

THE ECONOMIC IMPACT OF THE UNIVERSITY OF TENNESSEE, KNOXVILLE 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, Knoxville (UT Knoxville) 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 UT Knoxville in several ways. First, the university provides 11,767 faculty, staff, and student employees with salaries. UT Knoxville's payroll for FY08, both salary and benefits, was \$363.9 million.² Our estimate indicates that payroll spending impacts the state economy in the amount of \$727.8 million and helps create about 5,140 additional jobs.

Second, the university spends money on goods and services in the state, which creates jobs and income. UT Knoxville made \$191.0 million in non-payroll expenditures in FY08, which generated \$126.6 million in income and created 2,986 jobs.

Lastly, spending by visitors attending athletic events and by students generates significant economic activity in the state.³ We estimate student and visitor expenditures for FY08 to be approximately \$226.4 million, creating approximately \$95.9 million in income and creating 3,162 jobs.

Combining the effects of payroll (\$727.8), non-payroll (\$126.6), and student and visitor spending (\$95.9), we find that UT Knoxville generates a total of \$950.2 million in income and creates 23,055 jobs for the state of Tennessee, including those currently on university payroll. In addition, we estimate that \$102.4 million is generated in state and local tax revenue from the presence of the university.

I. Introduction

Background

Founded in 1794 as Blount College, UT Knoxville has been the flagship institution of the statewide land-grant University of Tennessee System since 1869. More than 300 degree programs are offered at the university, and over 300,000 individuals have earned degrees. The U.S. News and World Report placed UT Knoxville 112th in its rankings of "America's Best Colleges" in 2009.⁴

Currently, enrollment at UT Knoxville is approximately 26,900, making up more than half of the overall enrollment at the University of Tennessee System (about 45,000). About 21,000 of these students are undergraduates, while the remaining 6,000 are graduate students.

Of the 11,767 employees that work for UT Knoxville, roughly 1,700 are faculty members, while more than 10,000 are staff or student employees. UT Knoxville's campus includes 220 buildings on land that spans about 550 acres.

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

² Payroll, benefits, and non-payroll totals do not include data from the College of Veterinary Medicine, Institute of Agriculture, UT Extension, and Institute of Public Service.

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

⁴ See www.usnews.com/collegerankings for more information.

Summary of Results

This study uses data from various administrative sources to estimate the statewide economic impact of UT Knoxville. Table 1 summarizes the general findings. We estimate that the university generates about 23,055 jobs and \$950.2 million in economic impacts to the state. In addition, the university creates approximately \$102.4 million in state and local tax revenue.

TABLE 1
Summary of Economic Benefits of UT Knoxville, FY08

	Amount
Income Generated	\$950,238,632
Tax Revenue Generated	\$102,360,786
Employment Generated	23,055

Although our estimation of the economic impact of the university 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-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 Knoxville conferences and events.⁵

The study is organized as follows: in the second section, we introduce university spending for FY08 and estimate the direct income associated with those expenses. In section three, we combine the indirect effects associated with spending by UT Knoxville 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 university in FY08. Section five describes some qualitative benefits from UT Knoxville. Section six highlights university enrollment trends.

II. Total In-State Expenditures for UT Knoxville

UT Knoxville provides the state with economic benefits in several ways. The direct economic benefits are 11,767 people who are hired by UT Knoxville and the associated income. Table 2 summarizes UT Knoxville expenditures for FY08, including spending on payroll, employee benefits, non-payroll spending in-state, and student and visitor spending in-state. Combining these four components, the university was responsible for about \$781.3 million in spending in FY08.

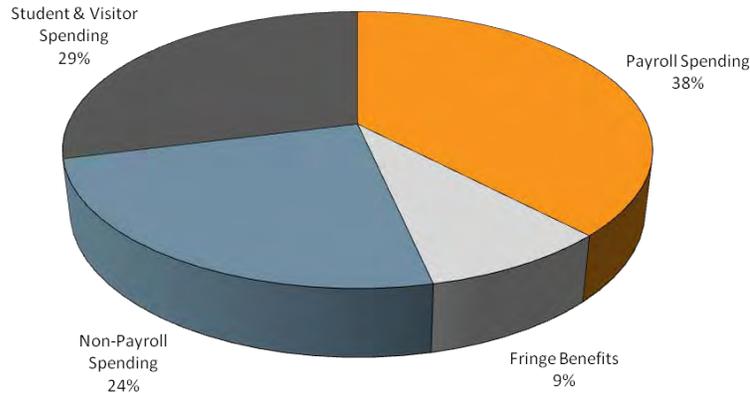
⁵ Direct employment and purchases by UT Knoxville Athletic Department are included in our analysis. Visitor spending from athletic events is not analyzed here. See the report "The Economic Impact of the University of Tennessee, Knoxville, Athletic Department on the State of Tennessee: Academic Year 2006-2007" by the UT Center for Business and Economic Research for estimates of how the athletic program affects the Tennessee economy.

TABLE 2
UT Knoxville Related In-State Expenditures, FY08

	Amount
Payroll Spending	\$295,781,964
Fringe Benefits	\$68,110,685
Non-Payroll Spending	\$190,962,861
Student & Visitor Spending	\$226,424,529
Total FY08 In-State Expenditures	\$781,280,039

The university generates income through payment of \$295.8 million in faculty, staff, and student salaries. Employee fringe benefits, such as retirement and health insurance, cost the university \$68.1 million in FY08. Together, salaries and benefits make up about 47 percent of all UT Knoxville-related spending, as shown by Figure 1. Salaries and benefits are analyzed together in the estimates provided below.

FIGURE 1
UT Knoxville 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 Knoxville expenditures. In FY08, \$191.0 million was spent in-state on non-payroll goods and services, representing approximately 24 percent of all in-state university spending.

Finally, there are impacts associated with off-campus spending by students and visitors. In FY08, 27,077 students were enrolled at UT Knoxville. For the purposes of this study, we only include spending by full-time students since part-time students presumably would already have initiated economic activity, enrolled or not. Only 3,400 students were part-time in FY08, leaving more than 23,000 students

in the analysis. Visitor spending on athletic events accounted for \$70.7 million.⁶ Total spending by students and visitors was \$226.4 and accounted for 29 percent of all in-state university spending.

III. Total Economic Impact on Tennessee from UT Knoxville

Estimated Income Impacts

In addition to the income created through direct payroll spending, the university also indirectly creates income for the state. These university-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, university expenditures on payroll and benefits, non-payroll goods and services in-state, and student and visitor spending in-state. In FY08, payroll generated \$727.8 million in income, while \$126.6 million was generated by non-payroll income, and \$95.9 million from student and visitor spending. Combining all three effects, we estimate the overall economic impact of the university to be \$950.2 million.

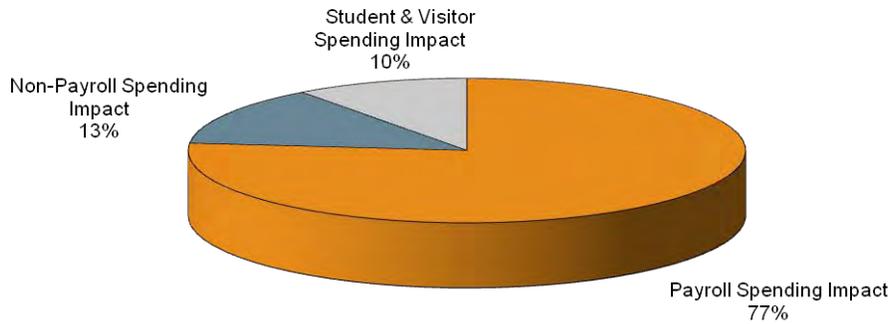
TABLE 3
UT Knoxville Economic Impact by Source, FY08

	Amount
Payroll Spending Impact	\$727,785,299
Non-Payroll Spending Impact	\$126,585,187
Student & Visitor Spending Impact	\$95,868,146
Total FY08 Income Benefit	\$950,238,632

As illustrated by Figure 2, 77 percent of all income was created through payroll spending. Non-payroll spending and student and visitor spending generated approximately 13 percent and 10 percent of income, respectively.

⁶ 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 Knoxville Income Benefit, by Source, FY08**



Estimated Employment Impacts

When UT Knoxville spends money on goods and services, many jobs are created in addition to the 11,767 employed by the university in FY08. We estimate that an additional 11,288 jobs result from UT Knoxville-related spending. Combining UT Knoxville employment with jobs created, we estimate that the university is responsible for a total of 23,055 jobs in the state.

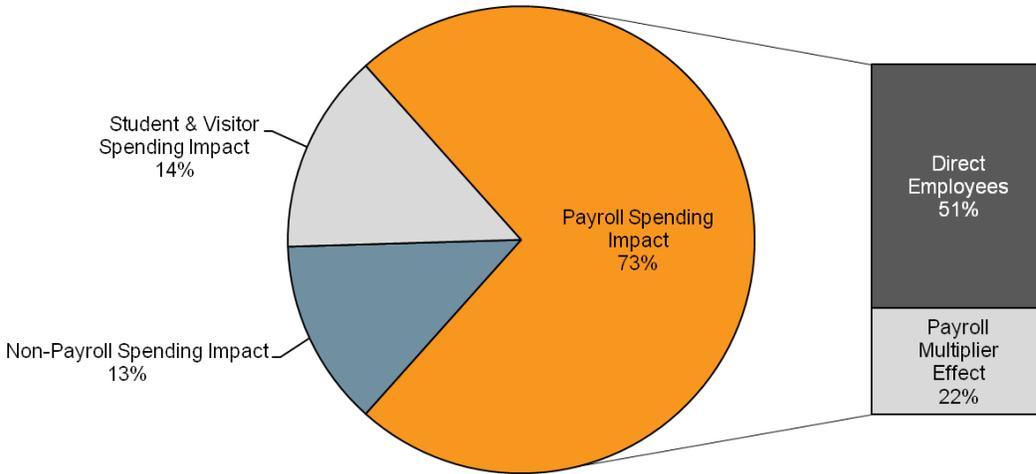
Table 4 summarizes the employment impacts for FY08. The payroll spending effect combines the 11,767 employees and another 5,140 jobs that are generated when employees spend income on goods and services. Also, non-payroll expenditures made by the university created 2,986 jobs in-state. Student and visitor spending was responsible for 3,162 jobs.

**TABLE 4
UT Knoxville Employment Impact, by Source, FY08**

	Amount
Payroll Spending Impact	16,907
Direct Employees	11,767
Payroll Multiplier Effect	5,140
Non-Payroll Spending Impact	2,986
Student & Visitor Spending Impact	3,162
Total FY08 Employment Impact	23,055

Of the total employment impact, 73 percent was due to payroll spending—51 percent UT Knoxville employees and 22 percent created by the payroll multiplier effect as shown by Figure 3. Non-payroll spending accounted for about 13 percent. Student and visitor spending generated about 14 percent of all UT Knoxville-related jobs.

FIGURE 3
UT Knoxville Employment Impacts, by Source, FY08



IV. Tax Effects

UT Knoxville also benefits the state through increased tax revenue. We estimate that the university generates a total of \$102.4 million in state and local tax revenue—\$62.3 million in sales tax revenue and \$40.0 million in other tax revenue. Table 5 summarizes these results.

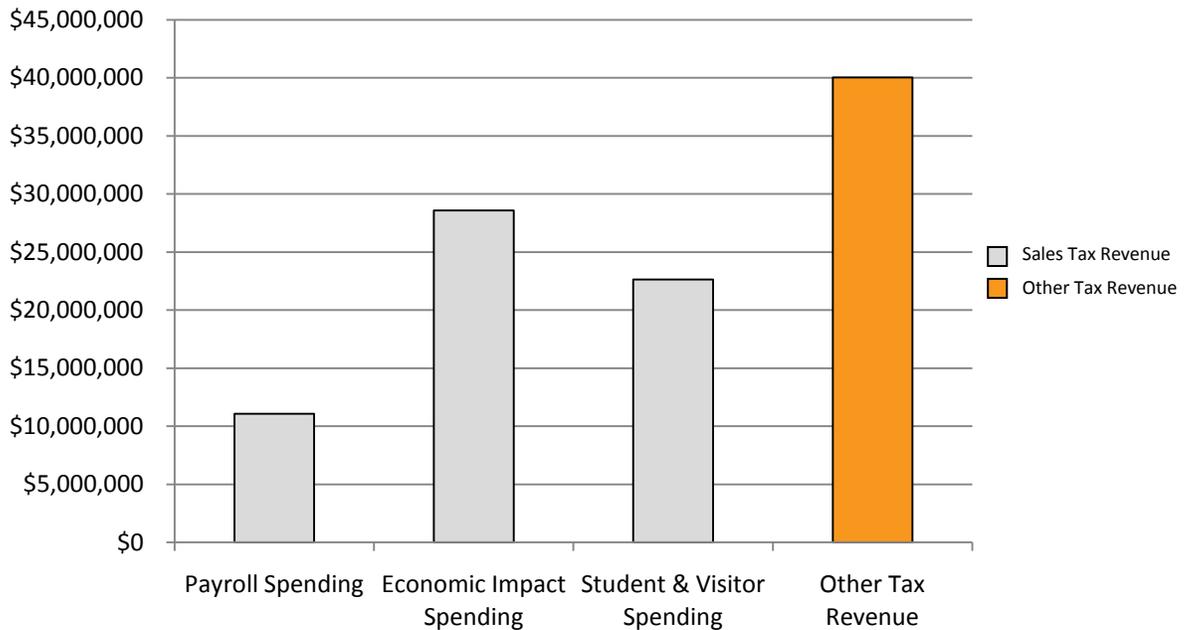
TABLE 5
State and Local Tax Revenue Generated by UT Knoxville, by Source, FY08

	Amount
Sales Tax Revenue	\$62,312,177
<i>Payroll Spending</i>	\$11,091,824
<i>Economic Impact Spending</i>	\$28,584,367
<i>Student & Visitor Spending</i>	\$22,635,987
Other Tax Revenue	\$40,048,609
Total FY08 State & Local Tax Revenue Generated	\$102,360,786

About \$11.1 million in state and local sales tax revenue arises from UT Knoxville employees spending the income that they earn. Another \$28.6 million in sales taxes arises from spending of income generated by the university. When students and visitors purchase goods and services, sales tax revenue rises by about \$22.6 million.

Other tax revenue, which includes all state and local taxes except for the sales tax, was approximately \$40.0 million in FY08. Figure 4 provides a graphical representation of the estimated tax revenue generated.

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



V. Qualitative Impacts

There are significant qualitative benefits from UT Knoxville 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 at UT Knoxville 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.⁷ Perhaps the most transparent of these benefits comes in the form of higher wages and lower unemployment rates for UT Knoxville graduates. Recent research in the Center for Business and Economic Research evidences that more than 54 percent of UT Knoxville graduates stay and work in Tennessee after graduation.⁸

⁷ Murray, M. N. (December 2007). *Education Crossroads*. Knoxville, TN: University of Tennessee, Center for Business and Economic Research.

⁸ 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.

Collaborating with the Oak Ridge National Laboratory (ORNL) provides 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.

UT Knoxville's faculty and students consistently work on an array of research projects that enhance the overall wellbeing of the state. Among the notable areas are several partnership ventures with the aforementioned ORNL in biological sciences, computational sciences, and other areas of research.

Individuals, companies, and alumni donate money to the university for research or construction of new campus facilities in addition to that provided by the State of Tennessee. These large, discrete projects create jobs and income for the state.

Faculty and students enrolled in the university 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. Also, charitable donations through several UT Knoxville organizations are made on a consistent basis.

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 university 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.

Another benefit of UT Knoxville is the effort to be a leader in environmental awareness by adopting the "Make Orange Green" program. Informing students, faculty, and the general public on how to preserve the environment illustrates the type of learning-by-doing activities available to the community.

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.⁹ As shown in Figure 5, the lottery scholarship program and other factors have resulted in an increase in UT Knoxville's enrollment. Since 2003, the university has seen 1.2 percent annual growth. Growing student counts are helping expand the already large effect of UT Knoxville.

⁹ See http://www.tn.gov/CollegePays/mon_college/hope_scholar.htm for more information.

FIGURE 5
UT Knoxville Enrollment Trends

