



Analysis of the Economic Impact and Return on Investment of Education

The Economic Value of the University of Illinois Urbana-Champaign



THE UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN (UIUC) creates value in many ways. Since its founding in 1867, UIUC has earned a reputation as a world-class leader in research, teaching, and public engagement. The university plays a key role in helping students increase their employability and achieve their individual potential. UIUC facilitates new research and company developments and also draws visitors and students to the state, generating new dollars and opportunities for Illinois. UIUC provides students with the education, training, and skills they need to have fulfilling and prosperous careers. With UIUC’s land-grant heritage as a foundation, it pioneers innovative research that tackles global problems and expands the human experience. UIUC’s transformative learning experiences, in and out of the classroom, are designed to produce alumni who desire to make a significant, societal impact.

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

This study measures the economic impacts created by UIUC 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 UIUC employee, student, and financial data, provided by the University of Illinois System, for fiscal year (FY21) (July 1, 2020 through June 30, 2021). Impacts on the Illinois 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 Illinois are reported under the investment analysis.



ILLINOIS

UIUC influences both the **lives of its students** and the **state economy**.



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

Operations spending impact



UIUC adds economic value to Illinois as an employer of state residents and a large-scale buyer of goods and services. In FY21, the university employed 15,144 full-time and part-time faculty and staff (excluding research employees), 97% of whom lived in Illinois. Total payroll at UIUC was \$1.8 billion (excluding payroll from research employees), much of which was spent in the state for groceries, mortgage and rent payments, dining out, and other household expenses. In addition, the university spent \$447.3 million on day-to-day expenses related to facilities, supplies, and professional services (excluding research expenditures).

UIUC's day-to-day operations spending added \$2.1 billion in income to the state during the analysis year. This figure represents the university's payroll, the multiplier effects generated by the in-state spending of the university and its employees, and a downward adjustment to account for funding that the university received from state sources. The \$2.1 billion in added income is equivalent to supporting 17,972 jobs in the state.

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, UIUC received 855 invention disclosures, filed 866 new patent applications, and produced 209 licenses.

In FY21, UIUC spent \$339.5 million on payroll to support research activities. This, along with \$391.8 million in other research spending, created a net total of \$844.2 million in added income for the state economy. This added income is equivalent to supporting 7,886 jobs.




UIUC RESEARCH DEVELOPMENTS


Fiscal year	Inventions	Patents	Licenses
FY 18	201	240	45
FY 19	228	209	43
FY 20	215	201	60
FY21	211	216	61
Total	855	866	209

Source: U of I System.

Construction spending impact


 UIUC invests in construction 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 state economy. In FY21, UIUC’s construction spending generated \$95.6 million in added income, which is equivalent to supporting 1,104 jobs.

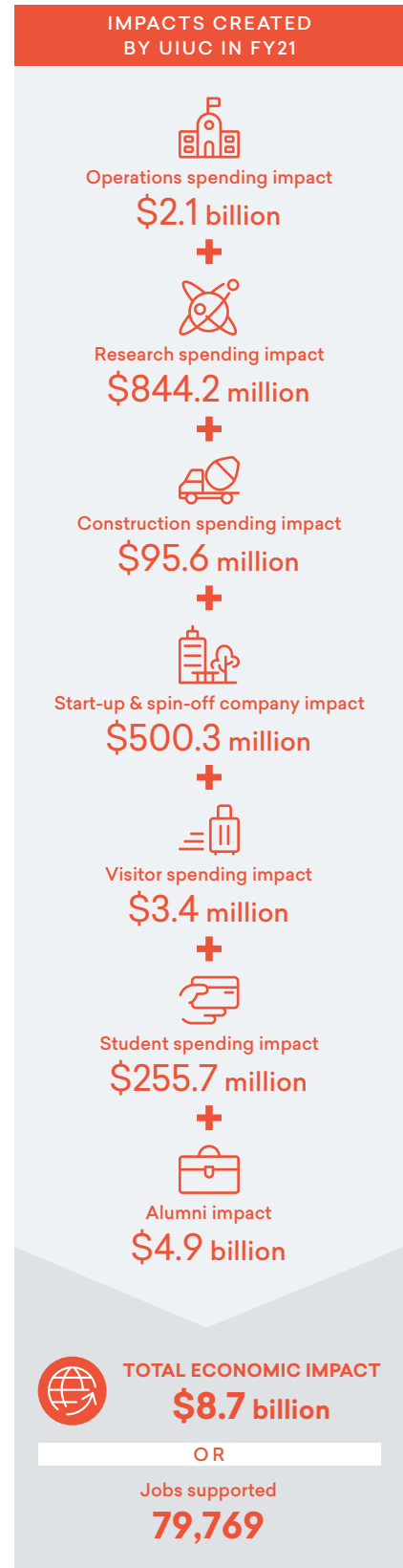
Start-up and spin-off company impact

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

In FY21, UIUC start-up and spin-off companies added \$500.3 million in income to the Illinois economy, which is equivalent to supporting 2,652 jobs. Of this added income, \$278.1 million was due to the start-up companies, with the remainder due to spin-off companies.

Visitor spending impact

 Typically, UIUC hosts thousands of out-of-state visitors for on-campus events. UIUC, its partners, and affiliations bring national and internationally renowned speakers and entertainers to the state. In addition, UIUC attracts visitors for commencement, cultural, and sporting events. It is important to remind the reader of the restrictions imposed by the COVID-19 pandemic and its strong influence on the number of visitors during FY21. 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 \$3.4 million in added income for the state economy in FY21. This \$3.4 million in added income is equivalent to supporting 62 jobs.



Student spending impact



Around 44% of students attending UIUC originated from outside the state in FY21, and some of these students relocated to Illinois to attend UIUC. These students may not have come to the state if the university did not exist. In addition, some in-state students, referred to as retained students, would have left Illinois if not for the existence of UIUC. While attending the university, these relocated and retained students spent money on groceries, accommodation, transportation, and other household expenses. This spending generated \$255.7 million in added income for the state economy in FY21, which supported 4,181 jobs in Illinois.

Alumni impact



The education and training UIUC provides for state residents has the greatest impact. Since its establishment, students have studied at UIUC and entered the state workforce with greater knowledge and new skills. Today, thousands of former UIUC students are employed in Illinois. As a result of their education from UIUC, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY21, UIUC alumni generated \$4.9 billion in added income for the state economy, which is equivalent to supporting 45,913 jobs.

Total impact

UIUC added \$8.7 billion in income to the Illinois economy during the analysis year, equal to the sum of the operations, research, and construction spending impacts, the start-up and spin-off company impact, the visitor and student spending impacts, and the alumni impact. For context, the \$8.7 billion impact was equal to approximately 1.0% of the total gross state product (GSP) of Illinois.

UIUC's total impact can also be expressed in terms of jobs supported. The \$8.7 billion impact supported 79,769 state jobs, using the jobs-to-sales ratios specific to each industry in the state. This means that one out of every 94 jobs in Illinois is supported by the activities of UIUC and its students. In addition, the \$8.7 billion, or 79,769 supported jobs, stemmed from different industry sectors. Among non-education industry sectors, UIUC's spending and alumni in the Professional & Technical Services industry sector supported 10,302 jobs in FY21. If the university did not exist, these impacts would not have been generated in Illinois.

UIUC IMPACTS BY INDUSTRY (JOBS SUPPORTED)



One out of every 94 jobs in Illinois is supported by the activities of UIUC and its students.

Note

Added income should not be confused with personal income or sales. It is important to bear in mind that much of this sales revenue leaves the state economy through intermediary transactions and costs, whereas income remains in the state and is synonymous to value added or gross state product.



An investment analysis evaluates the costs associated with a proposed venture against its expected benefits. If the benefits outweigh the costs, then the investment is financially worthwhile. The analysis presented here considers UIUC as an investment from the perspectives of students, taxpayers, and society in Illinois.

Student perspective



In FY21, UIUC served 59,691 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 UIUC's students in FY21 amounted to a present value of \$1.6 billion, equal to \$870.8 million in out-of-pocket expenses (including future principal and interest on student loans) and \$741.2 million in forgone time and money.

In return for their investment, UIUC's students will receive a stream of higher future earnings that will continue to grow throughout their working lives. For example, the average UIUC bachelor's degree graduate from FY21 will see annual earnings that are \$31,900 higher than a person with a high school diploma or equivalent working in Illinois. Over a working lifetime, the benefits of the bachelor's degree over a high school diploma will amount to an undiscounted value of \$1.4 million in higher earnings per graduate. The present value of the cumulative higher future earnings that UIUC's FY21 students will receive over their working careers is \$7.7 billion.

The students' benefit-cost ratio is 4.8. In other words, for every dollar students invest in UIUC 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.

STUDENTS SEE A HIGH RATE OF RETURN FOR THEIR INVESTMENT IN UIUC



Average annual return for UIUC students

14.9%



Stock market 30-year average annual return

10.5%

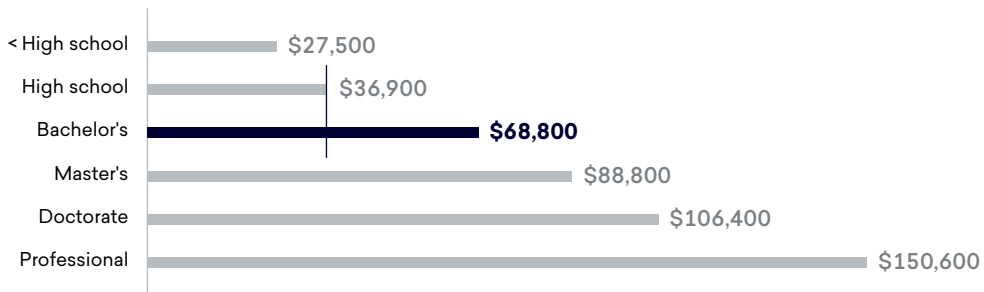


Interest earned on savings account (National Rate Cap)

0.8%

Source: Forbes' S&P 500, 1992-2021. FDIC.gov, 2-2022.

The average bachelor's degree graduate from UIUC will see an increase in earnings of **\$31,900** each year compared to a person with a high school diploma or equivalent working in Illinois.



Source: Emsi Burning Glass employment data.

Annually, the students' investment in UIUC has an average annual internal rate of return of 14.9%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 10.5%.

Taxpayer perspective



UIUC 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 UIUC students will earn more, they will make higher tax payments throughout their working lives. Students' employers will also make higher tax payments as they increase their output and purchases of goods and services. By the end of the FY21 students' working lives, the state and local government will have collected a present value of \$2.2 billion in added taxes.

Benefits to taxpayers will also consist of savings generated by the improved lifestyles of UIUC students and the corresponding reduced government services. Education is statistically correlated with a variety of lifestyle changes.

The educations that UIUC students receive will generate savings in three main categories: 1) healthcare, 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. UIUC 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 university for a copy of the main report. Altogether, the present value of the benefits associated with an education from UIUC will generate \$320.6 million in savings to state and local taxpayers.

Total taxpayer benefits amount to \$2.5 billion, the present value sum of the added taxes and public sector savings. Taxpayer costs are \$609.4 million, equal to the funding received from the state for operations, grants, and the normal cost of pensions and benefits for UIUC in FY21. These benefits and costs yield a benefit-cost ratio of 4.1. This means that for every dollar of public money invested in UIUC in FY21, taxpayers will receive a cumulative present value of \$4.10 over the course of the students' working lives.

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Social perspective



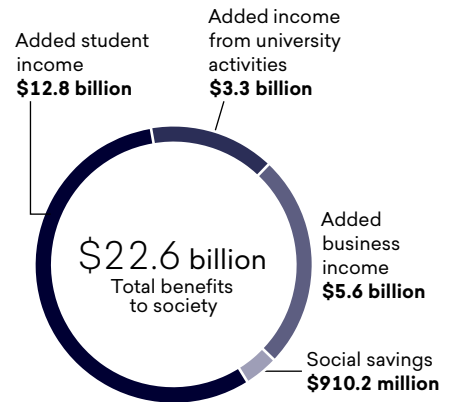
Society as a whole in Illinois benefits from the presence of UIUC in two major ways. Primarily, society benefits from an increased economic base in the state. This is attributed to the added income from students' increased lifetime earnings (added student income) and increased business output (added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

Benefits to society also consist of the savings generated by the improved lifestyles of UIUC 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. Healthcare savings include avoided medical costs associated with smoking, alcohol dependence, obesity, drug 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 university for a copy of the main report.

Altogether, the social benefits of UIUC equal a present value of \$22.6 billion. These benefits include \$12.8 billion in added student income, \$5.6 billion in added business income, \$3.3 billion in added income from university activities, as well as \$910.2 million in social savings related to health, crime, and income assistance in Illinois. People in Illinois invested a present value total of \$4 billion in UIUC in FY21. The cost includes all the university and student costs.

The benefit-cost ratio for society is 5.7, equal to the \$22.6 billion in benefits divided by the \$4 billion in costs. In other words, for every dollar invested in UIUC, people in Illinois will receive a cumulative value of \$5.70 in benefits. The benefits of this investment will occur for as long as UIUC's FY21 students remain employed in the state workforce.

SOCIAL BENEFITS IN ILLINOIS FROM UIUC



Source: Emsi Burning Glass impact model.

Summary of investment analysis results

The results of the analysis demonstrate that UIUC 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 UIUC. At the same time, taxpayers' investment in UIUC returns more to government budgets than it costs and creates a wide range of social benefits throughout Illinois.

STUDENT PERSPECTIVE		TAXPAYER PERSPECTIVE		SOCIAL PERSPECTIVE	
Present value benefits \$7.7 billion		Present value benefits \$2.5 billion		Present value benefits \$22.6 billion	
Present value costs \$1.6 billion		Present value costs \$609.4 million		Present value costs \$4.0 billion	
Net present value \$6.1 billion		Net present value \$1.9 billion		Net present value \$18.7 billion	
Benefit-cost ratio 4.8	Rate of return 14.9%	Benefit-cost ratio 4.1		Benefit-cost ratio 5.7	Rate of return n/a*

* 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 UIUC 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 to the workforce. UIUC 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, UIUC benefits society as a whole in Illinois 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 FY21 academic and financial reports reflecting UIUC from the University of Illinois System, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of Emsi Burning Glass's Multi-Regional Social Accounting Matrix 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 economic impact and investment effectiveness. For a full description of the data and approach used in the study, please contact the university for a copy of the main report.

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Emsi Burning Glass provides colleges and universities with labor market data that help create better outcomes for students, businesses, and communities. Our data, which cover more than 99% of the U.S. workforce, are compiled from a wide variety of government sources, job postings, and online profiles and résumés. Hundreds of institutions use Emsi Burning Glass to align programs with regional needs, drive enrollment, connect students with in-demand careers, track their alumni's employment outcomes, and demonstrate their institution's economic impact on their region. Visit economicmodeling.com/higher-education to learn more or connect with us.