**PRODUCTIVITY & EFFICIENCY** Degree Productivity, Responsible Administration,

and Efficiency Initiatives



The University of Texas System

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Nine Universities. Six Health Institutions. Unlimited Possibilities.





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### UNDERSTANDING THIS BRIEF

### Useful Definitions

Delta Project education and related (E&R) expenses totals spending on instruction and student services, plus a portion of spending on academic support, institution support and operations and maintenance.

<u>Education Share</u> = (Instruction + Student Services) / (Instruction + Student Services + Research + Public Service)

<u>E&R Expenses Formula</u> = Instruction + Student Services + (Education Share x (Academic Support + Institution Support + Operations & Maintenance). Data are from the IPEDS finance survey.

Administrative costs are institutional support expenses for executive management, fiscal operations, general administration and logistical services, administrative computing support, and public relations/development. (Administrative costs are reported annually to the LBB.)

<u>Administrative employees</u> include IPEDS categories: "Administrative/Executive" and "Other Professional."

### Common Abbreviations:

E&R = Education & Related FTE = Full-time Equivalent IPEDS = Integrated Postsecondary Education System LBB = Legislative Budget Board THECB = Texas Higher Education Coordinating Board

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# About This Brief

The drumbeat of concern both nationally and locally regarding the escalating costs of higher education and the call to measure the productivity of colleges and universities are getting louder. The concern is heightened by the austerity of the state budget which has been coupled, not coincidentally, with rising tuition prices across the country. Even though there are conflicting theories about why college costs have risen faster than inflation, most economists and policy makers agree about the importance of gaining a greater understanding of productivity and finding meaningful ways to measure it.

That tuition has increased faster than inflation is directly related to theories about why overall costs have escalated. Affordability concerns related to rising tuition are highlighted by the national shift in funding from state sources (appropriations) to the student (tuition). A recent State of Texas Higher Education Finance report tracks national higher education finance and enrollment trends. It notes that state funding per student reached a 25 year low in 2005 and only recovered slightly by 2009 (SHEEO, 2010). Tuition charges, the other primary source of revenue for operations, have only partially offset the decline in state funding. Over the past 25 years, the share of total educational revenue derived from tuition increased approximately 13 percentage points from about 24% in 1984 to more than 37% in 2009. UT System data show a similar trend (Figure 1).



State Appropriations & Tuition & Fees, 2002-2010

FTE: full-time equivalent



\*Adjusted for inflation using the Consumer Price Index (CPI-U) and FY 10 as the base year. Tuition & Fee Revenue does not include scholarship and fellowship discounts and waivers. Totals do not include UT Brownsville.

In 2002, State Appropriations at UT System academic universities were 62% of revenues per FTE student. Tuition and Fees were 38%.

Since then, Tuition and Fees have increased both to make up for tuition rates that were traditionally lower than national averages and to make up for declining State Appropriations. Thus, by 2010, the balance between Tuition and Fees (now 52%) and State Appropriations (48%) had shifted. Several recent initiatives aimed at identifying issues and providing recommendations related to measuring and improving efficiencies in higher education include:

- The Delta Project on Postsecondary Education Costs, Productivity, and Accountability. (UT System used this national best practice methodology to measure degree productivity.) <u>www.deltacostproject.org</u>
- The Texas Higher Education Coordinating Board's Advisory Committee on Higher Education Cost Efficiencies Report to the Governor. <u>www.thecb.state.</u> <u>tx.us/index.cfm?ObjectID=9D89F7D3-F892-EEA0-D923B6D6D465D781</u>
- The Center for College Affordability & Productivity's report, "25 Ways to Reduce the Cost of College." <u>www.centerforcollegeaffordability.org/pages/page.asp?page\_id=129325</u>
- The Bain & Company, Achieving Operational Excellence at the University of California, Berkeley Report.
- The Goldwater Institute's Policy Report, "Administrative Bloat at American Universities: The Real Reason for High Costs in Higher Education." <u>www.goldwaterinstitute.org/article/4941</u>

The University of Texas System is committed to increasing productivity and efficiency and finding meaningful ways to measure the progress of our efforts. The purpose of this brief is to examine these efforts within the context of national and local initiatives and in light of opposing economic viewpoints. Specifically,

- 1. Examine productivity for the UT academic institutions using national best practices to measure degree productivity (Delta Project methodology);
- 2. Examine administrative cost trends; and
- 3. Document the intentionality and progress of the UT System's initiatives aimed at maximizing efficiency and productivity.

Source: UT System

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## EXECUTIVE SUMMARY

### **Background & Context**

- National and local concern over increases in college costs and related concerns about affordability have prompted an intensified interest in efficiency and productivity in higher education.
- There are conflicting theories by economists about why college costs have increased more than inflation.
- Texas and national policy makers have been seeking more information about efficiency and productivity in light of the recent economic downturn and expected scarcity of state resources for higher education.
- This research brief examines the evidence regarding productivity and efficiency for the UT System in light of recent reports/policy initiatives, including:
  - The Delta Project
  - THECB's Advisory Committee on Higher Education Cost Efficiencies Report to the Governor
  - Center for College Affordability & Productivity's report "25 Ways to Reduce College Costs"
  - Bain Report (UC Berkeley) Achieving Operational Excellence
  - The Goldwater Institute's Policy Report "Administrative Bloat at American Universities: The Real Reason for High Costs in Higher Education"

### Comprehensive Analysis

### Efficiency in Degree Production

Based on the nationally recognized Delta Project methodology, UT academic institutions are doing more with less than their benchmark comparison groups:

• It costs less to produce a degree at UT academic institutions (37% less on average) (Figure 2).

#### Responsible Administration

UT academic institutions are demonstrating responsible administration:

- Employees per 100 FTE students have increased but remain 67% of the national average (Figures 3a, 3b).
- Spending per student has increased, but average total spending is barely half the national average (Figures 4a, 3b).
- Administrative costs have remained between 7% and 8% of total expenses over the past 10 years (Figure 5).

#### Efficiency Gains

UT System efficiency initiatives demonstrate a proactive response to national and local recommendations to cut costs and find efficiencies:

• Documented \$1.42 billion in savings, avoided costs, and increased investment earnings over the past 5 years (including \$565 million in 2010 alone) from System-level efficiency initiatives (Figure 7, Table 2).

### <u>Conclusions</u>

- The UT System is dedicated to becoming more productive and efficient and to methodically and thoughtfully measuring progress over time. We must always seek better ways to manage our resources to benefit students.
- The evidence on degree productivity, consistent with the nationally recognized Delta Project, shows that UT System academic universities are significantly more efficient at producing degrees than statistically selected national peers (37% more efficient on average).
- UT System's administrative costs trends show responsible use of resources.
- While productivity is very important, it is not the only objective of the UT System. Evaluating the efficiency and productivity of universities must be balanced with other important objectives such as increasing quality, access, graduation success, and research competitiveness.
- Recent efficiency initiatives of the UT System produced over \$1.42 billion in savings, earnings or generated value in the last 5 years. This is in addition to campus-level initiatives underway at all UT System institutions to help improve efficiency and productivity.

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## **OVERVIEW & CONTEXT:**

The three major themes of this brief revolve around the nexus of cost: 1) the Delta Project degree cost analysis, 2) trends in administrative costs, and 3) UT System's focus on productivity and efficiency initiatives. The primary theme, the Delta Project, has an outcomes-based way to measure productivity in the primary mission of higher education, i.e., producing degrees. It provides the answer to the question, "How much *does* it cost to produce a degree?"

This brief also provides insight into the more pressing question-"How much *should* it cost to produce a degree?"- by employing statistical and meaningful national benchmark comparisons to understand the relative performance of the UT institutions. The analysis from the Delta Project methodology shows that the UT System is, on average, 37% more efficient. While there are many reasons for this strong performance, the two other themes—responsible administration and UT System efficiency initiatives—contribute directly to UT's competitiveness and ability to produce more with less.

## Understanding the Theory behind the Rhetoric of College Costs

Economists all agree that higher education costs have historically outpaced general inflation, but they disagree about the reason. Two prevailing economic theories document the main opposing viewpoints: (1) College cost increases are a result of economic growth in the larger economy and the nature of labor and technology in the service industries (i.e., higher education); or, conversely, (2) The culprit is the universities' own "administrative bloat."

The debate about which of these theories is most accurate regarding higher education costs is getting even louder as state budgets continue to shrink and concerns about college affordability intensify. Like most opposing economic theories, there is likely some truth in both sets of arguments. In addition, there are other drivers that have increased higher education costs:

- · Regulatory increases and proliferation of reporting requirements.
- Increased demands for new services like career placement, health clinics, student services, etc.
- The increasing body of knowledge that must be imparted to students to make them competitive in today's complex workplace.

This research brief examines issues of costs, efficiency, and productivity in the UT System in light of these two opposing economic viewpoints.

## How Much Does A Degree Cost?

### **Definitions:**

How much does a degree cost? Answers to this question vary based on the definition of "cost" and "price" which are sometimes mistakenly used interchangeably. The examples below illustrate the complexity of this issue:

### "Sticker Price" to student for tuition/fees/books (Partial student price)

Sticker price refers to the price a typical undergraduate Texas student would pay for tuition, fees and books over the time period needed to get a Baccalaureate degree.

### "Net Price" to student for tuition/fees/books (Partial student price)

Net price describes the actual amount students pay after grant (federal, state, institutional) aid, discounts and scholarships.

### Total Annual Cost per Degree (Total institutional cost)

Understanding the total cost to produce a degree has been the subject of intensive study over the past decade. Total cost goes beyond a partial accounting of tuition and fees (and books) as mentioned above. The national best practice of capturing the cost per degree uses Delta Project methodology which calculates education and related (E&R) expenses per total degrees awarded. The details of the methodology are explained on page 6, and include all educational expenses related to instruction plus other costs such as library support, academic computing, service and maintenance of facilities and institutional support services such as legal, administrative and external relations.

These three examples begin to illustrate the complexity of this issue. Tuition and Fees, the price paid by students (whether sticker or net price), covers only a portion of the total cost to the university of producing degrees.

## I. The Delta Project - Degree Productivity

The cost of producing a degree varies by discipline. It is much more expensive to produce a degree in engineering or pharmacy compared to a degree in English or history. There are three basic drivers for the differences in cost: (1) the variation by discipline of the market price of faculty salaries; (2) variation by discipline in the cost of technology and overhead; and (3) variation by discipline in student/faculty ratios. The funding formula in Texas pays more for engineering credit hours than it does for English credit hours—it simply costs more, and the formula recognizes this. Thus, the average cost of producing a degree per institution will vary greatly based on the kinds of degrees each offers and its mission. This leads to problems for those seeking to understand the relative efficiency of different universities in producing graduates.

The Delta Project is an independent non-profit organization nationally recognized for leadership in understanding and measuring higher education costs, productivity, and accountability. Its work in these areas is supported by national education and business organizations including the Lumina Foundation, Jobs for the Future, and Human Capital Research Corporation. This initiative has been led for over a decade by Executive Director Dr. Jane Wellman, a widelyrecognized expert in these areas.

As indicated on their website, the Delta Project is "focused on the spending part of the college cost problem—how spending relates to access and success, and ways that costs can be controlled without compromising quality." Often, higher education financial reports show "either balance sheets...or budgets...neither of which tells us much," but the Delta Project cost analysis metrics are designed "to shine a light on where the money comes from, where it goes, and what it buys" (Trends in College Spending, 2010). One very important component of this work over the past decade has been the development of a widely-accepted methodology for calculating what it costs to produce a degree. When compared to similar universities, the cost per degree metric provides a meaningful way to track the degree productivity for the UT academic institutions and to benchmark our performance nationally.

The Delta methodology for calculating the total cost per degree is illustrated in the formula listed below. Full accounting definitions can be found at <u>www.deltacostproject.org.</u>



Through many years of study and consultation with experts, the Delta Cost organization determined which financial categories should be included in isolating expenses devoted to the educational mission of producing degrees. Education & related (E&R) expenses include direct costs of instruction and student services, plus a portion of indirect costs such as academic support (libraries, academic computing, course and curriculum development), institutional support (administrative, legal, external relations) and operations and maintenance (service and maintenance to grounds and facilities, utilities, property insurance). E&R expenses are then divided by all degrees, including graduate degrees, to determine the cost per degree.

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### UT Degree Productivity Exceeds National Averages

Figure 2 shows the Education & Related (E&R) expenses—or, cost—per degree produced. Relative to national comparisons, it costs less to produce a degree at the UT institutions. The top portion of the bar indicates how much more the baseline comparison group spends per degree. On average, UT institutions are 37% more efficient at producing degrees.



Fig 2 Comparison: Annual Cost per Degree Awarded

E&R per Degree Compared to Baseline Comparison Group, 2009

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By combining the appropriate national comparisons with the widely used Delta Project cost methodology, the UT System can begin to track degree productivity trends over time.

A note about UT Brownsville: because expenditures could not be separated between the community college and the four-year university, it was not possible to complete the original Delta Project cost analysis for UTB. However, by combining all expenses and all awards (certificates, associates, bachelor's, and graduate), it cost just over \$33,000 to produce an award in 2007 and about \$40,000 in 2009.

## Benchmarking is Key to Understanding Performance

In order to appropriately account for the differences in discipline mix and mission differences at each university, the national comparisons were based on a statistical model. The University of Texas System Office of Strategic Initiatives developed this model for grouping similar universities for performance comparisons. This model provides a baseline comparison group unique to each of our academic institutions controlling for size, student characteristics, research intensiveness, and program mix (Table 1).

This benchmarking technique is especially important for comparing costs to produce a degree. It is crucial to control for the relative expensiveness of program mix and mission differences when examining degree productivity. Otherwise, one would always conclude that all liberal arts colleges are efficient and all major research universities are not. The critical question is: After controlling for program mix (expensiveness) and other mission characteristics, how do the UT institutions stack up? This approach provides a fair and valid way to understand relative performance.

### Table 1 Model Factors for the Baseline Comparison Group

**Program Mix** 

Education

Law

· Associates Degrees as % of Total Degrees

• Bachelor's Degrees as % of Total Degrees

• Graduate Degrees as % of Total Degrees

· Humanities and Social Sciences

· Business and Public Administration

· Visual and Performing Arts

Health Professions

· First Professional Degrees as % of Total Degrees

and first professional) as % of Total Degrees:

· Degrees by program and level (bachelor's, graduate,

· Agriculture, Science, Engineering, and Architecture

#### Institutional Size

- Total headcount Enrollment
- Total Full-time Instructional Faculty Count

#### **Student Population**

- % Pell Eligible
- % in 25th Percentile SAT
- % in 75th Percentile SAT
- Undergraduate Enrollment as % of Total Headcount
- Full-Time Headcount as % of Total Headcount

#### **Research Focus**

- Research \$ as a % of Total \$
- Research \$
- Ratio of Research \$ to Instructional \$
- Federal Research \$
- Doctoral Degrees Awarded
- Federal Research \$/Faculty FTE
- Doctoral Degrees Awarded/Faculty FTE

For more information: www.utsystem.edu/osm/files/onepagers/OneSheet-Benchmarking-Dec2010.pdf

## II. Administrative Cost Trends

The Goldwater Institute's policy report blames escalating higher education costs on "administrative bloat." This section of the research brief examines the administrative cost trends of the UT System academic institutions.

It is important to note that the Goldwater report includes expenses in "administrative" categories that are directly related to student services (e.g., academic advising, student organizations, educational tools, health services, etc.). Recent research by Douglas Webber and Ronald Ehrenberg of Cornell University confirms that some of the expenditures that Goldwater counts as "administrative bloat" actually increase graduation and persistent rates. The UT System is committed to improving graduation success (<u>www.</u> <u>utsystem.edu/osm/files/researchbriefs/RB002-GradRates-Nov2010.pdf</u>), and it is important to understand that "administrative cost" is a broad term and includes costs critical for improving graduation success of students.

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**Fig 3b # of Employees per 100 Students,** UT Average vs. All Public Institutions, 2007



# Comparative Goldwater Analyses for UT Academic Institutions

In December 2010, the UT System Office of the Controller completed an analysis of the data in the Goldwater Institute's policy report as it related to the eight public Texas institutions included in the report four UT institutions (UT Arlington, UT Austin, UT Dallas, UT El Paso) and four other Texas public institutions (Texas A&M, Texas Tech, University of Houston, and University of North Texas). A summary of the key findings follows.

#### Employees per 100 Students

Figures 3*a* and 3*b* show that employees per 100 students have increased at the four UT institutions. More importantly, however, they also illustrate the relatively low employee count per 100 exhibited by the UT institutions, both at the beginning of the comparison period (1993) and at the end of the period (2007).

In 1993, the UT institutions' average number of total employees per 100 students was only 62% of the average for all public institutions in the nation. In 2007, despite increases, the total was still only 67% of the national average. The average number of administrative employees was only 65% of the national average in 2007.

#### Spending per Student

Figures 4*a* and 4*b* illustrate a comparison of the perstudent spending by the four UT institutions with that of the average of all public institutions in the report. As is the case with employee counts, while the dollar amounts have grown over the 1993-2007 period (Figure 4a), the 2007 spending average for the UT institutions is well below the spending level for all public institutions (Figure 4b). In 2007, the average for total spending per student of the UT institutions is barely more than half (54%) of the national average. Average UT spending for administration is 65% of the national average, while spending for instruction is 68%. Additional information and comparisons of these data to other Texas institutions are included in the Controller's full report, which can be found at:

www.utsystem.edu/cont/Reports\_Publications/GoldwaterReport.pdf



#### Fig 4b Spending per Student UT Average vs. All Public Institutions, 2007



Avg 4 UT Institutions

Avg All Public Institutions

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### Responsible Administration at UT

Over the past decade, UT institutions have maintained relatively low administrative costs while meeting major challenges: expanding access, improving student success, increasing research, and improving national rankings. These UT successes required additional faculty and staff to serve greater numbers of students and to improve student support services for increasing graduation success.

#### Proportion of Administrative Costs

From 2001 to 2010, total administrative costs for the UT System academic institutions have risen at a slower rate than total expenses, so the proportion of administrative costs to total expenses has remained stable at 7% to 8% (Figure 5).

Figure 6 shows that administrative costs at UT universities are declining as a percentage of total expenditures. UT Austin has had a stable administrative cost ratio from 2001 to 2010 with the second lowest ratio in the state at 6%. All other UT universities have had declining administrative cost ratios, with the highest reductions at UTB, UTEP and UTPB - 21%, 23% and 33% respectively.





2001 2010

## III. UT System Efficiency Initiatives

The University of Texas System Office of Finance recently updated its Cost Efficiency Report documenting the impressive results of ongoing System-level efficiency initiatives. This work captures actual savings, costs avoided, and interest earned on investments over the past five years. It reflects only system-level initiatives and does not include campus-specific productivity initiatives.

Figure 7 illustrates that, through actions taken by UT System, over \$1.42 billion of savings, avoided costs, and increased investment earnings have been generated in the last five years (including \$565 million in 2010 alone). While a significant portion of these savings are cost avoidance items, they do reflect true value added. For example, the UT System Shared Journal Collection saves \$60 to \$70 million per year compared to purchasing those journals for each of the participating



campuses, although it is unlikely that the campuses would (or could) each expend the resources to purchase all of these journals separately. Still, the savings are impressive and represent many actual dollars that have been saved or reallocated toward mission critical activities.

Table 2 on page 11 provides summary details of each of the initiatives and how they are responsive to the three well-circulated external reports of efficiency recommendations: (1) Bain and Company, UC Berkeley; (2) THECB report on higher education cost efficiencies; and (3) The Center for College Affordability's "25 Ways to Reduce the Cost of College."

# Conclusions

The UT System is dedicated to becoming <u>more</u> productive and efficient while continuing to methodically measure our progress over time. This research brief documents the responsiveness of the UT System to both of these goals.

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This analysis of the UT System finds that:

- Our academic universities are more efficient at producing degrees than appropriate benchmark groups, based on the nationally recognized Delta Project methodology (37% more efficient on average).
- UT System academic institutions have demonstrated responsible use of resources for administration.
- UT System efficiency initiatives have netted over \$1.42 billion in savings, avoided costs, and increased investment earnings generated, over the past 5 years (including \$565 million in 2010 alone).

Even though productivity is very important, it is not the only objective of the UT System. As with any examination of performance in a particular area, balance is critical and there remain opportunities for improvement. Evaluating universities' efficiency and productivity must be balanced with other important objectives such as increasing quality, access, graduation success, and research competitiveness.

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Table 2       UT System Cost Efficiencies, 2006-2010								
			Savings / Costs Avoided / Value Generated					
Initiative	Description	Academic	Health	System				
ENERGY USE								
System-wide Energy Reduction Goals & Measurement Process	Energy Utilization Task Force works with campuses in reviewing energy use and targeting reductions and annually reports energy usage against targets.	\$81.2 M	\$14.3 M	\$95.5 M				
COOPERATIVE CONTRACTING & PURCHASING								
Supply Chain Alliance	The six health institutions have banded together in a sophisticated strategic sourcing alliance and supply chain management project.	\$8.0 M	\$45.0 M	\$53.0 M				
Shared Journal Collection	UT Libraries joined with four other Texas universities (Rice, U Houston, TAMU, and Texas Tech) to establish the Texas Digital Library.	\$195.3 M	\$135.7 M	\$331.0 M				
Oracle System- wide Software Site License	A site license agreement with Oracle for use of its PeopleSoft administrative software systems and various other products.	\$15.3 M	\$7.1 M	\$22.4 M				
Multiple Non- Exclusive System- wide Contracts	<ul> <li>Master Banking Services, Master Depository, and Merchant Card Processing Agreements</li> <li>Contracts for hazardous, medical, and radioactive wastes; disaster recovery; and spill control/ emergency response</li> <li>System-wide Microsoft contract</li> <li>Website security contract</li> <li>System-wide executive search contracts</li> </ul>	\$11.9 M	\$11.3 M	\$23.2 M				
OTHER SHARED SEI	RVICES INITIATIVES							
The shared services n responsiveness of loca realize significant cost	nodel leverages the efficiencies and economies of scale al governance. Through numerous shared services activi savings, enhance efficiency through standardization, an	while allowing to ties the UT Sys d promulgate io	he flexibility ar tem has been lentified best p	nd able to practices.				
<ul> <li>Shared regional da</li> <li>A joint implementat UTD, UTT</li> <li>Joint online Effort F</li> <li>Joint implementation institutions</li> </ul>	ta centers (Arlington, Houston) ion of a Shared Student Information System for UTA, Reporting System at all UT campuses on of an HR/Finance system for seven academic	\$88.7 M	\$16.6 M	\$105.3 M				
DEBT MANAGEMEN	T & CENTRALIZED INVESTMENT							
<ul> <li>Debt restructuring a</li> <li>Lowered bond issu</li> <li>Effective managem</li> <li>Pool and centrally i</li> </ul>	and refinancing ance costs ent of System debt program nvest institutional operating reserves	\$208.4 M	\$196.0 M	\$404.4 M				

Table 2         UT System Cost Efficiencies, 2006-2010							
		Savings / Costs Avoided / Value Generated					
Initiative	Description	Academic	Health	System			
INSURANCE							
Rolling Owner Controlled Insurance Program	Consolidated the purchase of Workers Compensation and General Liability insurance coverage for all contractors on UT System managed construction projects	\$22.1 M	\$18.4 M	\$40.5 M			
System Management of Compensation Insuran	\$19.7 M	\$176.5 M	\$196.2 M				
EMPLOYEE BENEFITS & SERVICES							
<ul> <li>Reduced administrative fees on the multiple employee benefits contracts</li> <li>Reduced costs on pharmacy and vision contracts</li> <li>Pursued and received federal subsidies for Early Retirement Insurance Program and Medicare Part D</li> <li>Implemented the first online "Evidence of Insurability" system</li> </ul>		\$43.6 M	\$88.6 M	\$132.2 M			
ORGANIZATIONAL & OTHER EFFICIENCIES							
Reductions in administrative positions	At the request of the Board of Regents and under the direction of the Chancellor an organizational review was conducted of System offices which resulted in the reduction of 84 positions	\$5.5 M	\$11.1 M	\$16.6 M			
Operational Changes	<ul> <li>Relocation of University Lands Accounting to Midland</li> <li>Outsourced UT System Admin Complex building security to UT Austin</li> <li>Outsourced UT System Admin Complex custodial services</li> <li>Decommissioning the Law Library</li> </ul>	\$0.9 M	\$1.9 M	\$2.8 M			
TOTAL		\$700.6 M	\$722.4 M	\$1.423 B			

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