



UNIVERSITY  
OF ILLINOIS  
SYSTEM

Altogether  
Extraordinary™

# EXECUTIVE SUMMARY

JUNE 2022



## Analysis of the Economic Impact and Return on Investment of Education

The Economic Value of the University of Illinois System

**T**HE UNIVERSITY OF ILLINOIS SYSTEM (the U of I System) creates value in many ways. The universities play a key role in helping students increase their employability and achieve their individual potential. The universities facilitate new research and company developments and draw visitors and students to the state, generating new dollars and opportunities for Illinois. The universities provide students with the education, training, and skills they need to have fulfilling and prosperous careers. The U of I System is made up of people who want more. Its innovative, diverse, globally engaged citizens and leaders enrich our culture and society, create prosperity, and serve the public good. New breakthroughs from the U of I System’s universities foster economic growth and solve society’s biggest challenges. Combined, the three universities in Urbana-Champaign, Chicago, and Springfield bring resources, capabilities, and drive that are greater than the sum of their parts—it is altogether extraordinary.

The U of I System’s universities attract the nation’s most talented students with hundreds of undergraduate, graduate and professional programs, many of them ranked among the best in the United States. We are the state’s largest system of higher education, with more than 94,700 students. In addition to our three main campuses, the U of I System has regional campuses, the UI Health hospital and clinics, research facilities, and Extension offices throughout the state. The U of I System also leads the development of the Discovery Partners Institute, an interdisciplinary private-public research institute and hub of the Illinois Innovation Network. The U of I System has carried on its land-grant mission for more than 150 years, making a lasting impact throughout Illinois and beyond the state borders.

The U of I System influences both the lives of students and the state economy. The universities support a variety of industries in Illinois, serve state businesses, and benefit society as a whole in Illinois from an expanded economy and improved quality of life. Additionally, the benefits created by the U of I System extend to the state and local government through increased tax revenues and public sector savings.

This study measures the economic impacts created by the U of I System on the business community and the benefits 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 employee, student, and financial data, provided by the U of I 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

The U of I System influences both the **lives of its students** and the **state economy**.





The U of I System promotes economic growth in Illinois through its direct expenditures and the resulting expenditures of visitors, students, and state businesses. The universities and the system serve as employers and buyers of goods and services for their day-to-day, research, construction, and hospital operations. Numerous start-up and spin-off companies have formed as a result of programs and knowledge at the universities. The universities' reputation and activities attract visitors and students from outside Illinois, whose expenditures benefit state vendors. In addition, the universities are primary sources of higher education to Illinois residents and suppliers of trained workers to state industries, enhancing overall productivity in the state workforce.

## Operations spending impact



The U of I System adds economic value to Illinois as an employer of state residents and a large-scale buyer of goods and services. In FY21, the universities and the System Offices employed 28,669 full-time and part-time faculty and staff (excluding research and hospital employees), 97% of whom lived in Illinois. Total payroll at the U of I System was \$4.3 billion (excluding payroll from research and hospital employees), much of which was spent in the state for groceries, mortgage and rent payments, dining out, and other household expenses. In addition, the universities spent \$1.4 billion on day-to-day expenses related to facilities, supplies, and professional services (excluding research and hospital expenditures).

The U of I System's day-to-day operations spending added \$5.0 billion in income to the state during the analysis year. This figure represents the universities' payroll, the multiplier effects generated by the in-state spending of the universities and their employees, and a downward adjustment to account for funding that the universities received from state sources. The \$5.0 billion in added income is equivalent to supporting 32,585 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, the U of I System received 1,511 invention disclosures, filed 1,282 new patent applications, and produced 391 licenses. Total license income over the same four-year time period grew from \$32.9 million in FY 17 to \$48.5 million in FY21, an approximate \$15.6 million increase.



### 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.

## U OF I SYSTEM RESEARCH DEVELOPMENTS

Fiscal year	Inventions	Patents	Licenses
FY 18	331	366	92
FY 19	427	322	85
FY 20	401	272	108
FY21	352	322	106
<b>Total</b>	<b>1,511</b>	<b>1,282</b>	<b>391</b>

Source: U of I System.

In FY21, the U of I System spent \$560.4 million on payroll to support research activities. This, along with \$605.2 million in other research spending, created a net total of \$1.3 billion in added income for the state economy. This added income is equivalent to supporting 11,489 jobs.

### Research and Innovation—SHIELD

SHIELD Illinois is the U of I System's initiative to make its innovative covidSHIELD saliva-based COVID-19 test available to K-12 schools, colleges and universities, companies, and the public across the state of Illinois.

Developed at the University of Illinois Urbana-Champaign, covidSHIELD requires only a small amount of saliva from an individual and provides results within 24 hours. This quantitative reverse-transcription polymerase chain reaction (PCR) test process uses fewer steps and components than many other processes, avoiding supply chain shortages that have hampered COVID-19 testing worldwide since the beginning of the pandemic.

Regularly testing large numbers of people will decrease cases of COVID-19. The covidSHIELD process was used on the U of I Urbana-Champaign campus to enable in-person learning during FY21. CovidSHIELD was implemented on a large scale and provided quick results, which enabled rapid contact tracing and isolation.

### Hospital spending impact



The University of Illinois Hospital & Health Sciences System (UI Health) provides a hands-on learning and research environment for students and employs thousands of workers. UI Health would not exist without the U of I System. Although broader health-related impacts are outside the scope of this analysis, the hospital is known for providing quality patient care. In FY21, the U of I System spent over \$1.3 billion on hospital operations. These expenditures added a net impact of \$1.6 billion in added income to the state. This is equivalent to supporting 13,637 jobs.

### Construction spending impact



The U of I System invests in construction each year to maintain facilities, create additional capacities, and meet growing educational demands. While the amount varies from year to year, these quick

## IMPACTS CREATED BY THE U OF I SYSTEM IN FY21



Operations spending impact

**\$5.0 billion**



Research spending impact

**\$1.3 billion**



Hospital spending impact

**\$1.6 billion**



Construction spending impact

**\$193.4 million**



Start-up & spin-off company impact

**\$838.0 million**



Visitor spending impact

**\$3.6 million**



Student spending impact

**\$387.2 million**



Alumni impact

**\$9.5 billion**



TOTAL ECONOMIC IMPACT

**\$18.9 billion**

OR

Jobs supported

**164,154**

infusions of income and jobs have a substantial impact on the state economy. In FY21, the U of I System's construction spending generated \$193.4 million in added income, which is equivalent to supporting 2,232 jobs.

## Start-up and spin-off company impact



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

In FY21, U of I System start-up and spin-off companies added \$838.0 million in income to the Illinois economy, which is equivalent to supporting 3,349 jobs. Of this added income, \$615.8 million was due to the start-up companies, with the remainder due to spin-off companies.

## Visitor spending impact



Typically, the U of I System universities host thousands of out-of-state visitors for on-campus events. The U of I System, its partners, and affiliations bring national and internationally renowned speakers and entertainers to the state. In addition, the U of I System 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 universities' out-of-state visitors generated a net impact of \$3.6 million in added income for the state economy in FY21. This \$3.6 million in added income is equivalent to supporting 65 jobs.

## Student spending impact



Around 33% of students attending the U of I System originated from outside the state in FY21, and some of these students relocated to Illinois to attend the universities. These students may not have come to the state if the universities did not exist. In addition, some in-state students, referred to as retained students, would have left Illinois if not for the existence of the U of I System. While attending the universities, these relocated and retained students spent money on groceries, accommodation, transportation, and other household expenses. This spending generated \$387.2 million in added income for the state economy in FY21, which supported 6,242 jobs in Illinois.

## Partnerships—I-MMÁS

U of I System President Tim Killeen launched an initiative to expand connections with Mexico, seeking to increase enrollment of Mexican students, as well as academic and research partnerships with universities, government agencies, and private industry in Mexico.

The U of I System Mexican & Mexican-American Students (I-MMÁS, pronounced I-MAS) initiative will provide life-changing educational opportunities for more Mexican students and create new, large-scale collaborations to foster innovation that will benefit the people of both Mexico and Illinois, Killeen said.

“This important initiative is rooted in the bedrock mission that we have carried since our founding—to open our doors wide, unlock

the talents of every deserving student, and create the next-generation workforce and innovation that paves the way to progress,” Killeen said.

The initiative will build on a long history of collaboration between the U of I System and institutions in Mexico, including agreements signed in 2016 when Killeen led a delegation of U of I trustees, faculty, and administrators on a four-day visit to Mexico. This trip created a partnership with the Department of Health in Mexico City for diabetes and obesity research, and initiated funding from the Mexican Science and Technology Council to support doctoral studies for 10 Mexican students every year at U of I System universities.

## Alumni impact



The education and training the universities provide for state residents has the greatest impact. Since the universities were established, students have studied at the U of I System and entered the state workforce with greater knowledge and new skills. Today, hundreds of thousands of former U of I System students are employed in Illinois. As a result of their education from the U of I System, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY21, alumni of the U of I System generated \$9.5 billion in added income for the state economy, which is equivalent to supporting 94,555 jobs.

## Total impact

The U of I System added \$18.9 billion in income to the Illinois economy during the analysis year, equal to the sum of operations, research, hospital, 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 \$18.9 billion impact was equal to approximately 2.1% of the total gross state product (GSP) of Illinois.

The U of I System’s total impact can also be expressed in terms of jobs supported. The \$18.9 billion impact supported 164,154 state jobs, using the jobs-to-sales ratios specific to each industry in the state. This means that one out of every 46 jobs in Illinois is supported by the activities of the universities and their students. In addition, the \$18.9 billion, or 164,154 supported jobs, stemmed from different industry sectors. Among non-education industry sectors, the U of I System’s spending and alumni in the Health Care & Social Assistance industry sector supported 20,052 jobs in FY21. If the universities did not exist, these impacts would not have been generated in Illinois.

### U OF I SYSTEM IMPACTS BY INDUSTRY (JOBS SUPPORTED)



**One out of every 46 jobs** in Illinois is supported by the activities of the universities and their students.



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 the U of I System as an investment from the perspectives of students, taxpayers, and society in Illinois.

## Student perspective



In FY21, the U of I System served 101,418 students. In order to attend the universities, 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 U of I System students in FY21 amounted to a present value of \$2.5 billion, equal to \$1.3 billion in out-of-pocket expenses (including future principal and interest on student loans) and \$1.1 billion in forgone time and money.

In return for their investment, the U of I System's students will receive a stream of higher future earnings that will continue to grow throughout their working lives. For example, the average U of I System bachelor's degree graduate from FY21 will see annual earnings that are \$31,200 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 \$1.3 million in higher earnings per graduate. The present

### STUDENTS SEE A HIGH RATE OF RETURN FOR THEIR INVESTMENT IN THE U OF I SYSTEM



Average annual return for students across the U of I System

**15.7%**



Stock market 30-year average annual return

10.5%

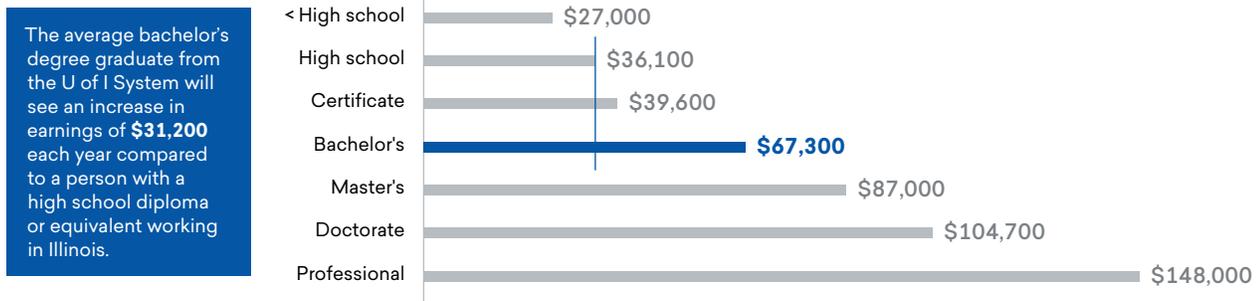


Interest earned on savings account (National Rate Cap)

0.8%

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

value of the cumulative higher future earnings that the U of I System's FY21 students will receive over their working careers is \$12.8 billion.



Source: Emsi Burning Glass employment data.

The students' benefit-cost ratio is 5.2. In other words, for every dollar students invest in an education at the U of I System in the form of out-of-pocket expenses and forgone time and money, they will receive a cumulative value of \$5.20 in higher future earnings. Annually, the students' investment in the U of I System has an average annual internal rate of return of 15.7%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 10.5%.

## Taxpayer perspective



The U of I System 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 U of I System 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 \$4.2 billion in added taxes.

Benefits to taxpayers will also consist of savings generated by the improved lifestyles of U of I System students and the corresponding reduced government services. Education is statistically correlated with a variety of lifestyle changes. The educations that U of I System 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. U of I System 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 U of I System for a copy of the main report. Altogether, the present value of the benefits associated with an education from the U of I System will generate \$532.7 million in savings to state and local taxpayers.

For every dollar of public money invested in the U of I System, taxpayers will receive a cumulative value of **\$3.10** over the course of the students' working lives.

Total taxpayer benefits amount to \$4.8 billion, the present value sum of the added taxes and public sector savings. Taxpayer costs are \$1.5 billion, equal to the funding received from the state for operations, grants, and the normal cost of pensions and benefits for the U of I System in FY21. These benefits and costs yield a benefit-cost ratio of 3.1. This means that for every dollar of public money invested in the U of I System in FY21, taxpayers will receive a cumulative present value of \$3.10 over the course of the students' working lives.

## Social perspective

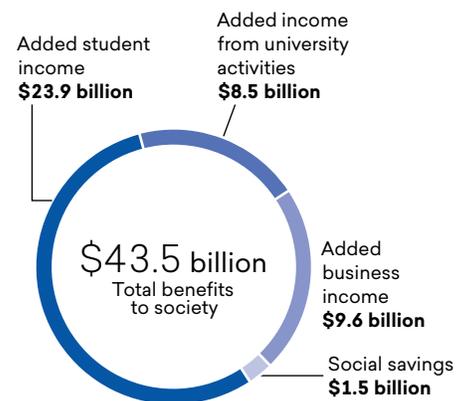


Society as a whole in Illinois benefits from the presence of the U of I System in two major ways. Primarily, society benefits from an increased economic base in the state. This is attributed to the added income from students' increased lifetime earnings (added student income) and increased business output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

Benefits to society also consist of the savings generated by the improved lifestyles of U of I System 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. For a list of study references, contact the U of I System for a copy of the main report.

Altogether, the social benefits of the U of I System equal a present value of \$43.5 billion. These benefits include \$23.9 billion in added student income, \$9.6 billion in added business income, \$8.5 billion in added income from the universities'

SOCIAL BENEFITS IN ILLINOIS FROM THE U OF I SYSTEM



Source: Emsi Burning Glass impact model.

## Outreach—The State Tour

Since its founding in 1867, U of I has been a powerful catalyst for the collective well-being of Illinoisans, making good on the promise of its founding as a land-grant university.

In that spirit, President Tim Killeen, the three university chancellors, and others embarked on a three-part tour of Illinois in Fall 2021, taking the opportunity to meet and listen to various stakeholders and learn how the U of I System can do more to help meet many of the challenges facing Illinois and its people. Participants met with local officials and community leaders, industry partners, other educational leaders, and many others. The tour made stops from Marion and Carbondale to Normal and Peoria, and from Moline and Rockford to Chicago and the suburbs.

A key theme heard throughout was that, across the state, access to the raw materials of a productive, prosperous life is often limited—access to education, good nutrition, quality health care and jobs. Solutions to these issues are critical to economic vitality and opportunity.



activities, as well as \$1.5 billion in social savings related to health, crime, and income assistance in Illinois. People in Illinois invested a present value total of \$9.8 billion in the U of I System in FY21. The cost includes all the universities' expenditures and student costs.

The benefit-cost ratio for society is 4.4, equal to the \$43.5 billion in benefits divided by the \$9.8 billion in costs. In other words, for every dollar invested in the U of I System, people in Illinois will receive a cumulative value of \$4.40 in benefits. The benefits of this investment will occur for as long as the U of I System's FY21 students remain employed in the state workforce.

### Summary of investment analysis results

The results of the analysis demonstrate that the U of I System 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 the U of I System. At the same time, taxpayers' investment in the U of I System 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		Present value benefits		Present value benefits	
<b>\$12.8 billion</b>		<b>\$4.8 billion</b>		<b>\$43.5 billion</b>	
Present value costs		Present value costs		Present value costs	
<b>\$2.5 billion</b>		<b>\$1.5 billion</b>		<b>\$9.8 billion</b>	
Net present value		Net present value		Net present value	
<b>\$10.3 billion</b>		<b>\$3.2 billion</b>		<b>\$33.7 billion</b>	
Benefit-cost ratio	Rate of return	Benefit-cost ratio		Benefit-cost ratio	Rate of return
<b>5.2</b>	<b>15.7%</b>	<b>3.1</b>		<b>4.4</b>	<b>n/a*</b>

\* 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 the U of I System creates value from multiple perspectives. The universities benefit state businesses by increasing consumer spending in the state and supplying a steady flow of qualified, trained workers to the workforce. The U of I System enriches the lives of students by raising their lifetime earnings and helping them achieve their individual potential. The universities benefit state and local taxpayers through increased tax receipts and a reduced demand for government-supported social services. Finally, the U of I System 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 from the U of I 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 U of I System for a copy of the main report.

The results of this study demonstrate that the U of I System creates value from **multiple perspectives**.



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](https://economicmodeling.com/higher-education) to learn more or connect with us.