that industry's output in tabular form. Since the rows (outputs) are produced by specific industries, they are also columns (inputs). Demand for a particular input causes supply from its source industry

which in turn creates demand for the materials that are used to produce the particular input, and so on. The round-by-round effects decrease and converge; I-O methodology captures the total effect of the rounds of spending with the multiplier. RIMS II multipliers for an economy account for all linkages in and leakages from that economy

Multipliers are determined mathematically from I-O tables that are constructed from observed and reported data for the economic area of interest. The economy is divided into a number of producing industries or sectors that sell and purchase goods and services to and from each other with *interindustry* or *intersectoral* flows or transactions that are key data. Sector goods and services are purchased by domestic consumers (households), international customers (exports), government (federal, state, and local), and for private investment purposes. These external to production purchases are for direct use and termed *final demand*. For an economy with n sectors, if X_i represents total output for sector i, Y_i represents final demand for sector i products, and z_{ij} represent interindustry flows, then

$$X_i = \sum_{j=1}^{n} z_{ij} + Y_i \qquad (1)$$

If a_{ij} represents the I-O technical coefficients where $a_{ij} = z_{ij} / X_j$ so that sectors use inputs in fixed proportions (the constant returns to scale Leontief production function) then equation (1) becomes

$$X_i = \sum_{i=1}^{n} a_{ij} X_i + Y_i \qquad (2)$$

The standard formulation of the basic I-O model and its application, in matrix notation is:

Transactions balance: $X = AX + Y$ (3)

Solving for X: $X = (I - A)^{-1}Y$ (4)

For a change in Y: $\Delta X = (I - A)^{-1}\Delta Y$ (5)

where X is the gross output column vector, A is the matrix of fixed I-O coefficients, Y is the final demand column vector, and I is the identity matrix. This model enables determination of the output given changes in final demand levels (consumption, investment, government, or exports). The Leontief inverse, $(I - A)^{-1}$, provides the I-O multipliers used to determine impacts. The elements of the matrix are really very useful and important. Each captures in a single number, an entire series of direct and indirect effects. Gross output requirements are translatable into employment coefficients in a diagonal matrix that is used together with the Leontief inverse to generate employment impacts. Similar manipulations generate value-added, income, or earnings multipliers.