



THE UNIVERSITY of
MISSISSIPPI

The Economic Value of the University of Mississippi

EXECUTIVE SUMMARY



THE University of Mississippi (UM) creates value in many ways. The university plays a key role in helping students increase their employability and achieve their individual potential. The university facilitates new research and company developments and also draws visitors and students to the state, generating new dollars and opportunities for Mississippi. UM provides students with the education, training, and skills they need to have fulfilling and prosperous careers. Furthermore, UM is a place for students to meet new people, increase their self-confidence, and promote their overall health and well-being.

UM influences both the lives of its students and the state economy. The university supports a variety of industries in Mississippi, serves state businesses, and benefits society as a whole in Mississippi from an expanded economy and improved quality of life. The benefits created by UM even extend to the state government through increased tax revenues and public sector savings.

This study measures the economic impacts created by UM on the business community and the benefits the university generates in return for the investments made by its key stakeholder groups—students, taxpayers, and society. The following two analyses are presented:



Economic impact analysis



Investment analysis

All results reflect employee, student, and financial data, provided by the university, for fiscal year (FY) 2016-17. Impacts on the Mississippi economy are reported under the economic impact analysis and are measured in terms of added income. The returns on investment to students, taxpayers, and society in Mississippi are reported under the investment analysis.

*The value of UM influences both the **lives of its students** and the **state economy**.*



Economic impact analysis

UM promotes economic growth in Mississippi through its direct expenditures and the resulting expenditures of visitors, students, and state businesses. The university serves as an employer and buyer of goods and services for its day-to-day, research, and medical center operations. Numerous start-up and spin-off companies have formed as a result of programs and knowledge at UM. The university's reputation and activities attract visitors and students from outside Mississippi, whose expenditures benefit state vendors. In addition, UM is a primary source of higher education to Mississippi residents and a supplier of trained workers to state industries, enhancing overall productivity in the state workforce.

Operations Spending Impact



UM adds economic value to Mississippi as an employer of state residents and a large-scale buyer of goods and services. In FY 2016-17, the university employed 2,136 full-time and part-time faculty and staff (not including research and medical center employees), 92% of which lived in Mississippi. Total payroll at UM was \$189.4 million (excluding payroll from research and medical employees), much of which was spent in the state for groceries, mortgage and rent payments, dining out, and other household expenses. In addition, the university spent \$167.7 million on day-to-day expenses related to facilities, supplies, and professional services (excluding research and medical center expenditures).

UM's day-to-day operations spending added \$181 million in income to the state during the analysis year. This figure represents the university's payroll, the multiplier effects generated by the in-state spending of the university and its employees, and a downward adjustment to account for funding that the university received from state sources. The \$181 million in added income is equivalent to supporting 2,589 jobs in the state.

Research Spending Impact



Research activities impact the economy by employing people and requiring the purchase of equipment and other supplies and services. Over the last four years, UM received 54 invention disclosures, filed 20 new patent applications, and produced 19 licenses.

In FY 2016-17, UM spent \$84.9 million on payroll to support research activities. This, along with \$49.6 million in other research spending, created a net total of \$117.7 million in added income for the state economy. This added income is equivalent to supporting 1,584 jobs.

IMPACTS CREATED BY UM
IN FY 2016-17



\$181 million
Operations Spending Impact



\$117.7 million
Research Spending Impact



\$1.6 billion
Medical Center Spending Impact



\$18.5 million
Start-up and Spin-off Company Impact



\$19.2 million
Visitor Spending Impact



\$86.9 million
Student Spending Impact



\$905.1 million
Alumni Impact



\$2.9 billion
TOTAL IMPACT

- OR -

43,121
JOBS SUPPORTED

	Inventions	Patents	Licenses
2013-14	13	3	1
2014-15	9	4	13
2015-16	17	8	4
2016-17	15	3	1
Total	54	20	19

Source: UM.

Medical Center Spending Impact



One of the university’s most significant research facilities is the UM Medical Center (UMMC). The center provides a hands-on learning and research environment for students and employs hundreds of workers. Although broader health-related impacts are outside the scope of this analysis, the center is also known for providing quality patient care.

In FY 2016-17, UM spent over \$1.5 billion on medical center operations. These expenditures added a net impact of \$1.6 billion in added income to the state. This is equivalent to supporting 20,661 jobs.

Start-up and Spin-off Company Impact



UM creates an exceptional environment that fosters innovation and entrepreneurship, evidenced by the number of UM start-up and spin-off companies created in the state. Start-up companies, created specifically to license and commercialize UM technology or knowledge, have a strong and clearly defined link to UM. Spin-off companies, created and fostered through university programs or faculty and alumni, have a clear but weaker link to UM.

In FY 2016-17, UM start-up and spin-off companies added \$18.5 million in income to the Mississippi economy, which is equivalent to supporting 524 jobs. Of this added income, \$771.5 thousand was due to the start-up companies, with the remainder due to spin-off companies.

Visitor Spending Impact



Thousands of visitors from outside the state were attracted to UM during the analysis year to attend commencement, sports events, and other activities sponsored by the university. While in the state, visitors spent money for lodging, food, transportation, and other personal expenses. The off-campus expenditures of the university’s out-of-state visitors generated a net impact of \$19.2 million in added income for the

state economy in FY 2016-17. This \$19.2 million in added income is equivalent to supporting 641 jobs.¹

Student Spending impact



Around 42% of students attending UM originated from outside the state in FY 2016-17, and some of these students relocated to Mississippi to attend UM. These students may not have come to the state if the university did not exist. In addition, some in-state students, referred to as retained students, would have left Mississippi if not for the existence of UM. While attending the university, these relocated and retained students spent money on groceries, accommodation, transportation, and other household expenses. This spending generated \$86.9 million in added income for the state economy in FY 2016-17, which supported 2,137 jobs in Mississippi.

Alumni Impact



The education and training UM provides for state residents has the greatest impact. Since its establishment, students have studied at UM and entered the state workforce with greater knowledge and new skills. Today, tens of thousands of former UM students are employed in Mississippi. As a result of their UM educations, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY 2016-17, UM alumni generated \$905.1 million in added income for the state economy, which is equivalent to supporting 14,985 jobs.

Total Impact

UM added \$2.9 billion in income to the Mississippi economy during the analysis year, equal to the sum of operations, research, and medical center spending impacts, the start-up and spin-off company impact, the visitor and student spending impacts, and the alumni impact. For context, the \$2.9 billion impact was equal to approximately 2.6% of the total gross state product (GSP) of Mississippi. This contribution that the university provided on its own is as large as the entire Utilities industry in the state.

UM's total impact can also be expressed in terms of jobs supported. The \$2.9 billion impact supported 43,121 state jobs, using the jobs-to-sales ratios specific to each industry in the state. This means that one out of every 37 jobs in Mississippi is supported by the activities of UM and its students. In addition, the \$2.9 billion, or 43,121 supported jobs, impacted state industries in different ways. Among non-education industry sectors, UM supported the most jobs in the Health Care & Social Assistance industry sector – supporting 13,496 jobs in FY 2016-17. These are impacts that would not have been generated without the university's presence in Mississippi.

TOP INDUSTRIES IMPACTED BY UM (JOBS SUPPORTED)



One out of every 37 jobs in Mississippi is supported by the activities of UM and its students.

¹ This is a fairly conservative estimate as accommodation does not include an increased rate for popular sports game days.



Investment analysis

An investment analysis evaluates the costs associated with a proposed venture against its expected benefits. If the benefits outweigh the costs, then the investment is financially worthwhile. The analysis presented here considers UM as an investment from the perspectives of students, taxpayers, and society in Mississippi.

Student perspective



In FY 2016-17, UM served 25,378 credit and 734 non-credit students.

In order to attend the university, the students paid for tuition, fees, books, and supplies. They also took out loans and will incur interest on those loans. Additionally, students gave up money they would have otherwise earned had they been working instead of attending college. The total investment made by UM's students in FY 2016-17 amounted to a present value of \$548.2 million, equal to \$290.5 million in out-of-pocket expenses (including future principal and interest on student loans) and \$257.6 million in forgone time and money.

In return for their investment, UM's students will receive a stream of higher future earnings that will continue to grow throughout their working lives. For example, the average UM bachelor's degree graduate from FY 2016-17 will see an increase in earnings of \$20,600 each year compared to a person with a high school diploma or equivalent working in Mississippi. Over a working lifetime, the benefits of the bachelor's degree over a high school diploma will amount to an undiscounted value of \$906.4 thousand in higher earnings per graduate. Altogether, UM's FY 2016-17 students will receive \$1.8 billion in higher future earnings over their working lives, as a result of their education and training at UM.

STUDENTS SEE A HIGH RATE OF RETURN FOR THEIR INVESTMENT IN UM



12.3%

Average annual return for UM students



10.1%

Stock market 30-year average annual return

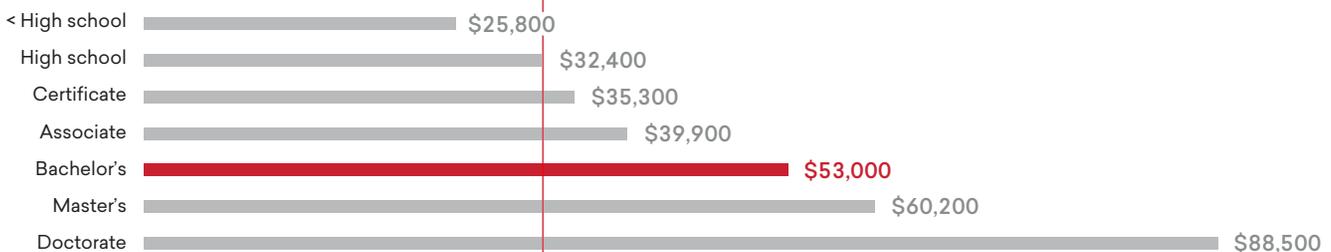


0.8%

Interest earned on savings account (National Rate Cap)

Source: Forbes' S&P 500, 1987-2016. FDIC.gov, 7-2016.

The average bachelor's degree graduate from UM will see an increase in earnings of **\$20,600** each year compared to a person with a high school diploma or equivalent working in Mississippi.



Source: Emsi complete employment data.

The students' benefit-cost ratio is 3.3. In other words, for every dollar students invest in UM, in the form of out-of-pocket expenses and forgone time and money, they will receive a cumulative value of \$3.30 in higher future earnings. Annually, the students' investment in UM has an average annual internal rate of return of 12.3%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 10.1%.

Taxpayer perspective



UM generates more in tax revenue than it takes. These benefits to taxpayers consist primarily of taxes that the state government will collect from the added revenue created in the state. As UM students will earn more, they will make higher tax payments throughout their working lives. Students' employers will also make higher tax payments as they increase their output and purchases of goods and services. By the end of the FY 2016-17 students' working lives, the state government will have collected a present value of \$442.9 million in added taxes.

Benefits to taxpayers will also consist of savings generated by the improved lifestyles of UM students and the corresponding reduced government services. Education is statistically correlated with a variety of lifestyle changes. Students' UM educations will generate savings in three main categories: 1) healthcare, 2) crime, and 3) income assistance. Improved health will lower students' demand for national health care services. In addition, students will be less likely to interact with the criminal justice system, resulting in a reduced demand for law enforcement and victim costs. UM students will be more employable, so their reduced demand for income assistance such as welfare and unemployment benefits will benefit taxpayers. For a list of study references, contact the university for a copy of the main report. Altogether, the present value of the benefits associated with a UM education will generate \$96.9 million in savings to state taxpayers.

Total taxpayer benefits amount to \$539.8 million, the present value sum of the added taxes and public sector savings. Taxpayer costs are \$121.5 million, equal to the amount of state government funding UM received in FY 2016-17. These benefits and costs yield a benefit-cost ratio of 4.4. This means that for every dollar of public money invested in UM in FY 2016-17, taxpayers will receive a cumulative value of \$4.40 over the course of the students' working lives. The

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STUDENT PERSPECTIVE

\$1.8 billion
Present value benefits

\$548.2 million
Present value costs

\$1.3 billion
Net present value

Benefit-cost Ratio	Rate of Return
3.3	12.3%



TAXPAYER PERSPECTIVE

\$539.8 million
Present value benefits

\$121.5 million
Present value costs

\$418.3 million
Net present value

Benefit-cost Ratio	Rate of Return
4.4	10.6%



SOCIAL PERSPECTIVE

\$4.8 billion
Present value benefits

\$840 million
Present value costs

\$3.9 billion
Net present value

Benefit-cost Ratio	Rate of Return
5.7	n/a*

* The rate of return is not reported for the social perspective because the beneficiaries of the investment are not necessarily the same as the original investors.

average annual internal rate of return for taxpayers is 10.6%, which compares favorably to other long-term investments in the public and private sectors.

Social perspective



Society as a whole in Mississippi benefits from the presence of UM in two major ways. Primarily, society benefits from an increased economic base in the state. This is attributed to higher student earnings and increased business output, which raise economic prosperity in Mississippi.

Benefits to society also consist of the savings generated by the improved lifestyles of UM students. As discussed in the previous section, education is statistically correlated with a variety of lifestyle changes that generate social savings. Note that these costs are avoided by the consumers but are distinct from the costs avoided by the taxpayers outlined above. Healthcare savings include avoided medical costs associated with smoking, alcohol dependence, obesity, drug abuse, and depression. Savings related to crime include reduced security expenditures and insurance administration, lower victim costs, and reduced expenditures by the criminal justice system. Income assistance savings include reduced welfare and unemployment claims. For a list of study references, contact the university for a copy of the main report.

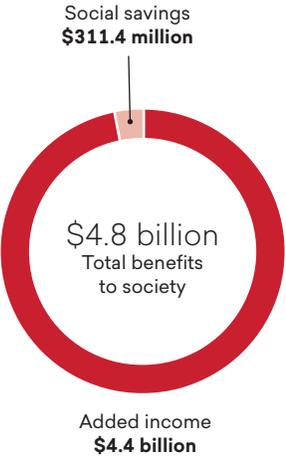
Altogether, the social benefits of UM equal a present value of \$4.8 billion. These benefits include \$4.4 billion in added income through students' increased lifetime earnings and increased business output, as well as \$311.4 million in social savings related to health, crime, and income assistance in Mississippi. People in Mississippi invested a present value total of \$840 million in UM in FY 2016-17. The cost includes all university and student costs.

The benefit-cost ratio for society is 5.7, equal to the \$4.8 billion in benefits divided by the \$840 million in costs. In other words, for every dollar invested in UM, people in Mississippi will receive a cumulative value of \$5.70 in benefits. The benefits of this investment will occur for as long as UM's FY 2016-17 students remain employed in the state workforce.

Summary of investment analysis results

The results of the analysis demonstrate that UM is a strong investment for all three major stakeholder groups—students, taxpayers, and society. As shown, students receive a great return for their investments in a UM education. At the same time, taxpayers' investment in UM returns more to government budgets than it costs and creates a wide range of social benefits throughout Mississippi.

SOCIAL BENEFITS IN MISSISSIPPI FROM UM



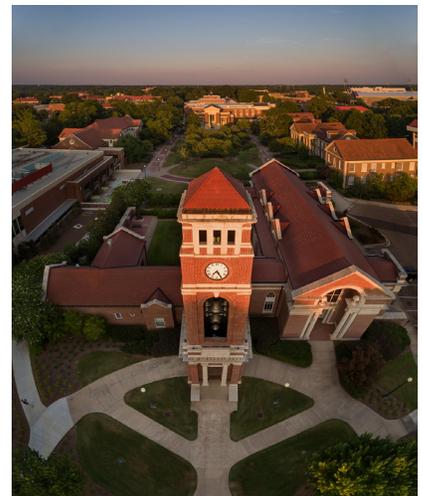
Conclusion

The results of this study demonstrate that UM creates value from multiple perspectives. The university benefits state businesses by increasing consumer spending in the state and supplying a steady flow of qualified, trained workers to the workforce. UM enriches the lives of students by raising their lifetime earnings and helping them achieve their individual potential. The university benefits state taxpayers through increased tax receipts and a reduced demand for government-supported social services. Finally, UM benefits society as a whole in Mississippi by creating a more prosperous economy and generating a variety of savings through the improved lifestyles of students.

About the Study

Data and assumptions used in the study are based on several sources, including the FY 2016-17 academic and financial reports from UM, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of Emsi's Multi-Regional Social Accounting Matrix model, and a variety of studies and surveys relating education to social behavior. The study applies a conservative methodology and follows standard practice using only the most recognized indicators of economic impact and investment effectiveness. For a full description of the data and approach used in the study, please contact the university for a copy of the main report.

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multiple perspectives.



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