

THE ECONOMIC IMPACT OF THE UNIVERSITY OF TENNESSEE SYSTEM ON THE STATE OF TENNESSEE

Academic Year 2007-2008

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Executive Summary

This study summarizes the estimated impacts of the University of Tennessee system (UT System) on the Tennessee economy for Fiscal Year 2008 (FY08).¹ The economic impacts estimated in this study include income and jobs created by spending of the university and its employees and students.

Tennessee's economy benefits from the presence of the UT System in several ways. First, the university provides 28,487 faculty, staff, and student employees with salaries. UT System's payroll for FY08, both salary and benefits, was \$1.1 billion. Our estimate indicates that payroll spending impacts the state economy in the amount of \$2.1 billion and helps create about 15,050 additional jobs.²

Second, the university spends money on goods and services in the state, which creates jobs and income. The UT System made \$334.5 million in non-payroll expenditures in FY08, which generated \$224.2 million in income and created 5,230 jobs.

Lastly, spending by visitors attending athletic events and by students generates significant economic activity in the state.³ We estimate student expenditures for FY08 to be approximately \$348.0 million, creating \$147.3 million in income and creating 4,879 jobs.

Combining the effects of payroll (\$2.1 billion), non-payroll (\$224.2 million), and student and visitor spending (\$147.3 million), we find that the UT System generates a total of approximately \$2.5 billion in income and creates 53,645 jobs for the state of Tennessee, including those currently on university payroll. In addition, we estimate that \$237.6 million is generated in state and local tax revenue from the presence of the university system.

I. Introduction

Background

The University of Tennessee is the state's land grant university, tracing its history back to 1794 when it was founded as Blount College. In 1968, the UT System was formed, which today includes campuses at Knoxville, Chattanooga, and Martin; the Health Science Center at Memphis; the Space Institute at Tullahoma; and the statewide Institute of Agriculture and Institute for Public Service.

The UT System strives to impact the state of Tennessee through its presence in each of Tennessee's 95 counties. Through education, research, and outreach, the system serves students, business and industry, schools, governments, organizations, and citizens throughout the state.

Current system-wide enrollment is more than 48,000 students, many of which are in-state students. The UT System employs more than 14,000 faculty and staff in multitude of academic

¹ Fiscal Year 2008 begins on July 1, 2007 and ends on June 30, 2008.

² Payroll, benefits, non-payroll, and students spending totals include data from the University of Tennessee, Knoxville; University of Tennessee at Chattanooga; University of Tennessee at Martin; University of Tennessee Health and Science Center; University of Tennessee Space Institute; University of Tennessee Institute of Agriculture; University of Tennessee Extension; University of Tennessee College of Veterinary Medicine; Institute for Public Service; University of Tennessee athletics; and University of Tennessee administration.

³ The only visitors included in the totals are those attending athletic events.

disciplines and research. UT alumni number over 300,000, with approximately 162,000 living in Tennessee.⁴

Another major part of the system is the University of Tennessee athletics. The Knoxville, Chattanooga, and Martin campuses offer sports teams for both men and women. UT Knoxville is home to one of the most recognizable sports brands in the country. The UT Volunteers attract many visitors to the state and create a sense of pride for the state population.

Summary of Results

This study uses data from various administrative sources to estimate the statewide economic impact of the UT System. Table 1 summarizes the general findings. We estimate that the UT System generates about 53,645 jobs and \$2.5 billion in economic impacts to the state. In addition, the system creates approximately \$237.6 million in state and local tax revenue.

TABLE 1
Summary of Economic Benefits of the UT System, FY08

	Amount
Income Generated	\$2,502,263,678
Tax Revenue Generated	\$237,606,356
Employment Generated	53,645

Although our estimation of the economic impact of the system on the state is significant, it is safe to assume that we are providing a conservative estimate since we do not include any economic impacts from spending by people attending UT System-hosted events other than athletic events. Presumably, a significant amount of economic activity is generated through lodging and food expenses from visitors associated with UT System conferences and events.

The study is organized as follows: in the second section, we introduce system spending for FY08 and estimate the direct income associated with those expenses. In section three, we combine the indirect effects associated with spending by the UT System with the direct effects and estimate the total economic impacts from both income and employment. In section four, we estimate tax revenue created by the system in FY08. Section five describes some qualitative benefits of the UT System. Section six highlights system enrollments trends.

II. Total In-State Expenditures for the UT System

The UT System provides the state with economic benefits in several ways. The direct economic benefits are 28,487 people who are hired by the UT System and the associated income. Table 2 summarizes UT System expenditures for FY08, including spending on payroll, employee benefits,

⁴ See http://www.tennessee.edu/docs/System_Fact_Sheet.pdf for more information.

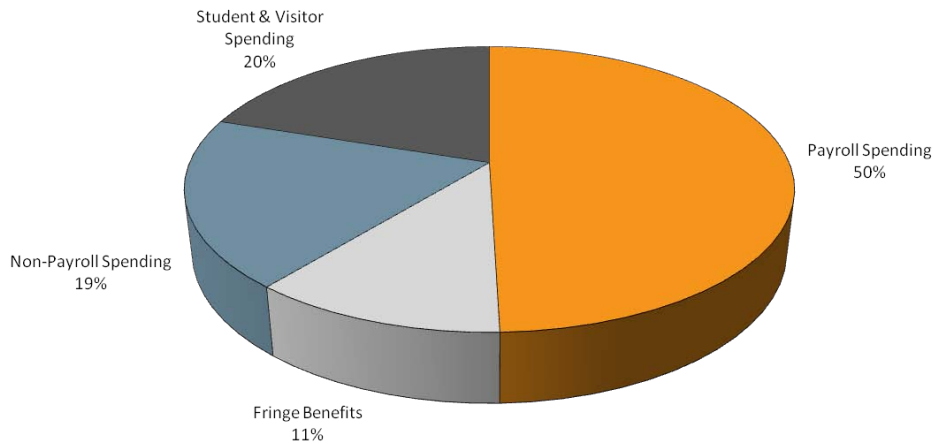
non-payroll spending in-state, and student and visitor spending in-state. Combining these four components, the system was responsible for about \$1.7 billion in spending in FY08.

TABLE 2
UT System Related In-State Expenditures, FY08

	Amount
Payroll Spending	\$865,965,058
Fringe Benefits	\$199,418,484
Non-Payroll Spending	\$334,453,462
Student & Visitor Spending	\$347,956,829
Total FY08 In-State Expenditures	\$1,747,793,833

The system generates income through payment of approximately \$866.0 million in faculty, staff, and student salaries. Employee fringe benefits, such as retirement and health insurance, cost the system \$199.4 million in FY08. Together, salaries and benefits make up about 61 percent of all UT System-related spending, as shown by Figure 1. Salaries and benefits are analyzed together in the estimates provided below.

FIGURE 1
UT System-Related In-State Expenditures, FY08



Non-payroll expenditures made within the state on items like construction, utilities, maintenance services, and equipment also made up a significant portion of UT System expenditures. In FY08, \$334.5 million was spent in-state on non-payroll goods and services, representing approximately 19 percent of all in-state system spending.

Finally, there are impacts associated with off-campus student spending. In FY08, 46,692 students were enrolled in the UT System. We estimate that students spend \$277.2 million annually on transportation, off-campus living, and miscellaneous expenditures. Also, visitors attending athletic

events spend money within the state. Visitor spending was \$70.7 million in 2008.⁵ Total student and visitor spending was \$347.9 million, which was 20 percent of total expenditures.

III. Total Economic Impact on Tennessee from the UT System

Estimated Income Impacts

In addition to the income created through direct payroll spending, the UT System also indirectly creates income for the state. These system-related purchases of goods and services from vendors within the state are responsible for more jobs and income. Jobs and income are also created through the multiplier process - where money is spent and re-spent such that each dollar in expenditures can generate more than one dollar in economic activity.

Table 3 outlines the economic impact from the three main sources of spending described above, system expenditures on payroll and benefits, non-payroll goods and services in-state, and student and visitor spending in-state. In FY08, payroll generated \$2.1 billion in income, while \$224.2 million was generated by non-payroll income, and \$147.3 million from student and visitor spending. Combining all three effects, we estimate the overall economic impact of the UT System to be \$2.5 billion.

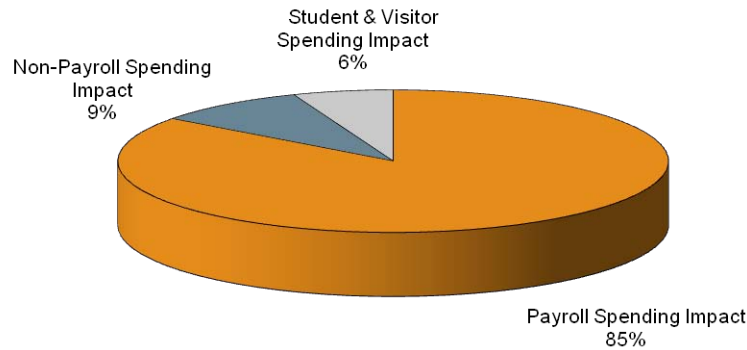
TABLE 3
UT System Economic Impact by Source, FY08

	Amount
Payroll Spending Impact	\$2,130,767,084
Non-Payroll Spending Impact	\$224,171,672
Student & Visitor Spending Impact	\$147,324,921
Total FY08 Income Benefit	\$2,502,263,677

As illustrated by Figure 2, 85 percent of all income was created through payroll spending. Non-payroll spending and student and visitor spending generated approximately 9 percent and 6 percent of income, respectively.

⁵ Visitor-spending totals are from the 2008 CBER study, "The Economic Impact of the University of Tennessee, Knoxville, Athletic Department on the State of Tennessee: Academic Year 2006-2007. August 2008," adjusted for inflation.

FIGURE 2
UT System Income Benefit, by Source, FY08



Estimated Employment Impacts

When the UT System spends money on goods and services, many jobs are created in addition to the 28,487 employed by the system in FY08. We estimate that an additional 25,159 jobs result from UT System-related spending. Combining system employment with jobs created, we estimate that the system is responsible for a total of 53,645 jobs in the state.

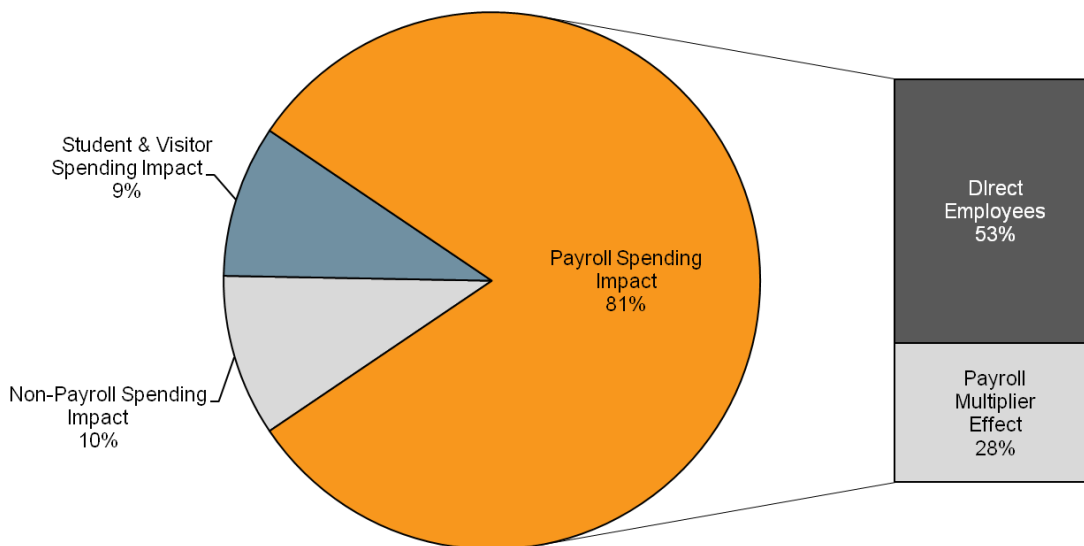
Table 4 summarizes the employment impacts for FY08. The payroll spending effect combines the 28,487 employees and another 15,050 jobs that are generated when employees spend income on goods and services. Also, non-payroll expenditures made by the university created 5,230 jobs in-state. Student and visitor spending was responsible for 4,879 jobs.

TABLE 4
UT System Employment Impact, by Source, FY08

	Amount
Payroll Spending Impact	43,537
Direct Employees	28,487
Payroll Multiplier Effect	15,050
Non-Payroll Spending Impact	5,230
Student & Visitor Spending Impact	4,879
Total FY08 Employment Impact	53,645

Of the total employment impact, 81 percent was due to payroll spending—53 percent UT System employees and 28 percent created by the payroll multiplier effect as shown in Figure 3. Non-payroll spending accounted for about 10 percent. Student and visitor spending generated about 9 percent of all UT System-related jobs.

FIGURE 3
UT System Employment Impacts, by Source, FY08



IV. Tax Effects

The UT System also benefits the state through increased tax revenue. We estimate that the system generates a total of \$237.6 million in state and local tax revenue—\$133.1 million in sales tax revenue and \$104.5 million in other tax revenue. Table 5 summarizes these results.

TABLE 5
State and Local Tax Revenue Generated by the UT System, by Source, FY08

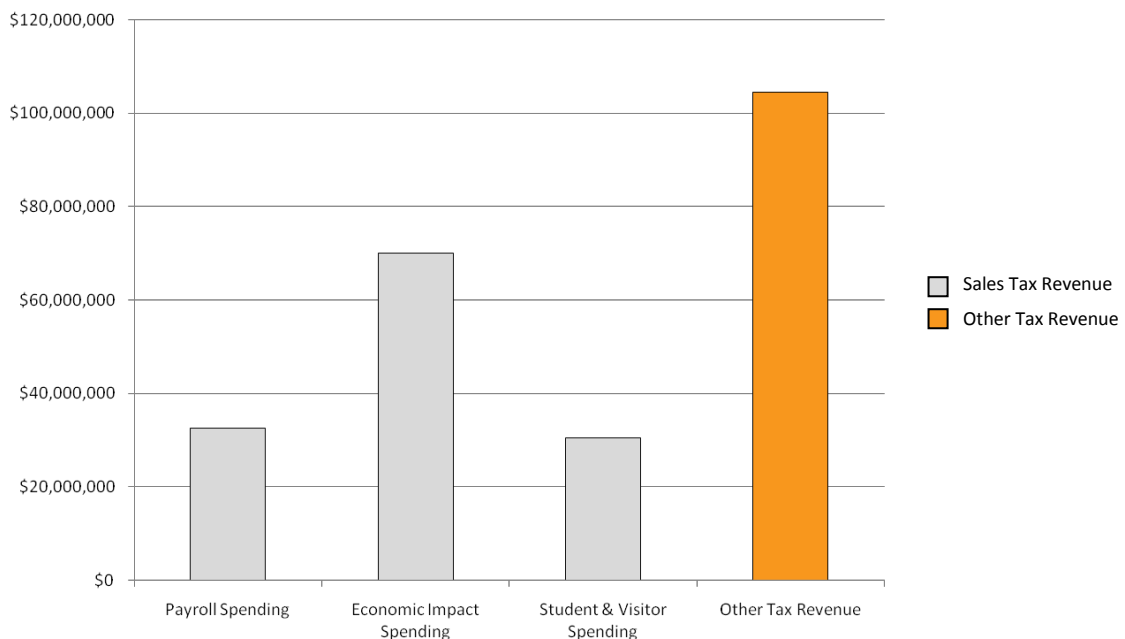
	Amount
Sales Tax Revenue	\$133,057,184
<i>Payroll Spending</i>	\$32,473,690
<i>Economic Impact Spending</i>	\$70,047,907
<i>Student & Visitor Spending</i>	\$30,535,587
Other Tax Revenue	\$104,549,172
Total FY08 State & Local Tax Revenue Generated	\$237,606,356

About \$32.5 million in state and local sales tax revenue arises from UT System employees spending the income that they earn. Another \$70.0 million in sales taxes arises from spending of income

generated by the system. When students and visitors purchase goods and services, sales tax revenue rises by about \$30.5 million.

Other tax revenue, which includes all state and local taxes except for the sales tax, was approximately \$104.5 million in FY08. Figure 4 provides a graphical representation of the estimated tax revenue generated.

FIGURE 4
State and Local Tax Revenue Generated by the UT System, FY08



V. Qualitative Impacts

There are significant qualitative benefits from the UT System that, though difficult to quantify, may be as important as or more important than the quantitative effects described above. These qualitative impacts include benefits from an educated workforce, distinguished research projects, and increased community engagement through an array of activities. A few examples are listed below, but these barely scratch the surface in describing the many qualitative benefits.

The state of Tennessee benefits from an educated workforce, including faculty and students who are currently enrolled in the UT System and retired faculty and alumni who reside or work in-state. Describing these impacts in detail would be beyond the scope of this study, but it is well-documented that there are substantial qualitative benefits that arise from an educated population/workforce.⁶ Perhaps the most transparent of these benefits comes in the form of higher wages and lower

⁶ Murray, M. N. (December 2007). *Education Crossroads*. Knoxville, TN: University of Tennessee, Center for Business and Economic Research.

unemployment rates for UT System graduates. Recent research in the Center for Business and Economic Research evidences that more than 57 percent of UT System graduates stay and work in Tennessee after graduation.⁷

Faculty and students enrolled in the system often provide benefits that are fiscally immeasurable to the local community. For example, the faculty and students are involved in churches, schools, charities, and many other off-campus social events that greatly impact the local communities and the state.

In many cases, students and faculty members involved in local community organizations may be perceived as role models for younger Tennesseans. In addition, because the system attracts such a diverse range of students and faculty, Tennesseans can discover a broad variety of cultural and social activities that would not otherwise prevail in the state.

The five campuses that comprise the UT System each uniquely affect their surrounding areas. The Knoxville, Chattanooga, Martin, Memphis, and Tullahoma campuses all impact their respective communities through research and collaborations. The following paragraphs offer examples of these collaborations from each campus.

The University of Tennessee, Knoxville (UT Knoxville) collaborates with the Oak Ridge National Laboratory (ORNL), providing UT Knoxville's faculty and students with unique research endeavors that separate it from other public colleges and universities. Working with UT Knoxville allows ORNL to create synergy with some of the finest researchers in the country.

At the University of Tennessee at Chattanooga (UT Chattanooga), the SimCenter National Center for Computational Engineering provides research and development opportunities in partnership with businesses in the area. This allows for technology transfer into the marketplace, which can lead to business development and job creation. For instance, Radiance Industries has opened a new office in Chattanooga to allow close relationships with the SimCenter.

At The University of Tennessee at Martin (UT Martin), the Regional Entrepreneurship and Economic Development Center (REED Center) serves existing and prospective entrepreneurs and supports economic development in rural Northwest Tennessee. It offers free and low-cost courses, workshops, and training sessions that respond to the needs of small businesses and support regional economic development. The Center combines UTM resources with those of regional businesses, chambers of commerce, small business development centers in Jackson and Dyersburg, rural development services, lending institutions, and city governments to provide innovative and ongoing training and consulting services.

Faculty, students, and residents at the University of Tennessee Health Science Center (UTHSC) provide patient care services throughout Memphis and the Mid-South. UTHSC faculty provide patient care services through affiliated physician practice plans including the UT Medical Group, UT Cancer Institute, Campbell Clinic, and Semmes-Murphy Spinal Institute. Its academic and strategic hospital partners include Methodist University Hospital, LeBonheur Children's Medical Center, The Regional Medical Center of Memphis, University Health System (Knoxville), Erlanger Health System (Chattanooga),

⁷ Fox, W. F., Kiser, B., & Thacker, A. (October 2007). *School-to-Work: Do Tennessee's Higher Education Graduates Work in Tennessee? Part 2. Employment and Earnings Trends by Institutions*. Knoxville, TN: University of Tennessee, Center for Business and Economic Research.

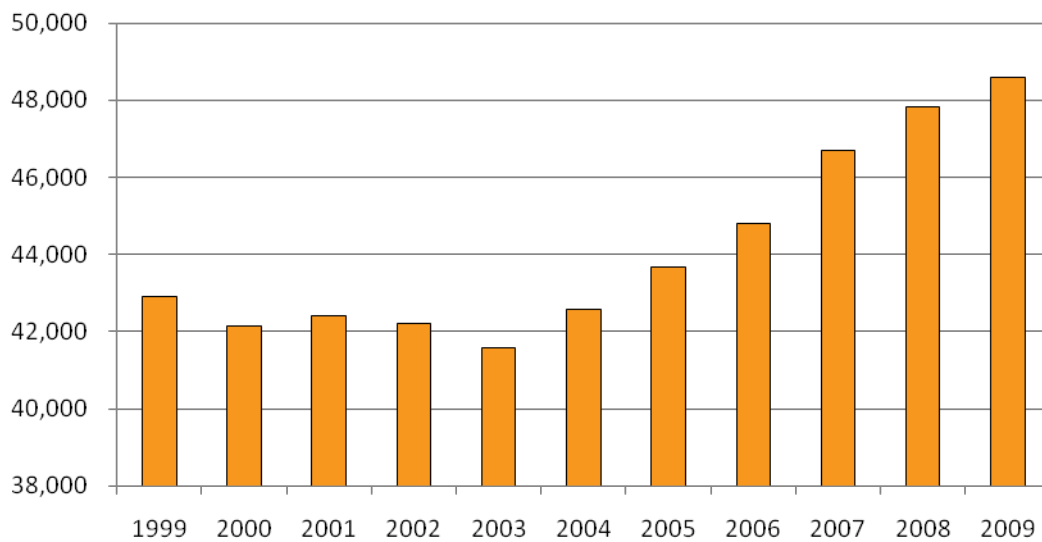
Baptist Memorial Health System, West Tennessee Health Care (Jackson), St. Francis Hospital, St. Jude Children’s Research Hospital, and Veterans’ Medical Center in Memphis. UTHSC, through its physician practices and affiliated teaching hospitals, provides more than one million days of inpatient services and more than two million outpatient visits annually.

The University of Tennessee Space Institute (UTSI) is a graduate education and research institution located in Tullahoma, Tennessee, near the United States Air Force Arnold Engineering Development Center (AEDC). UTSI supports AEDC through research and technology development projects and continuing education programs.

VI. Growing Economic Impact

To help students attending in-state public institutions, Tennessee recently began offering lottery-based scholarships to high school graduates meeting academic requirements. The Tennessee HOPE Scholarship is renewed annually if the student meets academic criterion.⁸ As shown in Figure 5, the lottery scholarship program and other factors have resulted in an increase in UT System’s enrollment. Since 2003, the university has seen 2.6 percent annual growth. Growing student counts are helping expand the already large effect of the UT System.

FIGURE 5
UT System Enrollment Trends



⁸ See http://www.tn.gov/CollegePays/mon_college/hope_scholar.htm for more information.