EXECUTIVE SUMMARY
Demonstrating the Economic Value of Northwest Missouri State University

In the University’s own words, Northwest “focuses on student success – every student, every day.” That positive influence extends beyond students and into the community and economy. In FY14, Northwest Missouri State University’s $102.7 million in payroll and operations spending, together with the spending of its students and visitors as well as the added productivity of former students, created $617.5 MILLION in added regional income. This is equal to approximately 0.3 PERCENT of the total Gross Regional Product of the Green and White Circle, and is equivalent to creating 9,465 new jobs.

Since 1905, Maryville, Missouri’s Northwest Missouri State University has focused on providing local, national, and international students with a quality education, as reflected by its vision statement: “We will be THE University of choice for a comprehensive, exceptional student experience.” But the University also works to make a positive impact in its community, through business partnerships, environmental leadership, and more. By improving the delivery of higher education throughout the region and state, it helps students increase their employability and potential. By drawing students and visitors to the “Green and White Circle” (the University’s service region, a cluster of counties at the intersection of Missouri, Kansas, Nebraska, and Iowa), the University also generates new dollars and opportunities for the region. The University serves a range of industries in the Green and White Circle and supports regional businesses. All of Missouri benefits from an expanded economy and improved quality of life. Northwest even benefits the state government, in the form of increased tax revenues and public sector savings.

This study investigates the economic impacts Northwest creates in the regional business community, and the benefits that the University generates in the state in return for the investments made by its key stakeholder groups—students, society, and taxpayers. We present two types of analyses in turn below: a regional economic impact analysis and an investment analysis.
Northwest serves a unique service area crossing four states and consisting of 79 counties, an area known as the “Green and White Circle.” In that area, Northwest creates revenue through its direct expenditures, students, and visitors. There are additional expenditures from regional businesses whose economic activity increases as a result of the direct expenditures of the University, its students, and its visitors. Northwest serves as an employer and buyer of goods and services for its general operations. Its reputation and activities attract students and visitors from outside the Green and White Circle, whose expenditures benefit regional vendors. In addition, Northwest is a primary source of education to regional residents and suppliers of trained workers to the regional industry, increasing overall productivity in the Green and White Circle workforce.

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

The regional economic impact analysis examines the impact of Northwest on the regional business community through increased consumer spending and enhanced business productivity. Results are measured in terms of added regional income, which it may be helpful to realize in this context is equivalent to the commonly referred to measure of Gross Regional Product. Also reported are the corresponding number of created jobs.

The economic impacts are organized as follows: (1) impact of the University’s day-to-day operations; (2) impact of the spending of out-of-region students; (3) impact of the spending of out-of-region visitors, and; (4) impact of the human capital from former students employed in the regional workforce. These impacts represent new economic activity created in the regional economy solely attributable to Northwest.*

**OPERATIONS SPENDING IMPACT**

Northwest is an important employer in the Green and White Circle. The University employed 747 full-time and part-time faculty and staff in FY14. Of these, 100 percent lived in the Green and White Circle. Total payroll at the University was $55.3 million, much of which was spent in the region for groceries, eating out, clothing, and other household expenses. In addition, Northwest is a large-scale buyer of goods and services. In FY14 the University spent $47.4 million to cover its general expenses for facilities, professional services, and supplies.

This initial round of spending creates more spending across other businesses throughout the regional economy, resulting in the commonly referred to multiplier effects. We also apply a downward adjustment to account for funding that the University received from state and local sources that could have been spent elsewhere in the region and created

*Note: Our estimated economic impacts are conservative in that we directly take into account the fact that state and local dollars spent on the University could have been spent elsewhere in the Green and White Circle if not directed toward Northwest, and thus would have created some economic impacts regardless. We account for these alternative uses of funds directly in our analysis by (i) assuming that if funds were not directed to Northwest, they would have been returned to the taxpayer and generate economic impacts through household spending on goods and services, and (ii) subtracting the estimated economic impacts generated by this alternative use of funds from the estimated economic impacts of Northwest. Thus, we report a net impact of Northwest that is above and beyond what would have occurred had the funds been returned to the taxpayer.
impacts even if not directed towards Northwest. We term this an alternative use of funds and account for it by estimating the impacts that would have been created from the alternative spending and subtracting the alternative impacts from the spending impact of Northwest.

The net added regional income that Northwest created during FY14 as a result of its day-to-day operations was approximately $91 million in added regional income, equivalent to creating 1,225 jobs.

**STUDENT SPENDING IMPACT**

Around 26 percent of graduate and undergraduate students at Northwest originated from outside the region in FY14. Some of these students would not have come to the region if the University did not exist. While attending, these students spent $13.1 million to purchase groceries, pay rent, pay for transportation, and so on. A significant portion of these expenditures occurred in the region, generating $9.1 million in new income in the regional economy during the analysis year, which is equivalent to creating 188 new jobs.

**VISITOR SPENDING IMPACT**

Thousands of visitors from outside the region were attracted to Northwest during the analysis year to attend commencements, sports events, 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 these out-of-region visitors generated a net impact of $1 million in new income for the regional economy in FY14, equivalent to creating 27 new jobs.

**HUMAN CAPITAL IMPACT**

The education and training Northwest provides for residents result in the greatest impact. Since established, students have studied at Northwest and entered the workforce with new skills. With an estimated 69 percent of former students remaining in the Green and White Circle, thousands of former students who attended Northwest are currently employed in the Green and White Circle.

During the analysis year, former students of Northwest generated $516.4 million in added income in the region, which is equivalent to creating 8,025 new jobs. This figure represents the higher wages that former students earned during the year as a result of attending Northwest, the increased output of the businesses that employed the former students, and the multiplier effects that occurred as former students and their employers who spent money at other businesses.
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.

Northwest received a total of $105.4 million in FY14. Tuition and fees comprised 35 percent of total revenue, 39 percent from state and federal government sources, and all other revenue comprised the remaining 26 percent. This study considers Northwest as an investment from the perspectives of those who provided these revenues - students, society, and taxpayers. The backdrop for the analysis is the entire Missouri economy.

In FY14, Northwest served an unduplicated headcount of 7,765 students taking courses for credit towards a degree. In order to attend college, 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 college. The total investment made by Northwest students in FY14 amounted to $127 million, equal to $39.4 million in out-of-pocket expenses plus $87.6 million in forgone time and money.

In return for their investment, students will receive a stream of higher future wages that will continue to grow through their working lives. As shown in Figure 1, mean income levels at the midpoint of the average-aged worker’s career increase as people achieve higher levels of education. For example, the average bachelor’s degree completer from Northwest will earn $22,200 more per year compared to someone with a high school diploma or equivalent. Over a working lifetime, this difference amounts to an undiscounted value of approximately $1 million in higher income.

**FIGURE 1. ANNUAL INCOME BY EDUCATION LEVEL AT CAREER MIDPOINT IN MISSOURI**

Source: EMSI complete employment data.
The present value of the higher future wages that students attending Northwest will receive over their working careers is $451.5 million. Dividing this value by the $127 million in student costs yields a benefit-cost ratio of 3.6. In other words, for every $1 students invest in Northwest in the form of out-of-pocket expenses and forgone time and money, they receive a cumulative of $3.60 in higher future wages. The average annual rate of return for students is 13.9 percent. This is an impressive return compared, for example, to the less than 1 percent return per annum that is generally expected from saving money in today’s standard bank savings accounts.

**SOCIETAL PERSPECTIVE**

Missouri benefits from the presence of Northwest in two major ways. The first and largest benefit that it receives is the added income created in the state. As discussed in the previous section, students earn more because of the skills they acquire while attending Northwest. Businesses also earn more because the enhanced skills of students make them more productive. Together, higher student wages and increased business output stimulate increases in income across the state, thereby raising prosperity in Missouri and expanding the economic base for the citizenry as a whole.

Benefits also include the savings generated by the improved lifestyles of students. Education is statistically correlated with a variety of lifestyle changes that generate social savings across three main categories: 1) health, 2) crime, and 3) unemployment. Health savings include avoided medical costs associated with smoking, alcoholism, obesity, drug abuse, and mental disorders. Crime savings include reduced security expenditure and insurance administration, lower victim costs, and reduced criminal justice system expenditures. Unemployment savings include the reduced demand for income assistance and welfare benefits.

Figure 2 shows the present value of the added income and social savings that will occur in Missouri over the working lifetimes of Northwest’s FY14 students. Added income amounts to a present value of $977 million due to the increased lifetime incomes of students and associated increases in business output. Social savings amount to $219.2 million, the sum of health, crime, and unemployment savings in Missouri. Altogether, total societal benefits to Missouri equal $1.2 billion (in present value terms).

Investment in Northwest during the analysis year totaled $193.1 million. This includes all expenditures by the University, all student expenditures, and all student opportunity costs. For every dollar
of this investment, Missouri will receive a cumulative value of $6.20 in benefits, equal to the $1.2 billion in benefits divided by the $193.1 million in costs. These benefits will occur for as long as Northwest’s FY14 students remain employed in the state workforce.

**TAXPAYER PERSPECTIVE**

From the taxpayer perspective, benefits consist primarily of the taxes that state government will collect from the added income created in the state. As Northwest’s FY14 students earn more, they will make higher tax payments. Employers will also make higher tax payments as they increase their output and purchase more supplies and services. By the end of the students’ working careers, state government will have collected a present value of $87.4 million in added taxes.

A portion of the savings enjoyed by society also accrues to state taxpayers. Students are more employable, so the demand for welfare and unemployment benefits reduces. Improved health habits lower the students’ demand for public health care services. Students are also less likely to commit crimes, so the demand for law enforcement services reduces. All of these benefits will generate a present value of $34.3 million in savings to state taxpayers.

Total benefits to taxpayers equal $121.7 million, equal to the sum of the added taxes and public sector savings. Comparing this to the taxpayer costs of $30.5 million—equal to the funding that Northwest received from state government during the analysis year—yields a benefit-cost ratio of 4. This means that for every $1 of public money invested in Northwest, taxpayers receive a cumulative value of $4 over the course of the students’ working lives. The average annual rate of return is 11.3 percent, a solid investment that compares favorably with other long-term investments in both the private and public sectors.

Since 1982, Northwest has contributed to the health of its community by using alternative and sustainable energy sources on-campus. Today, 58 percent of its total energy consumption and 88 percent of its heating needs are powered by sustainable sources, including paper waste, wood chips, and even animal waste. Over 25 years, Northwest has realized $12.5 million in savings by using these fuel sources, funds which were then reused in education programs. Northwest ranked among the top five energy-reducing schools in the 2013 Campus Conservation Nationals. The University’s commitment to recycling and the use of alternative fuels also led to it winning the 2011, 2013, and 2014 Annual Recycling Award from the Missouri State Recycling Program.
Table 2 presents the results of the investment analysis for all three of Northwest’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 taxpayers creates a wide range of benefits to Missouri and returns more to government budgets than it costs.

### Table 2. Summary of Investment Analysis Results

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Benefits (thousands)</th>
<th>Costs (thousands)</th>
<th>Net Present Value (thousands)</th>
<th>Benefit-Cost Ratio</th>
<th>Rate of Return</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Perspective</strong></td>
<td>$451,522</td>
<td>$127,044</td>
<td>$324,478</td>
<td>3.6</td>
<td>13.9%</td>
</tr>
<tr>
<td><strong>Societal Perspective</strong></td>
<td>$1,196,198</td>
<td>$193,124</td>
<td>$1,003,074</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Taxpayer Perspective</strong></td>
<td>$121,731</td>
<td>$30,454</td>
<td>$91,276</td>
<td>4.0</td>
<td>11.3%</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.
The results of this study demonstrate that Northwest 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 into the workforce. It enriches the lives of students by raising their lifetime incomes, helping them achieve their individual potential, and providing for a more meaningful life. It benefits Missouri as a whole by creating a more prosperous economy and generating a variety of savings through the improved lifestyles of students. Finally, it benefits state taxpayers through increased tax receipts across the state and through a reduced demand for government-supported social services.

ABOUT THE STUDY

Data and assumptions used in the study are based on several sources, including the FY14 academic and financial reports from the University, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of EMSI’s Social Accounting Matrix (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 copy of the full report, including a description of the data and methods used, please contact Northwest at 1-660-562-1212.

ABOUT EMSI

Economic Modeling Specialists International (EMSI) turns labor market data into useful information that helps organizations understand the connection between economies, people, and work. Since 2000, EMSI has completed numerous economic impact studies for educational institutions across the U.S., Canada, the U.K., and Australia. It also provides industry-leading labor market data via software and reports to higher education professionals, workforce planners, and regional developers in the U.S. and internationally. For more information, visit www.economicmodeling.com.