EXECUTIVE SUMMARY

THE ECONOMIC VALUE OF TEXAS A&M UNIVERSITY TO THE TEXAS A&M SERVICE REGION ECONOMY IN FY 2014-15

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Texas A&M University (Texas A&M) creates value in a variety of ways. The university improves higher education delivery throughout the region and helps students increase their employability and potential. The university facilitates new research and company developments and also draws visitors to the region, generating new dollars and opportunities for the Texas A&M Service Region.

The value of Texas A&M influences both the lives of students and also the regional economy. The university serves a range of industries in the Texas A&M Service Region, supports regional businesses, and benefits society as a whole in Texas from an expanded economy and improved quality of life. The benefits created by Texas A&M extend as far as the state and local government through increased tax revenues and public sector savings.

This study investigates the economic impacts created by Texas A&M in the Texas A&M Service Region on the business community and the benefits that the university generates in return for the investments made by their key stakeholder groups—students, society, and taxpayers. The following two analyses are presented:

- Economic impact analysis
- Investment analysis

All results reflect student and financial data for Fiscal Year (FY) 2014-15. Impacts on the regional business community are reported under the economic impact analysis. Results are measured in terms of total income. The return on investment to students, taxpayers, and society are reported under the investment analysis. Both analyses are described more fully in the following sections.

1 Texas A&M Service Region consists of Brazos, Burleson, Robertson, Grimes, Washington, Madison, and Leon County in Texas.
ECONOMIC IMPACT ANALYSIS

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

Texas A&M is an important employer in the Texas A&M Service Region. In FY 2014-15, the university employed 5,950 full-time and part-time faculty and staff (less research). Of these, 88% lived in the Texas A&M Service Region. Total payroll at Texas A&M was $653.1 million, much of which was spent in the region for groceries, dining out, clothing, and other household expenses. In addition, Texas A&M is a large-scale buyer of goods and services. In FY 2014-15 the university spent $566.6 million to cover its expenses for facilities, professional services, and supplies (less research). Texas A&M added $799.1 million in total income to the region during the analysis year as a result of its day-to-day operations (less research). This figure represents the university's payroll, the multiplier effects generated by the spending of the university and its employees, and a downward adjustment to account for funding that the university received from state and local sources.

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 A&M received 803 invention disclosures, filed 128 new US patent applications, and produced 259 licenses. The university also generated license income over the same four-year time period, with $10.1 million in license income in FY 2014-15.

In FY 2014-15, Texas A&M spent $265.5 million on payroll to support research activities, creating a net total of $423.1 million in total income for the regional economy.

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 or faculty and former students, have a clear but weaker 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. However, the number of companies may be significantly undercounted due to limited data availability, especially regarding student spin-off companies.

In FY 2014-15, Texas A&M start-up and spin off companies added $156.6 million in total income to the Texas A&M Service Region economy. Of this total income, $155.7 million was due to the start-up companies, with the remainder due to spin-off companies.

STUDENT SPENDING IMPACT

Around 60% of students attending Texas A&M originated from outside the region in FY 2014-15. Some of these students relocated to the Texas A&M Service Region. These students would not have come to the region if the university did not exist. In addition, a number of in-region students would have left the region for other education opportunities if not for the existence of Texas A&M. While attending the university, these relocator and retained students spent $542.8 million to purchase groceries, rent
accommodation, pay for transportation, and so on. A significant portion of these expenditures occurred in the region, generating $232.2 million in total income in the region economy during the analysis year.

VISITOR SPENDING IMPACT

Thousands of visitors from outside the region were attracted to Texas A&M during the analysis year to attend commencement, sports events, conferences, meetings, and other activities sponsored by the university. 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 $72.3 million in total income for the region economy in FY 2014-15.

FORMER STUDENT IMPACT

The education and training Texas A&M provides for region residents results in the greatest impact. Since the university was established, students have studied at Texas A&M and entered the workforce with new skills. Today, thousands of former students are employed in the Texas A&M Service Region (Figure 1).

During the analysis year, past and present students of Texas A&M generated $318.7 million in total income for the region. This figure represents the higher wages that students earned during the year, the increased output of the businesses that employed the students, and the multiplier effects that occurred as students and their employers spent money at other businesses.

TOTAL IMPACT ON THE TEXAS A&M SERVICE REGION ECONOMY

The overall impact of Texas A&M on the regional business community during the analysis year amounted to $2 billion in total income, equal to the sum of the operations spending impact, the research spending impact, the impact from start-up and spin-off companies, the student spending impact, and the visitor spending impact.

TABLE 2: Impacts created by Texas A&M on the region in FY 2014-15

<table>
<thead>
<tr>
<th>Impact</th>
<th>Total Income</th>
<th>Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPERATIONS SPENDING IMPACT</td>
<td>$799.1 MILLION</td>
<td>8,859</td>
</tr>
<tr>
<td>RESEARCH SPENDING IMPACT</td>
<td>$423.1 MILLION</td>
<td>5,243</td>
</tr>
<tr>
<td>START-UP AND SPIN-OFF COMPANY IMPACT</td>
<td>$156.6 MILLION</td>
<td>1,469</td>
</tr>
<tr>
<td>STUDENT SPENDING IMPACT</td>
<td>$232.2 MILLION</td>
<td>8,693</td>
</tr>
<tr>
<td>VISITOR SPENDING IMPACT</td>
<td>$72.3 MILLION</td>
<td>2,033</td>
</tr>
<tr>
<td>FORMER STUDENT IMPACT</td>
<td>$318.7 MILLION</td>
<td>5,375</td>
</tr>
<tr>
<td>TOTAL IMPACT</td>
<td>$2 BILLION</td>
<td>31,692</td>
</tr>
</tbody>
</table>

FIGURE 1: Texas A&M former students working in-state today


Retired, out-migrated since graduation
Still employed in-region today since graduation

YEAR GRADUATED


= + + + + + +
companies, the student spending impact, the visitor spending impact, and the former student impact. The $2 billion in total income was equal to approximately 15.7% of the GRP of the Texas A&M Service Region. By comparison, this contribution that the university provides on its own is larger than any industry in the region.

The total impact is also expressed in terms of the jobs supported by the total income; they are calculated by jobs-to-sales ratios specific to each industry. Overall, the $2 billion impact supports 31,692 jobs.

A portion of the total $2 billion is broken out into an industry-by-industry impact ordered by total income. Table 3 outlines the top industries impacted by Texas A&M. Because industries have different jobs-to-sales ratios, the associated jobs supported by the Texas A&M impact differ by industry. Nonetheless, these are impacts that would not have been generated without the university’s presence.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Total income</th>
<th>Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional and Technical Services</td>
<td>$409.7 MILLION</td>
<td>4,564</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
<td>$266.9 MILLION</td>
<td>10,067</td>
</tr>
<tr>
<td>Real Estate and Rental and Leasing</td>
<td>$68.9 MILLION</td>
<td>1,334</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>$64.4 MILLION</td>
<td>449</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>$55.5 MILLION</td>
<td>1,124</td>
</tr>
<tr>
<td>All other industries</td>
<td>$1.1 BILLION</td>
<td>13,833</td>
</tr>
<tr>
<td><strong>Total income</strong></td>
<td><strong>$2 BILLION</strong></td>
<td><strong>31,769</strong></td>
</tr>
</tbody>
</table>

*Numbers may not add due to rounding.*
INVESTMENT ANALYSIS

Investment analysis is the process of evaluating total costs and measuring these against total benefits to determine whether or not a proposed venture will be profitable. If benefits outweigh costs, then the investment is worthwhile and considered profitable.

Texas A&M received a total of $2 billion in FY 2014-15. Tuition and fees comprised 23% of total revenue, student aid from government sources comprised another 29%, and all other revenue comprised the remaining 47%. This study considers Texas A&M as an investment from the perspectives of those whom provided these revenues - students, taxpayers, and society. The backdrop for the analysis is the entire Texas economy.

STUDENT PERSPECTIVE

In FY 2014-15, Texas A&M served 60,337 credit students and 19,207 non-credit students. In order to attend the university, students paid for tuition, fees, books, and supplies. They also gave up money that they would have otherwise earned had they been working instead of attending the university. The total investment made by Texas A&M’s students in FY 2014-15 amounted to $1.7 billion, equal to $522.9 million in out-of-pocket expenses plus $1.1 billion in forgone time and money.

In return for their investment, Texas A&M’s students will receive a stream of higher future wages that will continue to grow through their working lives. As shown in Figure 2, earnings levels increase as people achieve higher levels of education. For example, the average bachelor’s degree completer from Texas A&M will see an increase in earnings of $29,700 each year compared to someone with a high school diploma or equivalent. Over a working lifetime, this increase in earnings amounts to an undiscounted value of approximately $1,306,800 in higher earnings.

The present value of the higher future wages that Texas A&M’s students will receive over their working careers is $5.4 billion. Dividing this value by the $1.7 billion in student costs yields a benefit-cost ratio of 3.24. In other words, for every $1 students invest in Texas A&M in the form of out-of-pocket expenses and forgone time and money, they receive a cumulative of $3.24 in higher future wages. The average annual rate of return for students is 13.8%. This is an impressive return, especially when compared to the 10-year average 7.2% return to the US stock market (Figure 3, on the next page).

FIGURE 2: Higher earnings at career midpoint by education level for FY 2014-15 Texas A&M students
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TAXPAYER PERSPECTIVE

Texas A&M generates more in tax revenue than it takes. 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 earn more, they will spend more resulting in higher tax revenues. Employers will also make higher tax payments as they increase their output and purchase more supplies and services. By the end of the FY 2014-15 students’ working careers, the state and local government will have collected a present value of $1.5 billion in added taxes.

Benefits to taxpayers consist of the savings generated by the improved lifestyles of students and the proportionally reduced government expenditures. Education is statistically correlated with a variety of lifestyle changes that generate taxpayer savings across three main categories: 1) health, 2) crime, and 3) unemployment. Improved health habits lower the students’ demand for national health care services. Students are also less likely to commit crimes, so the demand for law enforcement and criminal justice services is reduced (study references are available in the main report). Students are also more employable, so the demand for welfare and unemployment benefits, such as earnings assistance and welfare benefits, is reduced. For a list of study references to these statistical benefits, please contact the university for a copy of the main report. All of these benefits will generate a present value of $465.8 million in savings to state and local taxpayers.

Total benefits to taxpayers equal $2 billion, equal to the sum of the added taxes and public sector savings. Comparing this to the taxpayer costs of $407.8 million—equal to the funding that Texas A&M received from the state and local government during the analysis year—yields a benefit-cost ratio of 4.90. This means that for every $1 of public money invested in Texas A&M, taxpayers receive a cumulative value of $4.90 over the course of the students’ working lives. The average annual rate of return is 22.7%, a solid investment that compares favorably with other long-term investments in both the private and public sectors (Figure 3).

SOCIAL PERSPECTIVE

Society as a whole within Texas benefits from the presence of Texas A&M in two major ways. The first and largest benefit that society receives is an increased state economic base. As discussed in the previous section, the higher student earnings and increased business output occurs across the state. This raises prosperity in Texas and expands the economic base for society as a whole.

Benefits to society also consist of the savings generated by the improved lifestyles of students. Similar to the taxpayer section above, education is statistically correlated with a variety of lifestyle changes that generate social savings. Note that these costs are avoided by the consumers, and are distinct from the costs avoided by taxpayers outlined above. Health savings include avoided medical costs associated with smoking, alcoholism, obesity, drug abuse, and mental disorders. Crime savings include reduced security expenditures and insurance administration, lower victim costs, and reduced criminal justice system expenditures. Unemployment savings include the reduced employer contributions towards unemployment claims. For a list of study references to these statistical benefits, please contact the university for a copy of the main report.

Figure 4 shows the present value of the higher earnings and social savings that will occur in Texas over the
benefits regional businesses by increasing consumer spending in the region and supplying a steady flow of qualified, trained workers into the workforce. It enriches the lives of students by raising their lifetime earnings and helping them achieve their individual potential. It benefits state and local taxpayers through increased tax receipts across the state and a reduced demand for government-supported social services. Finally, it 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.

**Summary of Investment Analysis Results**

Table 4 presents the results of the investment analysis for all three of Texas A&M’s major stakeholder groups—students, society, and taxpayers. As shown, students receive great value for their educational investment. At the same time, the investment made by state and local taxpayers to the university creates a wide range of benefits to society and returns more to government budgets than it costs.

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

![Image: Present value of higher earnings and social savings in Texas]

**TABLE 4: Summary of investment analysis results**

<table>
<thead>
<tr>
<th>STUDENT PERSPECTIVE</th>
<th>TAXPAYER PERSPECTIVE</th>
<th>SOCIAL PERSPECTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits (thousands)</td>
<td>Benefits (thousands)</td>
<td>Benefits (thousands)</td>
</tr>
<tr>
<td>$5,370,073</td>
<td>$2,000,042</td>
<td>$25,064,200</td>
</tr>
<tr>
<td>Costs (thousands)</td>
<td>Costs (thousands)</td>
<td>Costs (thousands)</td>
</tr>
<tr>
<td>$1,656,795</td>
<td>$407,800</td>
<td>$3,181,824</td>
</tr>
<tr>
<td>Net present value (thousands)</td>
<td>Net present value (thousands)</td>
<td>Net present value (thousands)</td>
</tr>
<tr>
<td>$3,713,278</td>
<td>$1,592,242</td>
<td>$21,882,376</td>
</tr>
<tr>
<td>Benefit-cost ratio</td>
<td>Benefit-cost ratio</td>
<td>Benefit-cost ratio</td>
</tr>
<tr>
<td>3.24</td>
<td>4.9</td>
<td>7.88</td>
</tr>
<tr>
<td>Rate of return</td>
<td>Rate of return</td>
<td>Rate of return</td>
</tr>
<tr>
<td>13.8%</td>
<td>22.7%</td>
<td>NA</td>
</tr>
</tbody>
</table>

* 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.
CONCLUSION

ABOUT THE STUDY

Data and assumptions used in the study are based on several sources, including the FY 2014-15 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 Emsi’s Multi-Regional Social Accounting Matrix (MR-SAM) 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 investment effectiveness and economic impact. For a full description of the data and approach used in the study, please contact Texas A&M for a copy of the technical report.

ABOUT EMSI

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