

The University of Alabama 2004-2005 Economic Impacts



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Center for Business and Economic Research
Culverhouse College of Commerce

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Highlights

- For 2004-2005, The University of Alabama (UA) economic impacts on the State of Alabama are \$1.455 billion and almost 8,100 jobs.
- Alabama will realize a 9.6 percent annual rate of return on the \$126.9 million state appropriation to UA.
- Alabama home football games had an impact of \$19.2 million per game on the state; the 7-game total impact was \$134.2 million.
- For every \$1 of state appropriation UA had an almost \$11.50 impact through leveraging.
- Total tax impact on the state was \$57.3 million; \$34.5 million to state coffers and \$22.8 million in local sales taxes to counties and cities. The state's \$34.5 million consisted of \$14.3 million sales taxes and \$20.2 million income tax receipts.
- UA economic impacts on the Tuscaloosa metro area were \$967.7 million and 6,941 jobs.
- Each home football game had an impact of \$12.7 million on the Tuscaloosa metro area; the 7-game total impact was \$89.1 million.
- Total sales tax impact on the Tuscaloosa MSA was \$17.5 million.
- Expected real annual rates of return for the UA 2004-2005 graduating class range from 10.7 percent to 13.3 percent compared to a high school graduate. Marginal real annual rates of return range from 10.7 percent to 24.7 percent depending on the degree.
- UA presents very attractive public and private investment opportunities.



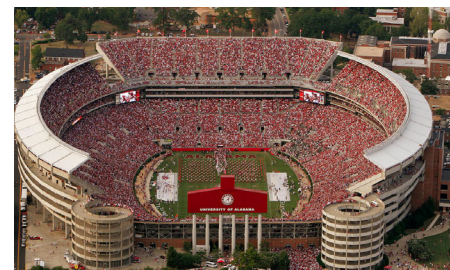
Introduction

This report presents the economic impacts of The University of Alabama (UA) on the State of Alabama and the Tuscaloosa metro area. Both expenditure and employment impacts are presented. Public and private investment analyses of a UA education are also presented because state appropriations and tuition and other attendance costs can be considered as investments by both the state and the students. The analyses show that those investments are worthwhile and that UA has a significant impact on the economies of both the state and the Tuscaloosa metro area.

Through its teaching, research, and service activities, UA provides numerous benefits that have lasting impacts on its graduates and the general public. The University generates jobs, yields tax revenues, attracts business and industry to the region and state, provides assistance in business creation and growth, and promotes innovation. UA also improves workforce skills and the general quality of life in the Tuscaloosa metro area, the state, and the nation. Graduates' learning abilities and intellectual growth are enhanced, enabling them to earn high incomes and contribute significantly in various ways to society. Higher incomes result in more tax revenues for the state and other tax jurisdictions. UA has an extensive outreach program and links with communities, business, industry, and government, through which it is involved in economic development and social programs at the community, regional, and state levels.

Total UA expenditure for 2004-2005 is \$636.8 million. The University spent \$215.8 million on payroll and \$219.5 million on purchases. Students spent approximately \$201 million on off-campus housing, food, books, clothing, etc. State appropriation of \$126.9 million represents 29 percent of UA's payroll and purchases, but just 20 percent of the total UA expenditure for the year.

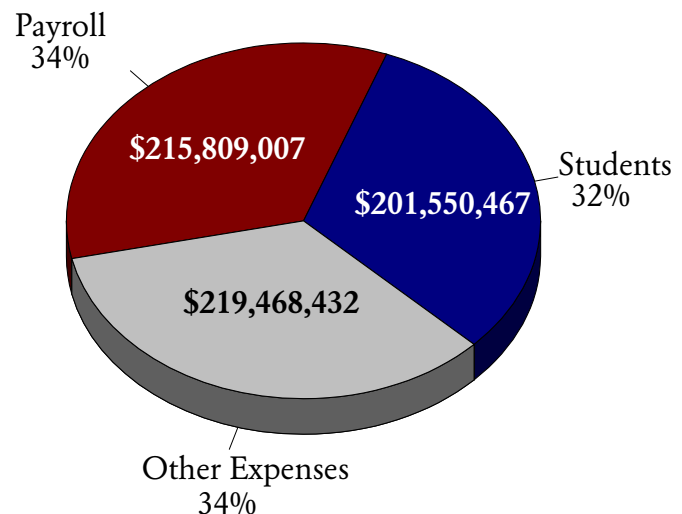
Visitors to the University make other expenditures in addition to the above-mentioned \$636.8 million. Football alone had a visitor expenditure impact of about \$12.7 million per game in the Tuscaloosa metro area and \$19.2 million per game statewide. UA visitors include athletic



event spectators, prospective students, visiting parents and relatives, visiting academic personnel, business representatives, and others. Visitors are drawn to activities such as family weekend, honors day, commencement ceremonies, homecoming, band competitions, alumni weekends and reunions, and other events. Academic and business visitors attend conferences, seminars, lectures, and other educational programs. Other business visitors include media representatives, education officials, vendors, research sponsors, and candidates for faculty and staff positions.

UA Direct 2004-2005 Expenditures

Total: \$636,827,906



The direct UA expenditure generates more rounds of spending in the area and the state that are captured by multipliers determined from the Regional Input-Output Modeling System (RIMS II). RIMS II is an input-output model developed and maintained by the U.S. Department of Commerce's Bureau of Economic Analysis. The model is available for every state and metro area in the nation and also for many counties. An economic model that uses RIMS II multipliers for the State of Alabama and the Tuscaloosa metro area was developed and used in this study.

UA Economic Impacts on Alabama

Not all of the total \$636.8 million UA expenditure was made within the state; a portion went to vendors outside Alabama. About 80 percent of payroll, 90 percent of purchases, and all student expenditures are assumed to be spent in Alabama. The total 2004-2005 UA expenditure in Alabama is thus \$571.7 million.

The economic impacts of UA on the state in 2005 are \$1,454.7 million and 8,088 jobs (Table 1). This \$1.455 billion expenditure impact is generated from the \$571.7 million direct in-state expenditures and a visitor impact of \$175.5 million. The additional visitor expenditure impact comprises \$141.4 million from athletics and \$34.1 million from other visitor expenditures. Football alone had a visitor expenditure impact of about \$134.2 million from seven home games at about \$19.2 million per game. Basketball, baseball, gymnastics, swimming, etc. are conservatively estimated to have a \$7.2 million expenditure impact. The total \$1.455 billion expenditure impact is estimated to have generated slightly more than \$34.5 million state sales and income tax revenues and \$22.8 million city and county sales taxes for a total of approximately \$57.3 million.

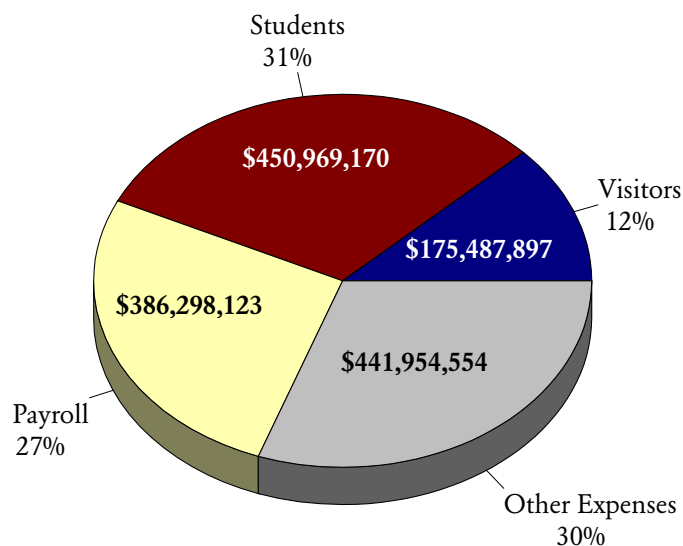
The UA impacts on the state listed in the previous paragraph are only part of what the state gets in return for state appropriations of \$126.9 million. Many public benefits of education are hard to measure—innovation promotion, direct and indirect new business development and job creation, general improvements in the quality of life, some public service, etc.—but others such as additional tax receipts can be measured. These tax revenues are the main measurable benefits the state derives from making the appropriation. UA education from a statewide investment perspective is considered for the class of 2005 assuming that 30 percent of the class will reside permanently out of state, and also that state sales and income tax rates remain unchanged.

The \$126.9 million state funding for 2004-2005 is offset in the same year by the \$34.5 million sales and income tax receipts noted above, resulting in a net investment by the state of \$92.4 million. Over the working life of the class of 2005, this net investment will generate a total of \$703 million income and sales taxes; \$493 million in state only sales and income tax collections and another \$210 million in city and county sales taxes. These tax collections yield an annual rate of return on the state's investment of 9.6 percent or about twice the current 10-year U.S. Treasury Bond rate. The annual rate of return is 7.4 percent if just the \$493 million state tax revenues are considered. There are additional tax revenues that are not considered here such as property taxes and vehicle registration and tag fees.

UA 2004-2005 Economic Impact on Alabama

Employment Impact: 8,088 jobs

Expenditure Impact: \$1,454,709,745



UA Economic Impacts on the Tuscaloosa Metro Area

Of the total \$636.8 million UA expenditure, we estimate that 70 percent of payroll, 60 percent of purchases, and all student expenditures were spent in the Tuscaloosa metro area. Thus, adjusting for leakages out of the area, UA expenditures in Tuscaloosa County totaled \$484.3 million (Table 2). This results in an expenditure impact of \$967.7 million, including a visitor expenditure impact of \$116.4 million. This visitor impact comprises \$93.8 million from athletics and \$22.6 million from other visitor expenditures. Football provided a visitor expenditure impact of \$89.1 million from the seven home games played in Tuscaloosa. The average impact per game was slightly more than \$12.7 million. Basketball, baseball, gymnastics, swimming, and other sports are estimated to have had a \$4.8 million impact.

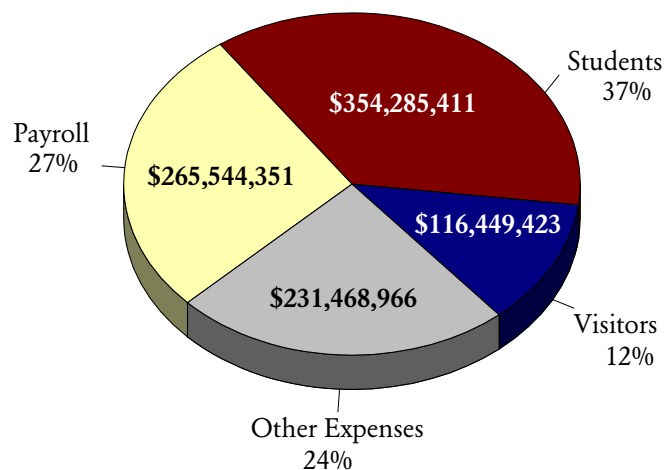


The \$967.7 million UA expenditure impact on the Tuscaloosa metro area for 2004-2005 is estimated to have generated area county and city sales tax revenues of approximately \$17.5 million. The University of Alabama had full-time equivalent (FTE) employment totaling 4,952, which resulted in an employment impact of 6,941 jobs for the area.

UA 2004-2005 Economic Impact on Tuscaloosa Metro Area

Employment Impact: 6,941 Jobs

Expenditure Impact \$967.7 million



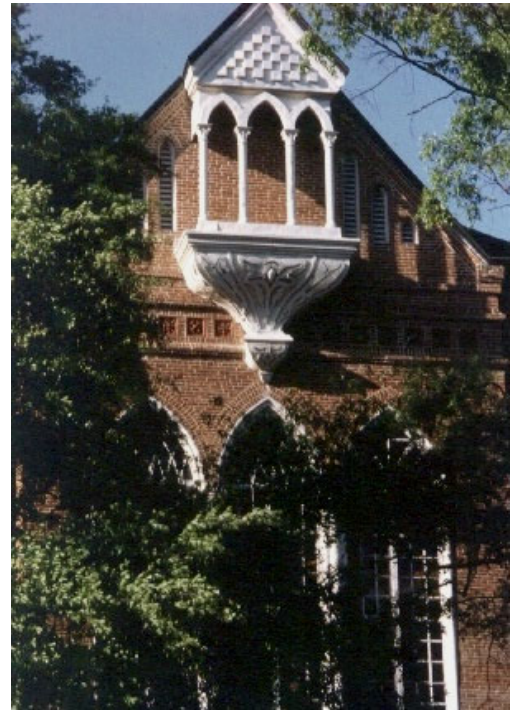
UA Education as Private Investment

A University of Alabama education is also an investment by students. Every year thousands of new students enroll in UA degree programs. The benefits for these students are manifold. First, education is its own reward. Additionally, the ability to learn and grow intellectually increases the graduate's earning potential. However, the college degree comes at a cost that includes the obvious expenditures for the education (tuition, room and board, books, etc.), as well as forgone earnings while in school.

The forgone earnings, often called the opportunity cost, is taken to be the earnings potential of the educational level immediately below the graduate's highest degree. For example, the opportunity cost of a master's degree is the earnings potential of a bachelor's degree holder. The cost of study is therefore the opportunity cost plus the direct expenditure to obtain the degree. This cost is the actual marginal cost of pursuing the degree, which can be compared to the marginal benefit or addition to value (called value added) for the graduate, to determine whether the decision to obtain a UA degree is prudent. Value added is the difference in average salary of a particular degree graduate compared to that of a specified reference. The reference for marginal value added is a person with the degree level immediately below.

Only half the opportunity cost is included in the marginal cost of the UA degree since many students work an average of 20 hours a week to support their education. A category of people with "some college" is included in the study to capture individuals who began college but did not complete the bachelor's degree requirements. These individuals will earn more income in their working lives than high school graduates will without college experience.

In the marginal analysis, the average doctoral degree salary is compared to that of the master's degree, a master's is compared to a bachelor's, and a bachelor's to a high school graduate with some college



experience. The value added of people with some college is obtained by comparing their income to that of high school graduates. Table 3 shows the results of the investment analysis with the assumption that graduates will retire at 67 years of age. The table also shows lifetime earnings in both current and real (year 2005) dollars. Expected lifetime earnings increase from about \$2.2 million for a high school graduate to \$6.2 million for a doctoral degree holder; the corresponding real lifetime earnings range is \$1.0 million to \$3.3 million.

The investment analysis was performed using real or constant year 2005 dollars. The real annual rate of return on private investment in a UA education is determined by generating the annual cost and income streams over the different lifetimes of the categories being considered. People who attend some college will have real lifetime earnings of about \$1.2 million, almost \$259,000 more than a high school graduate. This yields a 10.7 percent real annual rate of return on their UA investment. Bachelor and master's degree holders will earn marginal value added of about \$571,000 (a real annual return of 14.9 percent) and nearly \$728,000 (a real annual return of 24.7 percent), respectively. A doctorate will earn approximately \$711,000 more than a master's, a 15.8 percent real annual rate of return.

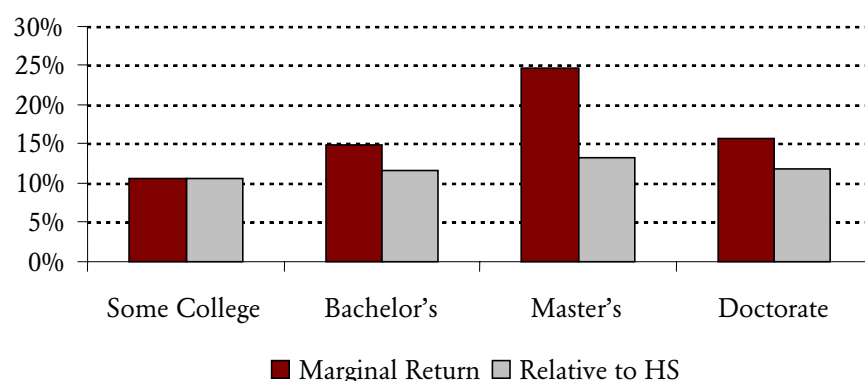
The positive real rates of return and their magnitudes indicate that the decision to pursue a UA degree is very sensible, whether or not one completes the degree. Higher returns can be obtained by completing the degree. The master's degree has the highest marginal return on investment, but the doctoral degree earns the most, even over the shorter working life. The doctoral degree, however, has the next to smallest annual rate of return. These real investment returns are better than the long term return on investment in U.S. equity markets.

One may also consider the rate of return on attending college relative to stopping with high school graduation. The master's degree is again the most profitable with a 13.3 percent real annual rate



of return, followed by the doctorate at 11.8 percent. The bachelor's yields an 11.7 percent return, and some college has the lowest return of 10.7 percent.

Real Annual Rates of Return of a UA Education by Degree



Summary and Conclusions

The 2004-2005 University of Alabama economic impacts on the State of Alabama are \$1.455 billion expenditure impact and 8,088 jobs. The University is an excellent investment opportunity for the state, providing a 9.6 percent annual rate of return on state appropriations to UA for the graduating class of 2005. The economic impacts on the Tuscaloosa metro area amount to \$967.7 million and 6,941 jobs.

An education at The University of Alabama is a very high-yielding investment for its students. The real annual rate of return on some college attendance is 10.7 percent over a high school graduate. The bachelor's degree has a 14.9 percent real annual rate of return over some college attendance, and the master's degree yields a 24.7 percent return over a bachelor's degree. The doctorate provides a 15.8 percent marginal return over the master's and results in the highest lifetime earnings.



It is important to note that any study of this kind has many uncertainties. The real rates of earnings growth may change. So can income and sales tax rates, rate of alumni residence in the state, etc. However, under the assumptions of this report, a UA education is a very sound investment for students (better than stock indexes) and a better investment for the state than many bonds. In addition, there are several intangible benefits of a UA education that cannot be measured. The University produces skilled and knowledgeable people; provides valuable research, adding to the stock of knowledge; enhances graduates' ability to learn and grow intellectually and to contribute in various ways to society; and provides valuable service to communities and the state.

The intangible, yet very real and critical, role of higher education in the modern high-tech economy is valued. Economic growth is attributable to the knowledge economy characterized by increasing returns, rather than the physical economy with its diminishing returns. Physical products, on the other hand, depreciate and become obsolete. The information age makes UA essential to the economic development of the metro area, state, and nation. The 2004-2005 economic impacts of The University of Alabama on the State of Alabama and the Tuscaloosa metro area certainly exceed by far the measurable component.

Acknowledgments

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Table 1
The University of Alabama 2004-2005 Expenditure Impacts on Alabama
(Millions of dollars)

Source	Total	Spent in Alabama	Indirect Impact	Total Impact
The University of Alabama				
Payrolls	\$215.8	\$172.6	\$213.7	\$386.3
Purchases	<u>\$219.5</u>	<u>\$197.5</u>	<u>\$244.4</u>	<u>\$442.0</u>
	\$435.3	\$370.2	\$458.1	\$828.3
Student Expenditures	\$201.6	\$201.6	\$249.4	\$451.0
Visitor Expenditures				\$175.5
Total	\$636.8	\$571.7	\$707.5	\$1,454.7
Employment Impact (Jobs)				8,088

Note: Rounding effects may be present.

Source: Center for Business and Economic Research, The University of Alabama.

Table 2
The University of Alabama 2004-2005 Expenditure Impacts on Tuscaloosa Metro Area
(Millions of dollars)

Source	Total	Spent in Tuscaloosa County	Indirect Impact	Total Impact
The University of Alabama				
Payrolls	\$215.8	\$151.1	\$114.5	\$265.5
Purchases	<u>\$219.5</u>	<u>\$131.7</u>	<u>\$99.8</u>	<u>\$231.5</u>
	\$435.3	\$282.7	\$214.3	\$497.0
Student Expenditures	\$201.6	\$201.6	\$152.7	\$354.3
Visitor Expenditures				\$116.4
Total	\$636.8	\$484.3	\$367.0	\$967.7
Employment Impact (Jobs)				6,941

Note: Rounding effects may be present.

Source: Center for Business and Economic Research, The University of Alabama.

Table 3
UA Education as Private Investment (Class of 2005)

Degree	Average Starting Salary	Total Cost of Degree (2005 \$)	Lifetime Earnings (2005 \$)	Marginal Value Added (2005 \$)	Real Annual Return on Investment	Real Return Relative to High School	Lifetime Earnings (Current \$)	Marginal Value Added (Current \$)
High School	17,894		971,274				2,195,073	
Some College	21,449	40,542	1,229,836	258,562	10.7%	10.7%	2,723,983	528,910
Bachelor's	31,532	110,242	1,801,098	571,262	14.9%	11.7%	3,807,220	1,083,238
Master's	47,069	168,837	2,528,739	727,641	24.7%	13.3%	5,135,905	1,328,685
Doctorate	66,160	280,037	3,239,504	710,765	15.8%	11.8%	6,205,021	1,069,116

Note: Total cost of degree is the direct cost of the education (tuition, room and board, books, etc.), as well as forgone earnings while in school.
Rounding effects may be present.

Source: Center for Business and Economic Research, The University of Alabama.