

University  
of Idaho

*The*  
**ECONOMIC  
VALUE** *of the*  
**UNIVERSITY  
OF IDAHO**

Executive Summary

*Analysis of the Economic  
Impact & Return on  
Investment of  
Education*

OCT  
2015



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# EXECUTIVE SUMMARY

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

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

This study investigates the economic impacts created by UI on the business community and the benefits that the university generates 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.



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# ECONOMIC IMPACT ANALYSIS

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UI promotes economic growth in Idaho through its direct expenditures and resulting expenditures of students, visitors, and state 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 UI. The university's reputation and activities attract students and visitors from outside Idaho, whose expenditures benefit state vendors. In addition, UI is a primary source of education to Idaho residents and a supplier of trained workers to the Idaho industry, increasing overall productivity in the state workforce.



The state economic impact analysis examines the impact of UI 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 university’s 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

UI is an important employer in Idaho. In FY 2013-14, the university employed 3,067 full-time and part-time faculty and staff. Of these, 90% lived in Idaho. Total payroll at UI was \$166.5 million (less research activities), much of which was spent in the state for groceries, eating out, clothing, and other household expenses. In addition, UI is a large-scale buyer of goods and services. In FY 2013-14 the university spent \$106.1 million (less research activities) to cover its expenses for facilities, professional services, and supplies.

UI added \$200.5 million in GSP to the state during the analysis year as a result of its day-to-day operations. 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 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, UI received 89 invention disclosures, filed 83 new US patent applications, and produced 29 licenses. Total license income over the same four-year time period grew from \$290 thousand in 2010-11 to \$1.4 million

Table 1: Research Developments created by UI

	INVENTIONS	PATENTS	LICENSES
2010-11	28	25	8
2011-12	28	27	6
2012-13	16	16	8
2013-14	17	15	7
<b>Total</b>	<b>89</b>	<b>83</b>	<b>29</b>

in FY 2013-14, an approximate \$1.1 million increase. In FY 2013-14, UI spent \$46.5 million on payroll to support research activities, creating a net total of \$77.7 million in GSP for the state economy.

## START-UP AND SPIN-OFF COMPANY IMPACT

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

In FY 2013-14, UI start-up and spin off companies added \$35.3 million in GSP to the Idaho economy. Of this GSP, \$6.3 million was due to the start-up companies, with the remainder due to spin-off companies.

## STUDENT SPENDING IMPACT

Around 30% of students attending UI 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 university did not exist. In addition, a number of in-state students would have left the state for other education opportunities if not for the existence of UI. While attending the university, these relocators and retained students spent \$57.1 million to purchase groceries, rent accommodation, pay for transportation, and so on. A significant portion of these expenditures occurred in the state, generating \$31.2 million in GSP in the state economy during the analysis year.

## VISITOR SPENDING IMPACT

Thousands of visitors from outside the state were attracted to UI during the analysis year to attend commencement, sports events, and other activities

## Jobs based on income

These jobs represent full- and part-time jobs that would not have occurred in the state without the university. They are calculated by jobs to sales ratios specific to each industry. Based on the GSP created by UI, the jobs are as follows:

Operations spending impact =  
**2,835 jobs**

Research spending impact =  
**1,188 jobs**

Impact of start-up & spin-off companies =  
**548 jobs**

Impact of student spending =  
**898 jobs**

Visitor spending impact =  
**152 jobs**

Alumni impact =  
**16,567 jobs**

Overall, the GSP created by UI and its students supported 22,188 jobs.



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 \$5.1 million in GSP for the state economy in FY 2013-14.

## ALUMNI IMPACT

The education and training UI provides for state residents results in the greatest impact. Since the university was established, students have studied at UI 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 UI generated \$782 million 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 UI on the state business community during the analysis year amounted to \$1.1 billion 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 1.9% of the GSP of Idaho. By comparison, this contribution the university provides on its own is slightly larger than the Utilities industry in the state.

Table 2: GSP created by UI in FY 2013-14

<p><b>\$200.5 million</b> Operations spending impact</p>
<p><b>\$77.7 million</b> Research spending impact</p>
<p><b>\$35.3 million</b> Start-up and spin-off company impact</p>
<p><b>\$31.2 million</b> Student spending impact</p>
<p><b>\$5.1 million</b> Visitor spending impact</p>
<p><b>\$782 million</b> Alumni impact</p>
<p><b>\$1.1 billion</b> Total impact</p>

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# INVESTMENT ANALYSIS

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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.

UI received a total of \$386.1 million in FY 2013-14. Tuition and fees comprised 22% of total revenue, student aid from government sources comprised another 56%, and all other revenue comprised the remaining 22%. This study considers UI 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

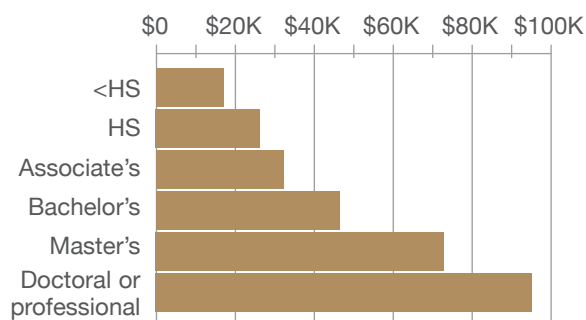
In 2013-14, UI served 14,039 credit students and 2,197 non-credit students. In order to attend the university, students paid for tuition, fees, books, and supplies. They also gave up money that they would have otherwise earned had they been working instead of attending the university. The total investment made by UI's students in FY 2013-14 amounted to \$262.6 million, equal to \$95.5 million in out-of-pocket expenses plus \$167.1 million in forgone time and money.

In return for their investment, UI's students will receive a stream of higher future wages that will continue to grow through their working lives. As shown in Figure 1 on the next page, 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 UI will see an increase 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 \$844,200 in higher income.

The present value of the higher future wages that UI's students will receive over their working careers is \$871.1 million. Dividing this value by the \$262.6 million in student costs yields a benefit-cost ratio of 3.3. In other words, for every \$1 students invest in UI in the form of out-of-pocket expenses and forgone time and money, they receive a cumulative of \$3.30

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



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

UI 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 income created in the state. As UI 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 government will have collected a present value of \$226.7 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. For a list of study refer-

ences 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 \$86.2 million in savings to state taxpayers.

Total benefits to taxpayers equal \$312.9 million, equal to the sum of the added taxes and public sector savings. Comparing this to the taxpayer costs of \$128.8 million—equal to the funding that UI received from the state government during the analysis year—yields a benefit-cost ratio of 2.4. This means that for every \$1 of public money invested in UI, taxpayers receive a cumulative value of \$2.40 over the course of the students' working lives. The average annual rate of return is 8.2%, a solid investment that compares favorably with other long-term investments in both the private and public sectors.

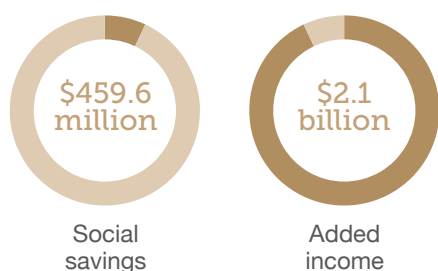
### SOCIAL PERSPECTIVE

Society as a whole within Idaho benefits from the presence of UI 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 UI. 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 that generate social savings across three main categories: 1) health, 2) crime, and 3) unemployment. 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



Figure 2. Present value of added income and social savings in Idaho (thousands)



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 2 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 UI. Added income amounts to a present value of \$2.1 billion due to the increased lifetime incomes of students and associated increases in business output. Social savings amount to \$459.6 million, the sum of health, crime, and unemployment savings in Idaho. Altogether, total benefits to society equal \$2.5 billion (in present value terms).

Society invested \$547.4 million in UI educations during the analysis year. This includes all expenditures by UI, 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 \$4.60 in benefits, equal to the \$2.5 billion in benefits divided by the \$547.4 million in costs. These benefits will occur for as long as UI's 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 UI's 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 taxpayers to the university creates a wide range of benefits to society and returns more to government budgets than it costs.

Table 3: Summary of investment analysis results

STUDENT PERSPECTIVE	
\$871,125	Benefits (thousands)
\$262,553	Costs (thousands)
<b>\$608,572</b>	<b>Net present value (thousands)</b>
3.3	Benefit-cost ratio
14.0%	Rate of return
TAXPAYER PERSPECTIVE	
\$312,920	Benefits (thousands)
\$128,754	Costs (thousands)
<b>\$184,167</b>	<b>Net present value (thousands)</b>
2.4	Benefit-cost ratio
8.2%	Rate of return
SOCIAL PERSPECTIVE	
\$2,536,123	Benefits (thousands)
\$547,356	Costs (thousands)
<b>\$1,988,767</b>	<b>Net present value (thousands)</b>
4.6	Benefit-cost ratio
NA	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.

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# CONCLUSION

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The results of this study demonstrate that UI creates value from multiple perspectives. The university benefits local 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 and helping them achieve their individual potential. It benefits state 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 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 UI, 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 UI for a copy of the technical report.

## ABOUT EMSI

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