

**The Economic Impact of the Birmingham-Southern College
On Alabama and Jefferson County Economy**

Prepared for: Birmingham-Southern College

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Executive Summary

Economic Impact

- The purpose of this report is to present the economic impacts of Birmingham-Southern College (BSC) on the Alabama and Jefferson County economy.
- For conducting this study, we obtained the required financial information—payroll, purchasing, and enrollment—from BSC.
- Using data from the most recent fiscal year -- 2022 -- this report estimated the impacts for the following three categories of BSC expenditures:
 - spending for salaries of faculty and staff (salaries & wages)
 - spending on operating supplies, expenses, and other budgeted projects (goods and services and construction); and
 - spending by the students who attend the institutions.
- According to our estimate, in FY '22, a total of \$52.9 millions of direct spending can be attributable to BSC.
- From this total spending 41% is employees' salaries, 36% is BSC purchase of goods and services, and 23% is the student expenditures.
- Consistent with the standard practice, we assumed that 90, 80, and 90 percent of the employees, BSC, and students' expenditures are spent in Alabama. In other words, we assumed that approximately \$7.2 million, or 13.5% of the expenditures, leaks out of the Alabama economy. This yields a direct spending of \$45.7 million in the state.
- Next, to compute the economic impact of the BSC, estimates of direct spending were subjected to multiplier analysis for the state and Jefferson County.
- In summary, the economic impact of the BSC, for FY 2022, on the Alabama and Jefferson Country's economy can be summarized as follows:
 - Total economic impact – State \$97.2 million, Jefferson County \$70.5 million.
 - Total employment impact – State 1,481, Jefferson County 1,057
 - Total Income Impact – State \$51.9 million, Jefferson County \$41 million.

Human Capital

- While the economic impact of BSC is considerable, the value-added benefits of BSC are not confined in the economic impact tabulations. The intellectual contribution and social impacts of BSC are also significant and long-lasting.
- According to BSC records, the institution can identify a total of 16,864 living, addressable graduates.
- Approximately 56% or 9,516 are currently residing in Alabama.
- From this total, 6,818 graduates are still part of the skilled workforce in the state and are enjoying higher economic earnings due to their human capital investment.
- It is our estimate that the 6,818 BSC graduates, who currently are actively working, are responsible for a value-added social benefit of approximately \$211.5 million in 2022. That is their annual contribution to the state's economy.
- As for Jefferson County, our estimate is closer to \$157.1 million for FY 22.

Fiscal Impact

- Fiscal impact of BSC (its contribution to the state and local tax coffers) can be summarized as follows:

FY '22

- State Taxes: \$6.8 Million
 - Education Trust Fund: \$4.9 million
 - General Fund: \$1.9 million
- Local Taxes: \$7.0 million
- These estimates do not include taxes realized from the income of the BSC graduates.

Introduction

The purpose of this report is to present the economic impacts of Birmingham-Southern College (BSC) on the Alabama and Jefferson County economy. The concept of economic impact can be explained in the following manner. The impact of BSC on the Alabama economy is greater than the total BSC's spending on salaries and wages, goods and services, and construction. This is because money spent by the BSC will be spent again by the employees and local businesses that receive it. Employees use their salaries and wages to purchase from local businesses. Local businesses make their own purchases and hire employees, who spend their salaries and wages in the local economy. In other words, every dollar spent by BSC cycles through the economy several times, and in the process, it generates additional income and jobs in the Alabama economy.

For conducting this study, we obtained the required financial information—BSC's payroll, purchasing, and enrollment—from BSC. In addition, we reviewed the economic impact reports of a selective number of other universities to ensure that the multipliers used here are in line with the range of the multipliers used in similar reports.

Notes about Impact (Analysis) Model

Economic Impact models are the best tools available for estimating the economic effects of one or more specific economic activities on a local, regional, or other geographically defined economy.

The most challenging task in conducting the impact analysis is determining the appropriate expenditures to include in the analysis. This is particularly important because the quality of an economic impact analysis is only as good as the data used.

The following observations should be noted about the model that has been used for conducting the analysis in this study.

- The Input-Output model used for this study deals with readily available quantifiable impacts such as dollars of spending or employment. The model does not consider social costs or benefits of economic activities.
- The model used is a static model that does not take into effect changes over time in a dynamic economy. This suggests that the relationships between economic sectors are fixed as of the date of the model's underlying database and do not account for adjustments that may take place over time.
- The model assumes that the relationship between changes in demand for products and services and the resulting changes in income and employment are linear. That is, it does not consider the changes in productivity over time.
- The model assumes that response to any incremental changes in demand for goods and services are at the average rather than the marginal rate.
- Finally, the model does not take into consideration the additional capital expenditures required to support indirect and induced effects on the local economy.

Methodology

The methodology employed to estimate the impact of Birmingham-Southern College (BSC) on the State and Jefferson County economy is derived from regional economic models. The basic premise is that spending by and attributable to BSC stimulates various sectors in the Alabama economy as the transaction activities by BSC increases the demand for goods and services in the state and county. In turn, the affected sectors increase their demand from their suppliers throughout the state to respond to the demand for their output by BSC.

Classifying the impacts into three broad categories facilitates an understanding of how an initial change in the demand for goods and services in the state and local economy by the BSC is multiplied into additional impacts.

The three categories of impact are as follows:

Direct: The **direct impacts** of the BSC are the additional demand and expenditures in the Alabama economy that are directly attributable to the BSC operation. These expenditures are spent by the BSC employees, by the BSC on O&M, computers, and other capital expenditures, and by the BSC's students in the local economy.

Indirect: To the extent that **direct impacts** of the BSC reverberates throughout the economy and result in further increases in business transactions, there are indirect impacts. An indirect impact, for example, results when a business needs additional resources to service the increased demand from the BSC or its students. The suppliers of these items find their sales increasing and in turn need more input to meet the new demand.

Induced: Additional indirect effects are induced by the change in income in the economy. For example, when a business hires an additional worker to meet the demand caused by the BSC, the worker's spending further enhances economic activity in the region.

This process continues, yielding a multiplied effect on the output of the Alabama economy. Whenever the extra demands are met by industries outside the local economy, there are **leakages** from the flow of products and income from the local economy. **The greater the number of leakages, the lower the indirect impacts and the lower the multiplier.** On the other hand, the more diversified the local economy the higher the value of multipliers.

A crucial element in conducting an economic impact analysis center on determining the multipliers for the project under consideration. The term multiplier refers to the ratio of all direct, indirect, and induced effects to the direct effects. The multiplier represents the number of times each dollar spent by the BSC (and its employees and students) cycles through the economy, generating additional income and jobs.

For estimating the economic impact of this project, economic, demographic, and other market information were gathered from:

The U.S. Department of Labor
 The U.S. Census Bureau
 The U.S. Bureau of Economic Analysis

The Economic Impact of Birmingham-Southern College

Using data from the most recent fiscal year -- 2022 -- this report calculates the economic impact that BSC brings to Alabama. In this report we estimate the impacts for the following three categories of BSC expenditures:

1. spending for salaries of faculty and staff (salaries & wages)
2. spending on operating supplies, expenses, and other budgeted projects (goods and services and construction); and
3. spending by the students who attend the institution.

For items 1 and 2, we used the following information as the basis of our calculations.

Table 1: Birmingham-Southern College Expenditures for Fiscal Year 2022

	BSC	
	FY '21	FY '22
Salaries and Benefits	\$20,698,177	\$21,697,594
Operation	\$13,855,295	\$15,371,864
Debt: Interest Expense	\$1,670,540	\$1,554,204
Utilities	\$2,436,072	\$2,621,793
Totals	\$41,417,929	\$44,071,034

The figures in Table 1 provide two of the required spending categories, namely, payroll and purchasing expenditures for BSC. For estimating the economic impact, we defined the expenditures on goods and services (purchasing) as the summation of Operating, Capital, and Utility expenditures by BSC. The debt payment category was excluded from the above figure because this item does not represent annual flow expenditures but rather repayment for expenditures that occurred in some previous years.

The third required expenditure category is students' spending in Alabama. With respect to annual student expenditure, first we estimated student enrollment on an FTE basis. According to the information provided by BSC, the school has 972 full-time students. Sixty-two percent of the full-time students (604 students) are Alabama residents. The remainders of the student body are categorized as non-Alabama residents. Forty percent (40%) of the Alabama-based students are residents of Jefferson County.

Next, using comparable student expenditure data for the Alabama, we used an annual expenditure of \$12,690 per FTE student. This figure represents a typical student

expenditure on retail, rent (real estate), utilities, recreation, gasoline, and other expenditures while attending BSC on FTE basis.

An enrollment of 972 FTE students and an average per student expenditure of \$12,690 yields estimated total annual students' expenditures of \$12,334,680. This is the estimate that we used as the third required spending data for conducting the economic impact of BSC on Alabama region.

It is important to note that in any institution of higher education a portion of the student body comes from the local area. For example, as stated earlier, 62% of the full time BSC students are from Alabama. It can be argued that the expenditures by these students are money that would have been spent in the area even if these students had not attended BSC. According to this argument, the economic impact should only be considered the out-of-area student expenditures.

However, we take a different approach regarding this issue. That is, it is most likely that many local students would have enrolled in other programs if BSC did not exist in Birmingham. In this case, the existence of BSC prevents these expenditures from leaking out of Jefferson County. To the extent that BSC existence in the area prevents expenditures leak, the expenditures derived from local students should be included in the economic impact of BSC.

Indirect and Induced Spending Impact of BSC

The total spending by BSC and its student body is presented in Table 2.

Table 2: Direct Spending Attributable to BSC by Source, Fiscal Year 2022

Source	Total Spending
Salaries and Wages	\$21,697,594
Goods and Services	\$18,864,685
Student	\$12,334,680
Total	\$52,896,959

According to our estimate, in FY '22, a total of \$52.9 million in direct spending can be attributable to BSC. From this total spending 41% is employees' salaries, 36% is BSC purchase of goods and services, and 23% is the student expenditures.

Using the figures presented in Table 2, we computed the portion of the direct BSC expenditures that are spent in Alabama area. That is, we re-construct BSC's direct spending based on the portions that remain in Alabama and the portion that leaks out of the area.

The results are presented in Table 3.

Table 3: Direct Spending in Alabama Attributable to BSC by Source, Fiscal Year 2022

Source	Total Spending	Spending Within Area	Percent Spent in Area
Salaries and Wages	\$21,697,594	\$19,527,835	90%
Goods and Services	\$18,864,685	\$15,091,748	80%
Student	\$12,334,680	\$11,101,212	90%
Total	\$52,896,959	\$45,720,795	86%

Consistent with the standard practice, we assume that 90, 80, and 90 percent of the employees, BSC, and students' expenditures are spent in Alabama. In other words, we assume that approximately \$7.2 million, or 13.5% of the expenditures, leaks out of the Alabama economy. This yields a direct spending of \$45.7 million in Alabama for BSC.

Finally, using the figures in Table 3, we estimate the induced, indirect, and total economic impact of BSC's spending on the local economy. The results are presented in Table 4.

Table 4: Indirect, Induced, and Total Economic Impact of BSC, Fiscal Year 2022

Type of Spending	Direct Spending	Multiplier	Indirect & Induced Spending	Total Direct, Indirect & Induced Spending
Purchasing	\$15,091,748	1.98	\$14,789,913	\$29,881,661
Payroll	\$19,527,835	2.2	\$23,433,402	\$42,961,236
Student	\$11,101,212	2.2	\$13,321,454	\$24,422,666
Total	\$45,720,795	2.1	\$51,544,769	\$97,265,564

In Table 4, the appropriate multipliers (the ratio of total spending to direct spending) are used to estimate the economic impact of BSC expenditures on the Alabama economy. The multipliers used in table 4, (1.98, 2.2, and 2.2) are from Bureau of Economic Analysis, RIMS II, and are Alabama specifics.

As is shown in Table 4, the total economic impact of BSC on Alabama economy, in FY '22, is estimated at \$97.3 million. In other words, \$45.7 millions of direct spending by BSC creates an additional \$51.5 million by other local businesses in the state. The mathematical relationship between the total and direct spending by BSC, translates in an average multiplier of 2.1. This suggests that for \$1 spent by BSC the local economy generates an additional \$1.1 of spending.

The average multiplier value reported in Table 4 is comparable with the figures reported for other institutions of higher education. For example, we find the average multipliers of 1.9 for the University of Alabama, 1.6 for The University of Georgia System, 1.7 for UC

Berkeley, 1.5 for Harvard University, 1.8 for Columbia University, and 1.4 for Johns Hopkins University.

Employment Impact of BSC

The employment impact of the BSC spending on the local economy is presented in Table 5.

Table 5: Direct, Indirect, and Total Employment Attributable to BSC Spending, Fiscal Year 2022

Type of Spending	Direct Spending	Direct Jobs	Multiplier	Indirect Jobs	Total Direct, Indirect Jobs
Purchasing	\$15,091,748		41.7	585	585
Payroll	\$19,527,835	292	21.2	385	677
Student	\$11,101,212		21.2	219	219
Total	\$45,720,795			1,189	1,481

In table 5 we use the direct spending by BSC to estimate the number of jobs in Alabama attributable to BSC. As reported earlier, we use Alabama specific employment multipliers produced by RIMS II to estimate the employment impact of BSC. The multipliers in Table 5 are the number of total employments per \$1 million direct spending.

The BSC reports direct FTE employment of 292 individuals. This direct employment, along with 1,189 indirect jobs attributable to BSC spending in the area, yields a total employment of 1,481 full time jobs for BSC. In all BSC helps to create approximately thirty-two jobs for every \$1 million in direct spending.

Income Impact of BSC

Direct spending by BSC means additional demand for goods and services in the region. The additional demand leads to additional employment and this in turn leads to additional income for the citizens of Alabama. In this section of the report, we present our estimate of the income (or earning) impact of BSC.

Table 6: Direct and Total Income Impact of BSC Spending, Fiscal Year 2022

Type of Spending	Direct Spending	Multiplier	Total Personal Income Generated
Purchasing	\$15,091,748	0.77	\$11,572,352
Payroll	\$19,527,835	0.61	\$11,851,483
Student	\$11,101,212	0.61	\$6,737,348
Total	\$45,720,795		\$30,161,183

According to Table 6, the direct spending by BSC and its students lead to an additional \$30.1 million income for the Alabama citizens. Considering that the payroll (or the direct

income) of BSC is \$21.7 million, we estimate that, in fiscal year 2022, BSC has been responsible for \$51.91million of total income (indirect income impact due to BSC spending plus BSC’s direct payroll) in Alabama region. This suggests that for every \$1.0 in payroll by BSC a total of \$2.40 in personal income is generated for the citizens of Alabama.

The same procedure as described above was repeated using the Jefferson County multipliers. This process yielded the economic impact of the BSC for the Jefferson County economy.

In summary the economic impact of the BSC, for FY 2022, on the Alabama and Jefferson Country’s economy can be summarized as follows:

Total economic impact –	State \$97.2 million, Jefferson County \$70.5 million.
Total employment impact –	State 1,481, Jefferson County 1,057.
Total Income Impact –	State \$51.9 million, Jefferson County \$41 million.

Human Capital Investment

In the previous sections of this report, we attempted to estimate the economic impact of directly quantifiable effects of Birmingham-Southern College on the economy of the state and the county. While the economic impact of BSC is considerable, the value-added benefits of BSC are not confined to economics tabulations. The intellectual and social impacts of BSC are also impressive and long-lasting.

The graduates of BSC would see an increase in their lifetime earnings. For example, Census Bureau figures, analyzed by the Center for Policy Analysis at the American Council on Education, show a \$1 million lifetime difference in the earnings of people with a bachelor’s degree versus those with just a high school diploma. More importantly, a sizable proportion of BSC graduates may stay in Alabama and become part of the educated and skilled workforce in the area. This human capital value-added, or investment in BSC services by its students, plays a crucial role in the economic growth of the region.

According to BSC records, this institution can identify a total of 16,864 graduates. Approximately 56% or 9,516 are currently residing in Alabama. From this total a sum of 6,818 graduates are still a part of the skilled workforce in the state and are enjoying higher economic earnings due to their human capital investment.

It is our estimate that the 6,818 BSC graduates, who currently are actively working, are responsible for a value-added social benefit of approximately \$211.5 million in 2022. As for Jefferson County, our estimate is closer to \$157.1 million for FY 22.

This figure is not the economic benefit of BSC that traditionally is driven by its quantifiable expenditure patterns in the community. Rather, this is the additional social benefit of BSC due to its value-added marginal return to its graduates’ human capital investments.

About the Author: Dr. M. Keivan Deravi

Dr. M. Keivan Deravi is the president of Economic Research Services, Inc., a private economic consultant firm. He is currently retained to work as an economic expert, with the Alabama Legislative Services Agency, Alabama Executive Budget Office, and the Alabama Department of Finance.

He is the architect of the Alabama Economic Forecasting Model and Alabama Input/output model, both are used to generate forecasts for the state's major economic variables. Over the last 35 years, Dr. Deravi's forecasts have been utilized by every administration in developing the General Fund and Education Trust Fund budgets, which are presented to the Alabama Legislature annually.

He has been involved with the economic impact and feasibility of ThyssenKrupp Steel and Stainless USA, EADS, North America Inc, Airbus, Hyundai, Toyota, Honda, Mercedes-Benz, Baptist Health, Alfa, Alabama Energy Sector, Alabama Coal Association, Associated Builders and Contractors, Alabama Two-Year Colleges, and Retirement Systems of Alabama. He has been a consultant to a major lobbying firm in Washington, D.C., and many law firms in New York and Alabama. He has been quoted in *The Wall Street Journal*, *London Financial Times*, Bloomberg News, *Forbes* magazine, *the New York Times*, *USA Today*, *National Public Radio*, and *Fox News Channel*. He was presented a special award of recognition by the State of Alabama and Alabama Senate commended him for the accuracy of his economic projections at the state and national level.

Dr. Deravi is a Phi Kappa Phi graduate of Oklahoma State University where he received his doctorate degree. His research interests are in the area of the theory of monetary policy, foreign exchange markets and regional economic modeling techniques. He is the author of many journal articles. His research papers have appeared in a wide range of professional journals, including *Journal of Banking and Finance*, *Economic Inquiry*, and *Southern Economic Journal*, three of the most prestigious economic journals.

He served as Professor of Economics, President of Faculty Senate, Dean, Interim Provost, Special Assistant to the Chancellor over a period of 35 years at Auburn University System.

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