

The Economic Value to Brazos Valley of Texas A&M University

Fiscal year of analysis 2022-23

TEXAS A&M UNIVERSITY (Texas A&M) 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 students and visitors to the region, generating new dollars and opportunities for Brazos Valley.¹ Texas A&M provides students with the education, training, and skills they need to have fulfilling and prosperous careers. Furthermore, Texas A&M is a place for students to meet new people, increase their self-confidence, and promote their overall health and well-being.

Texas A&M influences both the lives of its students and the regional economy. The university supports a variety of industries in Brazos Valley, serves regional businesses, and benefits society as a whole in Texas from an expanded economy and improved quality of life. Additionally, the benefits created by Texas A&M extend to the state and local government through increased tax revenues and public sector savings.

This study measures the economic impacts created by Texas A&M 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) 2022–23 (September 1, 2022, to August 31, 2023). Impacts on the Brazos Valley 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 Texas are reported under the investment analysis. An electronic version of the executive summary and fact sheet are available at collaborations.tamu.edu/edci/economic-impact/index.html.

Figure 1: Map of Brazos Valley, Texas



¹ For the purposes of this analysis, Brazos Valley is comprised of Brazos, Burleson, Grimes, Leon, Madison, Robertson, and Washington Counties in Texas.



Economic impact analysis

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

Operations spending impact

Texas A&M adds economic value to Brazos Valley as an employer of regional residents and a large-scale buyer of goods and services. In FY 2022-23, payroll at Texas A&M was \$854.8 million, much of which was spent in the region for groceries, mortgage and rent payments, dining out, and other household expenses. In addition, the university spent \$668.8 million on expenses related to facilities, supplies, and professional services.²

Texas A&M's operations spending added \$993.9 million in income to the region during the analysis year. This figure represents the university's payroll, the multiplier effects generated by the in-region spending of the university and its employees, and a downward adjustment to account for funding that the university received from regional sources. The \$993.9 million in added income is equivalent to supporting 15,707 jobs in the region.

Construction spending impact

Texas A&M invests in capital projects each year to maintain its facilities, create additional capacities, and meet its growing educational demands. While the amount varies from year to year, these quick infusions of income and jobs have a substantial impact on the regional economy. In FY 2022-23, Texas A&M's construction spending generated \$75.7 million in added income, which is equivalent to supporting 1,016 jobs.

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, Texas

Table 1: Impacts created by Texas A&M in FY 2022-23

Operations spending impact	\$993.9 million
	+
Construction spending impact	\$75.7 million
	+
Research spending impact	\$820.9 million
	+
Start-up and spin-off company impact	\$138.9 million
	+
Visitor spending impact	\$342.4 million
	+
Student spending impact	\$399.2 million
Total income	
	\$2.8 billion
OR	
	Total jobs supported
	47,629
	+
	Former student impact
	\$702.2 million
Grand total income	
	\$3.5 billion
OR	
	Grand total jobs supported
	59,794

² Research employees and their payroll, as well as non-pay expenses for research and construction, are excluded from this impact as they are measured in the following impacts.



A&M received 84 invention disclosures, filed 80 new patent applications, and produced 22 licenses. Texas A&M also directly generated license income over the same four-year time period, with \$1.9 million in license income in FY 2022-23.

In FY 2022-23, Texas A&M spent \$452.9 million on payroll to support research activities. This, along with \$498.4 million in other research spending,³ created a net total of \$820.9 million in added income for the regional economy. This added income is equivalent to supporting 12,991 jobs.

Table 2: Texas A&M research developments

Fiscal year	Inventions	Patents	Licenses
2019-20	26	25	4
2020-21	17	19	11
2021-22	21	17	5
2022-23	20	19	2
Total	84	80	22

Source: Texas A&M

Start-up and spin-off company impact

Texas A&M creates an exceptional environment that fosters innovation and entrepreneurship, evidenced by the number of Texas A&M start-up and spin-off companies created in the region. Start-up companies, created specifically to license and commercialize Texas A&M technology or knowledge, have a strong and clearly defined link to Texas A&M. Spin-off companies, created and fostered through university programs by faculty or former students, have less direct link to Texas A&M. The number of companies reported by Texas A&M includes faculty whose primary residence is in the Bryan-College Station area and who have joint appointments at Texas A&M and at Texas A&M System agencies.

In FY 2022-23, Texas A&M start-up and spin-off companies added \$138.9 million in income to the Brazos Valley economy, which is equivalent to supporting 1,751 jobs. Of this added income, \$33.5 million was due to the start-up companies, with the remainder due to spin-off companies.

Visitor spending impact

Over one million visitors from outside the region were attracted to Texas A&M during the analysis year to attend commencement, sports events, and other activities sponsored by the university. These visitors stayed an average of three days and two nights. While in the region, visitors spent money for lodging, food, transportation, and other personal expenses. The off-campus expenditures of the university's out-of-region visitors generated a net impact of \$342.4 million in added income for the regional economy in FY 2022-23. This \$342.4 million in added income is equivalent to supporting 7,617 jobs.

³ Excludes indirect costs because indirect costs are not necessarily spent during the analysis year.

Student spending impact

Around 80% of credit-bearing students attending Texas A&M originated from outside the region in FY 2022-23 and relocated to Brazos Valley to attend the university. These students may not have come to the region if the university did not exist. In addition, some in-region students, referred to as retained students, would have left Brazos Valley if not for the existence of Texas A&M. While attending the university, these relocated and retained students spent money on groceries, accommodation, transportation, and other household expenses. This spending generated \$399.2 million in added income for the regional economy in FY 2022-23, which supported 8,546 jobs in Brazos Valley.

Total Texas A&M impact on the Brazos Valley economy

The total economic impact of Texas A&M on the Brazos Valley economy amounted to \$2.8 billion in added income. This stems from Texas A&M's spending on operations, construction, research, its entrepreneurial activities, and the spending of its visitors and students. This \$2.8 billion in added income is equivalent to supporting 47,629 jobs.

Former student impact

Since the establishment of the university, students have studied at Texas A&M and entered the regional workforce with greater knowledge and new skills. Today, hundreds of thousands of former Texas A&M students are employed in Brazos Valley. As a result of their education from Texas A&M, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY 2022-23, Texas A&M's former students generated \$702.2 million in added income for the regional economy, which is equivalent to supporting 12,165 jobs.

Grand total impact on the Brazos Valley economy

Texas A&M added \$3.5 billion in income to the Brazos Valley economy during the analysis year, equal to the sum of the operations, construction, and research spending impacts; the start-up and spin-off company impact; the visitor and student spending impacts; and the former student impact. For context, the \$3.5 billion impact was equal to approximately 18.2% of the total gross regional product (GRP) of Brazos Valley. This contribution that the university provided on its own is nearly as large as the entire Health Care & Social Assistance; Construction; Transportation & Warehousing; and Utilities industries in the region combined.

Texas A&M's total impact can also be expressed in terms of jobs supported. The \$3.5 billion impact supported 59,794 regional jobs, using the jobs-to-sales ratios specific to each industry in the region. This means that one out of every four jobs in Brazos Valley is supported by the activities of Texas A&M and its students. In addition, the \$3.5 billion, or 59,794 supported jobs, stemmed from different industry sectors. For instance, among non-education industry sectors, the activities of Texas A&M and its former students in the Professional & Technical Services industry sector supported 3,661 jobs in FY 2022-23. If the university did not exist, these impacts would not have been generated in Brazos Valley.

Table 3: Top impacts of Texas A&M by industry (jobs supported)

Industry	Jobs supported
Accommodation & Food Services	12,892
Retail Trade	4,234
Professional & Technical Services	3,661
Arts, Entertainment, & Recreation	2,577
Other Services (except Public Administration)	1,802



Investment analysis

An investment analysis evaluates the costs associated with a proposed venture against its expected benefits. The analysis presented here evaluates Texas A&M as an investment from the perspectives of students, taxpayers, and society in Texas. As with the economic impact analysis, this analysis considers only FY 2022-23 activities.

Student perspective

In FY 2022-23, Texas A&M served 70,770 credit-bearing and 9,628 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 Texas A&M's students in FY 2022-23 amounted to a present value of \$1.4 billion, equal to \$824.4 million in out-of-pocket expenses (including future principal and interest on student loans) and \$592.8 million in forgone time and money.

In return for their investment, Texas A&M's students will receive a stream of higher future earnings that will continue to grow throughout their working lives. For example, the average Texas A&M bachelor's degree graduate from FY 2022-23 will see annual earnings that are \$32,800 higher than a person with a high school diploma or equivalent working in Texas. Over a working lifetime, the benefits of a bachelor's degree over a high school diploma will amount to an undiscounted value of \$1.5 million in higher earnings per graduate. The present value of the cumulative higher future earnings that Texas A&M FY 2022-23 students will receive over their working careers is \$6.8 billion.

The students' benefit-cost ratio is 4.8. In other words, for every dollar students invest in Texas A&M in the form of out-of-pocket expenses and forgone time and money, they will receive a cumulative value of \$4.80 in higher future earnings. Annually, the students' investment in Texas A&M has an average annual internal rate of return of 17.2%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 10.1%.

Taxpayer perspective

Texas A&M generates more in tax revenue than it receives. These benefits to taxpayers consist primarily of taxes that the state and local government will collect from the added revenue created in the state. As Texas A&M students will earn more, they will make higher tax payments throughout their working lives. Students' employers will

Table 4: Texas average earnings by education level at career midpoint

Education level	Annual earnings
High school diploma	\$39,800
Certificate	\$43,700
Associate degree	\$49,300
Bachelor's degree	\$72,600
Master's degree	\$89,800
Doctoral degree	\$108,500
Professional degree	\$146,800

Source: Lightcast employment data

Table 5: Students see a high rate of return for their investment in Texas A&M

Investment area	Rate of return
Average annual return for Texas A&M students	17.2%
Stock market 30-year average annual return	10.1%
Interest earned on savings account (national deposit rate)	0.5%

Source: Forbes' S&P 500, 1994-2023; FDIC.gov, March 2023

also make higher tax payments as they increase their output and purchases of goods and services. By the end of the FY 2022-23 students' working lives, the state and local government will have collected a present value of \$2.1 billion in added taxes.

Benefits to taxpayers will also consist of savings generated by the improved lifestyles of Texas A&M students and the corresponding reduced government services. Education is statistically correlated with a variety of lifestyle changes. The education that Texas A&M students receive will generate savings in three main categories: 1) health care, 2) justice system, and 3) income assistance. Improved health will lower students' demand for national health care services. In addition, costs related to the justice system will decrease. Texas A&M 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 Texas A&M Public Partnership and Outreach for a copy of the main report. Altogether, the present value of the benefits associated with an education from Texas A&M will generate \$558.4 million in savings to state and local taxpayers.

Total taxpayer benefits amount to \$2.6 billion, the present value sum of the added tax revenue and public sector savings. Taxpayer costs are \$603.4 million, equal to the amount of state and local government funding Texas A&M received in FY 2022-23. These benefits and costs yield a benefit-cost ratio of 4.3. This means that for every dollar of public money invested in Texas A&M in FY 2022-23, taxpayers will receive a cumulative present value of \$4.30 over the course of the students' working lives. The average annual internal rate of return for taxpayers is 10.5%, which compares favorably to other long-term investments in the public sector.

Social perspective

Society as a whole in Texas benefits from the presence of Texas A&M in two major ways. Primarily, society benefits from an increased economic base in the state. This is attributed to the added income from students' increased lifetime earnings (added student income) and increased business output (added business income), which raise economic prosperity in Texas.

Benefits to society also consist of the savings generated by the improved lifestyles of Texas A&M 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. Health care savings include avoided medical costs associated with smoking, obesity, substance abuse, and depression. Justice system savings include avoided costs to the government and society due to less judicial activity. Income assistance savings include reduced welfare and unemployment claims. For a list of study references, contact the Texas A&M Public Partnership and Outreach for a copy of the main report.

Altogether, the social benefits of Texas A&M equal a present value of \$35.2 billion. These benefits include \$21.9 billion in added student income, \$9.7 billion in added

Table 6: Social benefits in Texas from Texas A&M

Social savings	\$2.4 billion
Added student income	\$21.9 billion
Added income from university activities	\$1.3 billion
Added business income	\$9.7 billion
Total benefits to society	\$35.2 billion

Source: Lightcast impact model

business income, \$1.3 billion in added income from university activities, as well as \$2.4 billion in social savings related to health, the justice system, and income assistance in Texas. People in Texas invested a present value total of \$3.4 billion in Texas A&M in FY 2022-23. The cost includes all the university and student costs.

The benefit-cost ratio for society is 10.5, equal to the \$35.2 billion in benefits divided by the \$3.4 billion in costs. In other words, for every dollar invested in Texas A&M, people in Texas will receive a cumulative value of \$10.50 in benefits. The benefits of this investment will occur for as long as Texas A&M FY 2022-23 students remain employed in the state workforce.

Summary of investment analysis results

The results of the analysis demonstrate that Texas A&M 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 an education from Texas A&M. At the same time, taxpayers’ investment in Texas A&M returns more to government budgets than it costs and creates a wide range of social benefits throughout Texas.

Table 7: Summary of investment analysis results

Student perspective		Taxpayer perspective		Social perspective	
Present value benefits \$6.8 billion		Present value benefits \$2.6 billion		Present value benefits \$35.2 billion	
Present value costs \$1.4 billion		Present value costs \$0.6 billion		Present value costs \$3.4 billion	
Net present value \$5.4 billion		Net present value \$2.0 billion		Net present value \$31.8 billion	
Benefit-cost ratio	Rate of return	Benefit-cost ratio	Rate of return	Benefit-cost ratio	Rate of return
4.8	17.2%	4.3	10.5%	10.5	n/a*

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

Conclusion

*The results of this study demonstrate that Texas A&M creates value from **multiple perspectives**.*

The university benefits regional businesses by increasing consumer spending in the region and supplying a steady flow of qualified, trained workers to the workforce. Texas A&M enriches the lives of students by raising their lifetime earnings and helping them achieve their individual potential. The university benefits state and local taxpayers through increased tax receipts and a reduced demand for government-supported social services. Finally, Texas A&M benefits society as a whole in Texas 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 2022-23 academic and financial reports from Texas A&M, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of Lightcast's Multi-Regional Social Accounting Matrix model, and a variety of studies and surveys relating education to social behavior. Lightcast's methodology for this study adheres to the Association of American Universities (AAU) and the Association of Public and Land-grant Universities (APLU) guidelines. 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 Texas A&M Public Partnership and Outreach for a copy of the main report.



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