

NOV  
2015

The  
**ECONOMIC  
VALUE** of  
**IDAHO  
PUBLIC  
UNIVERSITIES**

Executive Summary

Analysis of the Economic Impact &  
Return on Investment of Education

University of Idaho



Idaho State  
UNIVERSITY



# EXECUTIVE SUMMARY

*Idaho public universities create value in a variety of ways. The universities improve higher education delivery throughout the state and help students increase their employability and potential. The universities facilitate new research and company developments and also draw visitors to the state, generating new dollars and opportunities for Idaho.*

Idaho public universities influence both the lives of students and also the state economy. The universities serve a range of industries in Idaho, support state businesses, and benefit society as a whole in Idaho from an expanded economy and improved quality of life. The benefits created by Idaho public universities 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 Idaho public universities on the business community and the benefits that the universities generate in return for the investments made by their key

stakeholder groups—students, taxpayers, and society. The following two analyses are presented:

- **Economic impact analysis**
- **Investment analysis.**

All results reflect student and financial data for Fiscal Year (FY) 2013-14. Impacts on the state business community are reported under the economic impact analysis, and 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.

# ECONOMIC IMPACT ANALYSIS

*Idaho public universities promote economic growth in Idaho through their direct expenditures and resulting expenditures of students, visitors, and state businesses. The universities serve as employers and buyers of goods and services for their general and research operations. Numerous start-up and spin-off companies have formed through programs and knowledge at Idaho public universities. The universities' reputation and activities attract students and visitors from outside Idaho, whose expenditures benefit state vendors. In addition, Idaho public universities are primary sources of education to Idaho residents and suppliers of trained workers to the state industry, increasing overall productivity in the state workforce.*

The state economic impact analysis examines the impact of Idaho public universities on the state business community through increased consumer spending and enhanced business productivity. Results are measured in terms of gross state product (GSP) and are organized according to the following impacts: (1) impact of the universities' day-to-day operations; (2) impact of research expenditures; (3) impact of start-up and spin-off companies; (4) impact of the spending of students; (5) impact of the spending of out-of-state visitors, and; (6) impact of the increased productivity of former students employed in the state workforce.

## OPERATIONS SPENDING IMPACT

Idaho public universities are important employers in Idaho. In FY 2013-14, the universities employed **8,870** full-time and part-time faculty and staff. Of these, 94% lived in Idaho. Total payroll at Idaho public universities was **\$527.3 million** (less research activities), much of which was spent in the state for groceries, eating out, clothing, and other household expenses. In addition,

Idaho public universities are themselves large-scale buyers of goods and services. In FY 2013-14 the universities spent **\$332.3 million** (less research activities) to cover their expenses for facilities, professional services, and supplies.

Idaho public universities added **\$636.4 million** in GSP to the state during the analysis year as a result of their day-to-day operations. This figure represents the universities' payroll, the multiplier effects generated by the spending of the universities and their employees, and a downward adjustment to account for funding that the universities 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, Idaho public universities received 189 invention disclosures, filed 139 new US patent applications, and produced 127 licenses. Total license income over the

same four-year time period grew from \$290.5 thousand in 2010-11 to \$1.4 million in FY 2013-14, an approximate **\$1.1 million** increase.

In FY 2013-14, Idaho public universities spent \$56.7 million on payroll to support research activities, creating a net total of **\$98.2 million** in GSP for the state economy.

## START-UP AND SPIN-OFF COMPANY IMPACT

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

In FY 2013-14, Idaho public universities start-up and spin off companies added **\$38.7 million** in GSP to the Idaho economy. Of this GSP, \$9.3 million was due to the start-up companies, with the remainder due to spin-off companies.

## STUDENT SPENDING IMPACT

Around 20% of students attending Idaho public universities originated from outside the state in FY 2013-14. Some of these students relocated to Idaho. These students would not have come to the state if the universities did not exist. In addition, a number of in-state students would have left the state for other educational opportunities if not for the existence of Idaho public universities. While attending the universities, these relocator and retained students spent **\$170.9 million** to purchase groceries, rent accommodation, pay for transportation, and so on. A significant portion of these expenditures occurred in the state, generating **\$102.3 million** in GSP in the state economy during the analysis year.

**Table 1: Research developments created by Idaho public universities**

	INVENTIONS	PATENTS	LICENSES
2010-11	54	34	27
2011-12	53	45	23
2012-13	49	36	37
2013-14	33	24	40
<b>Total</b>	<b>189</b>	<b>139</b>	<b>127</b>

## VISITOR SPENDING IMPACT

Thousands of visitors from outside the state were attracted to Idaho public universities during the analysis year to attend commencement, sports events, and other activities sponsored by the universities. While in the state, visitors spent money for lodging, food, transportation, and other personal expenses. The off-campus expenditures of the universities' out-of-state visitors generated a net impact of **\$10.3 million** in GSP for the state economy in FY 2013-14.

## ALUMNI IMPACT

The education and training Idaho public universities provide for state residents results in the greatest impact. Since the universities were established, students have studied at Idaho public universities and entered the workforce with new skills. Today, thousands of former students are employed in Idaho.

During the analysis year, past and present students of Idaho public universities generated **\$2.4 billion** in GSP for the state. 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

The overall impact of Idaho public universities on the state business community during the analysis year amounted to **\$3.3 billion** in GSP, equal to the sum of the operations spending impact, the research spending impact, the start-up and spin off company impact,

the student spending impact, the visitor spending impact, and the alumni impact. This was equal to approximately **5.7%** of the GSP of Idaho. By comparison, this contribution the universities provide on their own is nearly as large as the entire Idaho Finance & Insurance industry.

**Table 2: GSP created by Idaho public universities in FY 2013-14**

<p><b>Jobs based on income</b></p> <p>These jobs represent full- and part-time jobs that would not have occurred in the state without the universities. They are calculated by jobs to sales ratios specific to each industry. Based on the GSP created by Idaho public universities, the jobs are as follows:</p> <p>Operations spending impact = <b>9,397 jobs</b></p> <p>Research spending impact = <b>1,523 jobs</b></p> <p>Impact of start-up and spin-off companies = <b>600 jobs</b></p> <p>Impact of student spending = <b>2,887 jobs</b></p> <p>Visitor spending impact = <b>305 jobs</b></p> <p>Alumni impact = <b>50,280 jobs</b></p> <p>Overall, the GSP created by Idaho public universities and their students supported <b>64,993 jobs</b>.</p>	<p><b>\$636.4 million</b> Operations spending impact</p> <p><b>\$98.2 million</b> Research spending impact</p> <p><b>\$38.7 million</b> Start-up and spin-off company impact</p> <p><b>\$102.3 million</b> Student spending impact</p> <p><b>\$10.3 million</b> Visitor spending impact</p> <p><b>\$2.4 billion</b> Alumni impact</p> <p><b>\$3.3 billion</b> Total impact</p>
--	--

# 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.

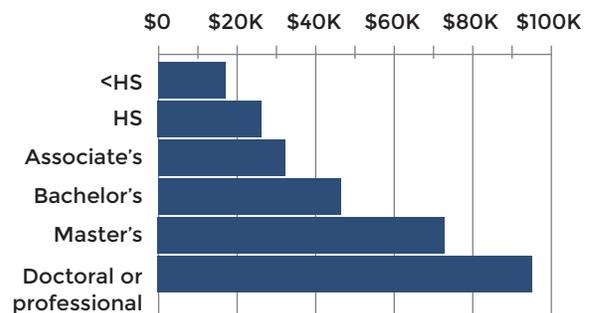
Idaho public universities received a total of \$1 billion in FY 2013-14. Tuition and fees comprised 28% of total revenue, student aid from government sources comprised another 49%, and all other revenue comprised the remaining 23%. This study considers Idaho public universities as an investment from the perspectives of those whom provided these revenues – students, taxpayers, and society. The backdrop for the analysis is the entire Idaho economy.

## STUDENT PERSPECTIVE

In FY 2013-14, Idaho public universities served 61,971 credit students and 7,505 non-credit students. In order to attend the universities, 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 universities. The total investment made by Idaho public universities' students in FY 2013-14 amounted to \$822.1 million, equal to \$280.5 million in out-of-pocket expenses plus \$541.6 million in forgone time and money.

In return for their investment, Idaho public universities' 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 Idaho public universities will see an increase

Figure 1. Annual income by education level at career midpoint in Idaho



in earnings of \$20,100 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 \$818,655 in higher income.

The present value of the higher future wages that Idaho public universities' students will receive over

their working careers is \$2.7 billion. Dividing this value by the \$822.1 million in student costs yields a benefit-cost ratio of 3.3. In other words, for every \$1 students invest in Idaho public universities in the form of out-of-pocket expenses and forgone time and money, they receive a cumulative of \$3.30 in higher future wages. The average annual rate of return for students is 14.0%. This is an impressive return compared, for example, to the less than 1% return per annum that is generally expected from saving money in today's standard bank savings accounts.

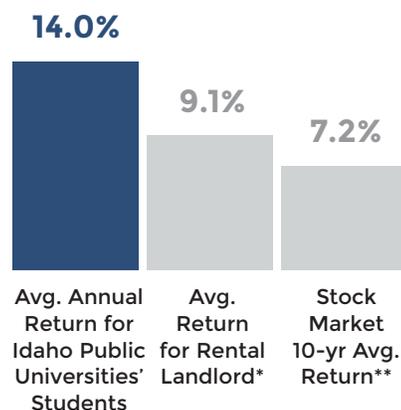
## TAXPAYER PERSPECTIVE

Idaho public universities generate more in tax revenue than they take. These benefits to taxpayers consist primarily of taxes that the state and local government will collect from the added income created in the state. As Idaho public universities' 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 2013-14 students' working careers, the state and local government will have collected a present value of \$685.1 million 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). In addition, students are more employable, so the demand for welfare and unemployment benefits, such as income assistance and welfare benefits, is reduced. All of these benefits will generate a present value of \$251.8 million in savings to state and local taxpayers.

Total benefits to taxpayers equal \$936.9 million, equal to the sum of the added taxes and public sector savings. Comparing this to the taxpayer costs of

Figure 2. Student rate of return



\*RealityTrac's Q3 2014 study of 586 counties nationwide.

\*\*Forbes's S&P 500 (compounded annualized) avg. return, 1994-2014.

\$329.2 million—equal to the funding that Idaho public universities received from the state and local government during the analysis year—yields a benefit-cost ratio of 2.8. This means that for every \$1 of public money invested in Idaho public universities, taxpayers receive a cumulative value of \$2.80 over the course of the students' working lives. The average annual rate of return is 9.9%, a solid investment that compares favorably with other long-term investments in both the private and public sectors.

## SOCIAL PERSPECTIVE

Society as a whole within Idaho benefits from the presence of Idaho public universities in two major ways. The first and largest benefit that society 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 Idaho public universities. 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 Idaho and expanding 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. 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.

Figure 3 shows the present value of the added income and social savings that will occur in Idaho over the working lifetime of the 2013-14 student population at Idaho public universities. Added income amounts to a present value of \$6.4 billion due to the increased lifetime incomes of students and associated increases in business output. Social savings amount to \$1.4 billion, the sum of health, crime, and unemployment savings in Idaho. Altogether, total benefits to society equal \$7.8 billion (in present value terms).

Society invested \$1.5 billion in Idaho public universities educations during the analysis year. This includes all expenditures by Idaho public universities, all student expenditures, and all student opportunity costs. For every dollar of this investment, society as a whole in Idaho will receive a cumulative value of \$5.10 in benefits, equal to the \$7.8 billion in benefits divided by the \$1.5 billion in costs. These benefits will occur for as long as Idaho public universities' 2013-14 students remain employed in the state workforce.

## SUMMARY OF INVESTMENT ANALYSIS RESULTS

Table 3 presents the results of the investment analysis for all three of Idaho public universities' major stakeholder groups—students, taxpayers, and society. As shown, students receive great value for their educational investment. At the same time, the investment made by state and local taxpayers to the universities creates a wide range of benefits to society and returns more to government budgets than it costs.

Figure 3. Present value of added income and social savings in Idaho

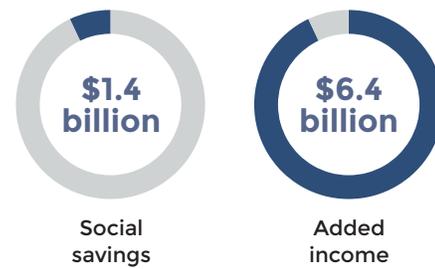


Table 3: Summary of investment analysis results

STUDENT PERSPECTIVE	
\$2,686,688	Benefits (thousands)
\$822,142	Costs (thousands)
<b>\$1,864,545</b>	Net present value (thousands)
<b>3.3</b>	Benefit-cost ratio
<b>14.0%</b>	Rate of return
TAXPAYER PERSPECTIVE	
\$936,940	Benefits (thousands)
\$329,200	Costs (thousands)
<b>\$607,740</b>	Net present value (thousands)
<b>2.8</b>	Benefit-cost ratio
<b>9.9%</b>	Rate of return
SOCIAL PERSPECTIVE	
\$7,771,419	Benefits (thousands)
\$1,516,204	Costs (thousands)
<b>\$6,255,215</b>	Net present value (thousands)
<b>5.1</b>	Benefit-cost ratio
<b>NA</b>	Rate of return*

\* 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

*The results of this study demonstrate that Idaho public universities create value from multiple perspectives. The universities benefit local businesses by increasing consumer spending in the state and supplying a steady flow of qualified, trained workers into the workforce. They enrich the lives of students by raising their lifetime incomes and helping them achieve their individual potential. They benefit state and local taxpayers through increased tax receipts across the state and a reduced demand for government-supported social services. Finally, they benefit society as a whole in Idaho 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 2013-14 academic and financial reports from Idaho public universities, 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 full description of the data and approach used in the study, please contact the Idaho State Board of Education for a copy of the technical report.

## ABOUT EMSI

Economic Modeling Specialists International, a Career-Builder company, is a leading provider of economic impact studies and labor market data to educational universities, workforce planners, and regional developers in the U.S. and internationally. Since 2000, EMSI has completed over 1,200 economic impact studies for educational universities in four countries. Visit [www.economicmodeling.com](http://www.economicmodeling.com) for more information about EMSI's products and services.