Show Them the Money: How to Use Wage Records to Inform Multiple Audiences

UT System Office of Strategic Initiatives

Dr. David Troutman, Director
Dr. Mehary Stafford, Senior Research & Policy Analyst
Cathy Delgado, Research & Policy Analyst
Paradigm Shift: Student Flow Continuum

ACCESS

Recruitment → Applications → Admits → Enrolled Students → Classroom Experience → Attain Degree → Career/Post Graduate Education

SUCCESS

LABOR OUTCOMES

ACCESS

SUCCESS

LABOR OUTCOMES

Recruitment → Applications → Admits → Enrolled Students → Classroom Experience → Attain Degree → Career/Post Graduate Education

2
Articles on Earnings

- High-earning jobs to help pay off student loans faster
- Earnings Gap Narrows, but College Education Still Pays, Report Says
- 2 Years of For-Profit College? Earnings No Better Than After High School
- First-Year Earnings Depend More on Major Than on College, Study Finds
- Obama Is Urged to Toughen “Gainful Employment” Rule
FERPA Regulations

• Research exemption for FERPA
  – School officials with legitimate educational interests

• As of January 3, 2012
  – Expanded the circumstances under which education records may be accessed without consent
    • Federal and State Authorities
    • Collect, compile, permanently retain, and share education records
    • Linking personally identifiable information with unemployment insurance, workforce development, and military service
Project Goals

• Provide students information to make informed decisions and set realistic expectations
• Demonstrate the value added of higher education
• Move the concept of “success” beyond graduation to employment
• Enable institutions to match educational offerings to workforce demand
• Implement recommendations of the 2012 UT System Student Debt Task Force
• Develop a national model
The Big Picture

- Value of creative partnerships between educational institutions and state agencies
  - Unique solutions to roadblocks, including sharing FTE employees
- Value of Information yielded from individual-level education and earnings data
  - Relationship between degree major, student debt, and earnings
  - Important research studies on Pell students, veterans, and underrepresented minorities
  - Return on investment (state appropriations) in higher education through state revenue
  - Supply of educated students in high-demand fields
The Big Picture - Impact on the State

- **Education** From 2007-2011, 40,397 total graduates with bachelor’s degrees in STEM and health-related fields.

- **Workforce** 88% of baccalaureates from health-related institutions over the past five years were found working in Texas the first year after graduation. 75% were found working full time in Texas.

  - For comparison purposes, total state appropriations (general revenue) for UT System for the same period were $9.9 billion.
  - For every $1 in state appropriations, $2.07 in earnings.
The Big Picture

• Important pieces of missing information
  – Occupation code in the wage record
  – A national view – improved ability to follow students across state lines

• Empower students and families
  – More than a research tool, also a powerful knowledge for students
Environmental Scan: Methodological Approaches
Obama’s College Score Card

• Higher education is a big investment for students, parents and tax payers
• Understanding the cost and return on investment prior to/while attending college will empower students and families to make informed decision about their educational and career choices
• President Obama’s college score card, among other things, requires every degree granting institution in the country to provide employment outcomes information to students and families
Student Right to Know Before You Go ACT of 2013

• Reporting requirements for institutions of higher education to provide accurate and complete data on student retention, graduation, and earnings outcomes at all levels of postsecondary enrollment
Methodological Approaches

• Following the president’s call, there has been a growing interest in the economic value of a four-year degree and how much college graduates are making after completing a degree.
• Various methodological approaches have been implemented to provide such data to stakeholders.
• We will review some of the methods used by PayScale, College Measures (three states) and The University of Texas System (Office of Strategic Initiatives).
• Some states reported average earnings while others reported median wage.
- All data used to produce the PayScale 2013-14 College Salary Report was collected from individuals searching online for salary comparison information.
- The PayScale Salary Survey is an online survey that asks questions about salary, experience and the workplace.
- This report anonymously compares individuals to other people with similar attributes such as job title, location, company size and education.
- PayScale Salary Survey data is for bachelor's graduates without higher degrees who are full-time employees in the United States.
Payscale

• Starting salary includes everyone with five years or less experience
• Pay data is updated daily in the PayScale database
• These results do not represent all attendees of these colleges
• Salary is the sum of compensation from base salary, bonuses, profit sharing, commissions, and overtime, if applicable, but does not include equity (stock) compensation
College Measures

• College Measures partners with States to present data on post-graduation labor market outcomes
  – Arkansas, Colorado, Florida, Tennessee, Texas and Virginia
• Each state used its own methodology
• Methods used by three states are presented to provide similarities and differences with UT System’s analyses of wage data
Florida

- Florida reported only first year earnings
- Data are based on 4th quarter of 2011 (October to December)
- Full time earnings is defined as 13 weeks earnings and wage>= $3,801
- Analyzed one cohort (summer and fall, 2010, Spring 2011 graduates)
- Median wages are derived from quarterly earnings multiplied by four
  - Annual median wage = 4th quarter earnings * 4
Colorado

- Five-year cohort data combined as one cohort. Single-year data is not reported, only rolling five-year aggregates.
- Federal employees are not included.
- Dual degree recipients (same level) are counted more than once.
- Earnings data collected for the period 7-9 months after graduation.
Colorado (cont’d)

- Report includes graduates with earnings greater than a minimum threshold of $3,253.25 for each quarter (four quarter minimum rule) and an annual wage $12,973 (the minimum wage is set at $7.15 per hour)
- Earnings from part-time employment are included as long as they met the minimum requirement
Texas (THECB)

- The cohort includes all completers from undergraduate and graduate programs offered by Texas institutions graduating during the most recent five consecutive years
  - For example, the 2010 cohort includes all graduates from the last five years, beginning with 2006
- Single year data are not reported
- Median wage calculations includes completers with any earnings
Texas (cont’d)

• Program needs to have at least 10 graduates and more than 5 graduates with a minimum wage or more
• Wage data for four consecutive quarters starting six months after graduation
• Wages are adjusted for inflation using BLS CPI calculator
UT System: Methodological Approach
UT System Methodology: Calculating Wage

• Annual median wage
  – For all graduates of UT System institutions
  – Based on a full calendar year’s earnings
  – Aggregate earnings by major and institution type
  – Cross sectional

<table>
<thead>
<tr>
<th>Graduating Cohorts</th>
<th>Yr 1</th>
<th>Yr 2</th>
<th>Yr 3</th>
<th>Yr 4</th>
<th>Yr 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-08</td>
<td>2009</td>
<td>2010</td>
<td>2011</td>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>2008-09</td>
<td>2010</td>
<td>2011</td>
<td>2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009-10</td>
<td>2011</td>
<td>2012</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010-11</td>
<td>2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Calculating Wage: Who Are Included?

- Only the following are included in the aggregate median wage calculations:
  - Employed “full-time,” full-year
  - Employed in the state of Texas (in most cases)
  - Students graduating from a UT System institution
  - Majors with five or more graduates with wage matches
Matching Student Records

Graduating Cohorts

2006-07
2007-08
2008-09
2009-10
2010-11

Employment Outcomes

Employed in Texas (TWC)

Continue Education: Student Tracker
Invalid SSNs
Employed Outside Texas: WRIS II
Self-employed
# Match Rates (Employed in Texas)

## ACADEMIC INSTITUTIONS

### All:
Any wage record during the calendar year

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Year1</th>
<th>Year2</th>
<th>Year3</th>
<th>Year4</th>
<th>Year5</th>
</tr>
</thead>
<tbody>
<tr>
<td>UT Arlington</td>
<td>79%</td>
<td>75%</td>
<td>74%</td>
<td>72%</td>
<td>70%</td>
</tr>
<tr>
<td>UT Austin</td>
<td>66%</td>
<td>62%</td>
<td>61%</td>
<td>60%</td>
<td>58%</td>
</tr>
<tr>
<td>UT Brownsville</td>
<td>86%</td>
<td>86%</td>
<td>86%</td>
<td>86%</td>
<td>84%</td>
</tr>
<tr>
<td>UT Dallas</td>
<td>74%</td>
<td>72%</td>
<td>72%</td>
<td>70%</td>
<td>69%</td>
</tr>
<tr>
<td>UT El Paso</td>
<td>75%</td>
<td>72%</td>
<td>71%</td>
<td>70%</td>
<td>69%</td>
</tr>
<tr>
<td>UT Pan American</td>
<td>86%</td>
<td>85%</td>
<td>85%</td>
<td>84%</td>
<td>85%</td>
</tr>
<tr>
<td>UT Permian Basin</td>
<td>88%</td>
<td>86%</td>
<td>84%</td>
<td>82%</td>
<td>80%</td>
</tr>
<tr>
<td>UT San Antonio</td>
<td>81%</td>
<td>79%</td>
<td>77%</td>
<td>76%</td>
<td>75%</td>
</tr>
<tr>
<td>UT Tyler</td>
<td>86%</td>
<td>83%</td>
<td>82%</td>
<td>82%</td>
<td>79%</td>
</tr>
</tbody>
</table>

### Full-time employed:
4 quarters of wage records w/in the calendar year

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Year1</th>
<th>Year2</th>
<th>Year3</th>
<th>Year4</th>
<th>Year5</th>
</tr>
</thead>
<tbody>
<tr>
<td>UT Arlington</td>
<td>57%</td>
<td>57%</td>
<td>58%</td>
<td>58%</td>
<td>58%</td>
</tr>
<tr>
<td>UT Austin</td>
<td>41%</td>
<td>42%</td>
<td>42%</td>
<td>43%</td>
<td>45%</td>
</tr>
<tr>
<td>UT Brownsville</td>
<td>57%</td>
<td>65%</td>
<td>68%</td>
<td>69%</td>
<td>70%</td>
</tr>
<tr>
<td>UT Dallas</td>
<td>51%</td>
<td>53%</td>
<td>55%</td>
<td>55%</td>
<td>56%</td>
</tr>
<tr>
<td>UT El Paso</td>
<td>45%</td>
<td>50%</td>
<td>52%</td>
<td>54%</td>
<td>56%</td>
</tr>
<tr>
<td>UT Pan American</td>
<td>58%</td>
<td>64%</td>
<td>68%</td>
<td>69%</td>
<td>71%</td>
</tr>
<tr>
<td>UT Permian Basin</td>
<td>63%</td>
<td>66%</td>
<td>67%</td>
<td>66%</td>
<td>63%</td>
</tr>
<tr>
<td>UT San Antonio</td>
<td>54%</td>
<td>57%</td>
<td>59%</td>
<td>60%</td>
<td>61%</td>
</tr>
<tr>
<td>UT Tyler</td>
<td>63%</td>
<td>64%</td>
<td>65%</td>
<td>66%</td>
<td>66%</td>
</tr>
</tbody>
</table>
### Match Rates (Employed in Texas)

#### HEALTH INSTITUTIONS

**All:**
Any wage record during the calendar year

<table>
<thead>
<tr>
<th>Institution</th>
<th>Year1</th>
<th>Year2</th>
<th>Year3</th>
<th>Year4</th>
<th>Year5</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSC-Houston</td>
<td>70%</td>
<td>65%</td>
<td>64%</td>
<td>63%</td>
<td>62%</td>
</tr>
<tr>
<td>HSC-San Antonio</td>
<td>74%</td>
<td>71%</td>
<td>71%</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>M.D. Anderson</td>
<td>80%</td>
<td>79%</td>
<td>72%</td>
<td>75%</td>
<td>70%</td>
</tr>
<tr>
<td>SWMC</td>
<td>65%</td>
<td>58%</td>
<td>56%</td>
<td>53%</td>
<td>50%</td>
</tr>
<tr>
<td>UTMB-Galveston</td>
<td>77%</td>
<td>73%</td>
<td>72%</td>
<td>73%</td>
<td>71%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>72%</td>
<td>68%</td>
<td>67%</td>
<td>66%</td>
<td>64%</td>
</tr>
</tbody>
</table>

**Full-time employed:**
4 quarters of wage records within the calendar year

<table>
<thead>
<tr>
<th>Institution</th>
<th>Year1</th>
<th>Year2</th>
<th>Year3</th>
<th>Year4</th>
<th>Year5</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSC-Houston</td>
<td>58%</td>
<td>55%</td>
<td>52%</td>
<td>51%</td>
<td>51%</td>
</tr>
<tr>
<td>HSC-San Antonio</td>
<td>61%</td>
<td>62%</td>
<td>60%</td>
<td>59%</td>
<td>59%</td>
</tr>
<tr>
<td>M.D. Anderson</td>
<td>62%</td>
<td>65%</td>
<td>63%</td>
<td>62%</td>
<td>65%</td>
</tr>
<tr>
<td>SWMC</td>
<td>52%</td>
<td>49%</td>
<td>43%</td>
<td>42%</td>
<td>39%</td>
</tr>
<tr>
<td>UTMB-Galveston</td>
<td>66%</td>
<td>65%</td>
<td>61%</td>
<td>62%</td>
<td>59%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>60%</td>
<td>59%</td>
<td>55%</td>
<td>54%</td>
<td>53%</td>
</tr>
</tbody>
</table>
One-Year Match Rates (Baccalaureate Earners)

UT System: Academic & Health Institutions

- **Full-time workers = 49%**
  - Of these, 14% found enrolled
- **Part-time workers = 30%**
  - Of these, 34% found enrolled
- **Not found working = 21%**
  - Of these, 31% found enrolled
What Are Baccalaureates Doing?

- **What is Other?**
  - Could be working in states like CA and NY which don’t report
  - Could have left the country
  - Could be self-employed
  - Could be unemployed
  - Might have left—or never entered—the workforce

- **78% of UT graduates are working in Texas their first year after graduation**
### Who Did We Find Working?

<table>
<thead>
<tr>
<th></th>
<th>Austin</th>
<th>ERUs</th>
<th>CUs</th>
<th>Health</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working – TX, Full Year Full Time</td>
<td>39%</td>
<td>51%</td>
<td>56%</td>
<td>75%</td>
<td>49%</td>
</tr>
<tr>
<td>Working – TX, Other</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>13%</td>
<td>29%</td>
</tr>
<tr>
<td>Working – Out of State</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>&lt;1%</td>
<td>1%</td>
</tr>
<tr>
<td>Total Found Working</td>
<td>70%</td>
<td>82%</td>
<td>87%</td>
<td>88%</td>
<td>79%</td>
</tr>
</tbody>
</table>

Earnings data being reported is based only on those found working full-time for a full year.
**NSC: Fall 2012 Enrollment Rate Coverage**

<table>
<thead>
<tr>
<th>Category</th>
<th>US</th>
<th>TX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>95.2%</td>
<td>95.7%</td>
</tr>
<tr>
<td>All 4-yr institutions</td>
<td>95.6%</td>
<td>97.8%</td>
</tr>
<tr>
<td>All 2-yr institutions</td>
<td>94.4%</td>
<td>93.5%</td>
</tr>
<tr>
<td>All public institutions</td>
<td>99.1%</td>
<td>98.6%</td>
</tr>
<tr>
<td>All private, not-for-profit</td>
<td>93.6%</td>
<td>93.6%</td>
</tr>
<tr>
<td>All private, for-profit</td>
<td>68.0%</td>
<td>1.3%</td>
</tr>
<tr>
<td><strong>Public, 4-yr</strong></td>
<td><strong>99.6%</strong></td>
<td><strong>100.0%</strong></td>
</tr>
<tr>
<td>Private, not-for-profit, 4yr</td>
<td>94.3%</td>
<td>96.9%</td>
</tr>
<tr>
<td>Private, for-profit, 4yr</td>
<td>78.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Public, 2yr</td>
<td>98.6%</td>
<td>97.4%</td>
</tr>
<tr>
<td>Private, not-for-profit, 2yr</td>
<td>32.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Private, for-profit, 2yr</td>
<td>26.1%</td>
<td>2.0%</td>
</tr>
</tbody>
</table>
NSC: Student Tracker

- A research service that provides continuing collegiate enrollment & degree information
- Provided for the following students
  - Current
  - Former
  - Former admission applicants
WRIS 2

- The Wage Record Interchange System 2
- 31 states
- Sharing state wage data in aggregate form
- Voluntary participation
To Complete the Picture: Student Loan Debt

- Calculated for those enrolled at the institution as FTIC
- Calculation includes only those who borrowed
- Reflect amounts incurred while attending our institutions
- Reported by major and institution type
Where Does the Data Come From?

- Student data comes from OSI files
  - Texas Higher Education Coordinating Board
    - CBM009 (Graduation Report)
    - FADS (loan debt data)
  - National Student Clearinghouse’s Student Tracker
- Earnings data comes from the Texas Workforce Commission
  - UI Wage Records
- Occupation data comes from the Bureau of Labor Statistics and Texas Workforce Commission
Getting from A to Z: Wage Records

• OSI did not have direct access to wage records
• TWC provided a description of fields available to them & then OSI created simulated wage data along w/ SAS code to test output
• OSI built a massive student dataset and then shared this dataset and the tested SAS code w/ TWC for them to match to their wage records
• TWC would then return aggregate Excel output that the SAS code would produce
  – File transfers occur using TWC’s secure file transfer appliance, which is managed and on the premises at the TWC
What Does the Data Look Like?

- 5 graduating cohorts
- 5 years of salary history
  - Cross-sectional
  - Longitudinal

<table>
<thead>
<tr>
<th></th>
<th>1st-Yr</th>
<th>2nd-Yr</th>
<th>3rd-Yr</th>
<th>4th-Yr</th>
<th>5th-Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>2008</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A Variety of Wage Outcomes

- 1st Year Earnings
- 3rd Year Earnings
- 5th Year Earnings
- Wage Breakdown:
  - By academic characteristics
  - By demographic characteristics
Things to Keep in Mind About the Wage Data

- Majority of wage records are for Texas employment only
- Do not know if employment related to field of study
  - TWC has industry codes related to wage but not occupational title
- Do not know number of hours worked
Earnings of Graduates by Carnegie Classification
Earnings by Carnegie Classification

- The System wide examination of wage has provided empirical analysis of economic payoff of obtaining a degree.
- Labor market outcomes of baccalaureate and graduate degree recipients are analyzed by discipline and type of institution attended (Carnegie classification).
- Median salary varies by degree level, major and type of institution attended.
- Analyzing wage data only by major may not provide a complete picture.
- Reporting median salary without disaggregating by major can also lead to insignificant research for there are variations in earnings by major.
- Five years of earnings of Baccalaureate and Graduate degree recipients by major and type of institution attended.
- The top/low 10 majors with 6 or more matched students are presented.
Research Questions (within each degree level):

- Do earnings vary based on attending a Research, Emerging Research, or Master’s institution?
- What are the top wages by discipline within the three institution types?
- What are the lower wages by discipline within the three institution types?
UT institutions are classified into three major groupings based on Carnegie classification:
- Very High Research (UT Austin),
- High Research/Emerging Research (UT Arlington, UT Dallas, UT El Paso and UT San Antonio) and
- Master’s (Comprehensive) Universities (UT Brownsville, UT Pan American, UT Permian Basin and UT Tyler).
Graduates by Type of Institution

<table>
<thead>
<tr>
<th>Graduating Cohort</th>
<th>Research</th>
<th>Emerging Research</th>
<th>Master's</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>8,202</td>
<td>12,054</td>
<td>4,734</td>
<td>24,990</td>
</tr>
<tr>
<td>2008</td>
<td>8,282</td>
<td>12,350</td>
<td>4,750</td>
<td>25,382</td>
</tr>
<tr>
<td>2009</td>
<td>8,220</td>
<td>12,902</td>
<td>5,366</td>
<td>26,488</td>
</tr>
<tr>
<td>2010</td>
<td>8,476</td>
<td>13,459</td>
<td>5,399</td>
<td>27,334</td>
</tr>
<tr>
<td>2011</td>
<td>8,534</td>
<td>14,490</td>
<td>5,417</td>
<td>28,441</td>
</tr>
<tr>
<td>Total</td>
<td>41,714</td>
<td>65,255</td>
<td>25,666</td>
<td>132,635</td>
</tr>
</tbody>
</table>
What are the top wages by discipline within the three institution types?

- Top 10 first year wages by discipline within the three institution types
- Top 10 fifth year wages by discipline within the three institution types
- Majors with less than 6 graduates are suppressed
What are the lower wages by discipline within the three institution types?

- Lowest 10 first-year wages by discipline within the three institution types
- Lowest 10 fifth-year wages by discipline within the three institution types
- Majors with less than 6 graduates are suppressed
Findings

• One observation from this study is that Research Universities appear to be better investments. At the baccalaureate degree level, students who attended a Research University consistently enjoyed a large salary premium.

• The data revealed the difference between earnings of similar majors who graduated from different institution types.
  – Mechanical engineers who graduated from a Research University earned more than those who graduated from an Emerging Research or Master’s institutions.
  – Business/Commerce Majors who graduated from a Research University are top earners while those who graduated from a Master’s University have the lowest median salary.

• However, there is no big difference between median wages of Aerospace Engineering graduates of Research and Emerging Research Universities.
Findings

• The second significant finding is that Engineering and Health related degrees provide substantial earnings prestige to individuals who obtain them
  – Having an Engineering degree increases the prospect of entering high earning jobs across institution types
  – Engineers are working in high income careers and enjoyed higher annual median earnings in the labor market

• Engineers earned higher over the five year period indicating occupational stability
Findings

• The third general finding is that, there is a wage difference between majors with different academic rigor and requirements
  – An engineering degree has earnings advantage over Humanities, Social Sciences and Visual and Performing Arts graduates that are far less compensated than their peers
Summary

- Unlike other reports that used self-reported salary, this study used actual full year wage data. Students, parents, institutions and policy makers can make informed decisions about future potential earnings of UT System graduates based on accurate and reliable data.
- Findings from this study provide information to students, family and counselors about students’ realistic earning potential after graduation.
- They will have an idea of what the return on their investment in college will be. Had the graduates known their true employment prospects would they attend our institutions?
- Institutions need to align programs with labor market outcomes so that graduates will enjoy favorable earnings. This can be achieved by linking majors to occupation and workforce needs of the state (and country).
- Not only majors but where students earned their degree also matters. Invest in Emerging Research and Master’s Universities to prepare students to high earning jobs.
EARNINGS OF MASTER’S AND DOCTORAL GRADUATES
Summary of Findings

- The findings point to the existing earnings difference by degree level, major and type of institution attended.
- Earnings of graduates of like majors do vary by type of institution attended.
- Engineers who graduated from a Research University with a master’s and doctoral degree are top earners.
- At the master’s degree level the most lucrative majors list is dominated by engineering graduates.
- Graduates who majored in Business Administration, Geology/Earth Science and Multi-/Interdisciplinary Studies are also among the top earners that enjoyed higher median annual wage throughout the five year period.
Summary of Findings

- Some majors start low but they become top earners as the years go by (e.g., Finance majors). First year median wage of Finance majors was low but by the third year they were top earners.
- Some fields are well compensated with a doctorate degree:
  - For example, Economics majors with a master’s degree are one of the least prominent majors with a first year median salary of $26,344. However, at the doctoral level they are one of the most lucrative majors with first year median wage of $98,006.
- At Emerging Research Universities Real Estate majors have the highest gain from first to fifth year ($61,501).
- In all institution types the most lucrative majors are Engineering, Health-related, Computer Science, and Business-related majors.
Summary of Findings/Implications

• Differences in earnings are driven by degree level, students’ majors and type of institution attended
• Major has a significant influence on potential earnings
  – Institutions need to provide such information so that students will have an idea about their post-graduation employment outcomes. Students can use this information in choosing a major
• As colleges are more and more linked to occupation there needs to be a close tie between institutions and the labor market/industry
• Institutions need to align graduate programs with labor market outcomes so that graduates will be rewarded economically (enjoy favorable earnings)
References/Resources

- https://www.utsystem.edu/seekut/
- http://www.whitehouse.gov/issues/education/higher-education
- http://collegemeasures.org/esm/
- http://nces.ed.gov/collegenavigator/?s=TX&l=93+94&ct=1&ic=1
Income to Debt Ratio
Demonstrating the Value – Earnings to Debt Ratio

• A new measure to demonstrate value:
  – On average, for every $1 of debt incurred, there was how much in earnings…over time?

• Debt is accumulated over time; it’s important to consider the \textit{cumulative} return on investment
Visualize: Earnings to Debt Ratio

Year 1
- Earnings: $2,000
- Starting Loan Debt: $20,000
- Year 1 Earnings: $44,000

Year 2
- Earnings: $4.5
- Year 2 Earnings: $90,000

Year 3
- Earnings: $6.8
- Year 3 Earnings: $136,000
Looking at Baccalaureates graduating from Emerging Research Institutions in 2006-07 with a degree in a Social Sciences field.

Criminology: In their first year, they earned about $9 for every $1 in debt they had accumulated. By their fifth year they had earned more than $50 for every $1.
Income to Debt Ratio Tool
seekUT: Website and Online Tool
seekUT

- Project charter
- seekUT website
- seekUT tool
- Students comments
Project Charter

• Why create a project charter?
  – Help define the scope & overall priority of the project (activities and resources needed)
  – Align with the organization’s overall strategy and mission
Project Charter

• Highlights from the Charter
  – Outgrowth of the Student Debt Reduction Task Force and Chancellor’s Framework for Advancing Excellence
  – Main goal: Help students & their families make informed decisions about their academic careers by providing:
    • Employment earnings- 1st 5 years after graduation
    • Average student loan debt by degree major
A New Tool for Students

- Follows students over time (currently 5 years)
- Provides earnings in the context of average loan debt, by major
- Offers ability to compare earnings and debt by various majors side-by-side
- Goes beyond the median to show various percentiles
- Indicates the percent of students who continue their education beyond the BA
- Includes integrated view of labor market demand by occupation (BLS) – state, regional, and national
TOP FIVE SALARIES FOR UT SYSTEM GRADUATES WITH BACHELOR’S DEGREES IN STEM FIELD OF STUDY

- Petroleum Engineering: $110,537
- Geological and Earth Sciences: $119,803
- Physician Assistant: $115,667
- Chemical Engineering: $94,195
- Geophysics and Seismology: $77,000
- Materials Science and Engineering: $73,776

Header Goes Here

It can be hard to predict exactly how the choices you make today can impact your future. The UT System's new data tool seekUT can help you. It can't predict the future. But it can tell you what the loan amounts and earnings of past UT graduates have been and help you make the decisions about your education that are right for you and your family.
How much did UT students graduating with a bachelor’s degree earn in Texas? How much did they owe in student loans?

1. I am interested in:
- Business, Management, Marketing, and Related Support Services

2. I am interested in attending:
- UT Arlington, UT Dallas, UT El Paso, UT San Antonio
- UT Austin
- UT Brownsville, UT Pan American, UT Permian Basin, UT Tyler

3. In my area of interest, I might want to major in:
- Accounting
- Actuarial Science
- Banking and Financial Support Services
- Business Administration and Management, General
- Business/Commerce, General
- Business/Managerial Economics
- Entrepreneurship/Entrepreneurial Studies
- Finance, General
- Human Resources Management/Personnel Administration, General
- International Business/Trade/Commerce
- Management Information Systems, General
- Management Science
- Marketing/Marketing Management, General
- Operations Management and Supervision
- Real Estate
- Sales, Distribution, and Marketing Management, General

Program Description, Median 1-Year Earnings, Median 5-Year Earnings and Average Student Loan Debt

<table>
<thead>
<tr>
<th>Degree Major</th>
<th>Description</th>
<th>1st-Year Median Earnings</th>
<th>5th-Year Median Earnings</th>
<th>Average Student Loan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>A program that prepares individuals to practice the profession of accounting and to perform related business functions. Includes instruction in accounting principles and theory, financial accounting, managerial accounting, cost accounting, budget control, tax accounting, legal aspects of accounting, auditing, reporting procedures, statement analysis, planning and consulting, business information systems, accounting research methods, professional standards and ethics, and applications to specific for-profit, public, and non-profit organizations</td>
<td>$44,569</td>
<td>$58,844</td>
<td>$20,065</td>
</tr>
<tr>
<td>Business Administration and</td>
<td>A program that generally prepares individuals to plan, organize, direct, and control the functions and processes of a firm or organization</td>
<td>$39,223</td>
<td>$50,089</td>
<td>$18,623</td>
</tr>
</tbody>
</table>
What Does the Student Do?

• Step 1: Selects a broad field → Business

• Step 2: Selects institution → UT Arlington, UT Dallas, UT El Paso, UT San Antonio

• Step 3: Selects specific degree majors to narrow the focus (optional) →
  Accounting
  Business Administration
  Marketing
What Does the Report Show?

Chart
- 1st-year median earnings (blue)
- 5th-year median earnings (green)
- Average student loan debt (red)

Table provides another view of the data and adds helpful descriptions
How much did the earnings of UT graduates in Texas vary within a major?

1. I am interested in:
   - Business, Management, Marketing, and Related Support Services

2. I am interested in attending:
   - UT Arlington, UT Dallas, UT El Paso, UT San Antonio
   - UT Austin
   - UT Brownsville, UT Pan American, UT Permian Basin, UT Tyler

3. In my area of interest, I might want to major in:
   - Accounting
   - Actuarial Science
   - Banking and Financial Support Services
   - Business Administration and Management, General
   - Business/Commerce, General
   - Business/Management/Conference
   - Entrepreneurship/Entrepreneurial Studies
   - Finance, General
   - Human Resources Management/Personnel Administration, General
   - Information Systems, General
   - Management Science
   - Marketing/Marketing Management, General
   - Operations Management and Supervision
   - Real Estate
   - Sales, Distribution, and Marketing Operations, General
   - Tourism and Travel Services Management

What do the percentiles mean?

10th percentile - those had earnings at the lower end. 10% had earnings less than this. 90% had higher earnings

Median - this is the 50th percentile. 50% had earnings less than this. 50% had higher earnings

90th percentile - those had earnings at the higher end. 90% had earnings less than this, only 10% had higher earnings
Which jobs in Texas will have the most growth? What do people working in those jobs in Texas earn?

1. I am interested in
   - Business and Financial Operations Occupations

2. I would like to find out more about
   - (missing values)
   - All Business and Financial Operations Occupations
   - Business Operations
   - Financial Specialists

Filter on Education Requirements

Occupations Outlook for Texas (Statewide)

<table>
<thead>
<tr>
<th>Occupation Title</th>
<th>Texas Median Annual Wage</th>
<th>TX Jobs 2010</th>
<th>TX Jobs 2020</th>
<th>Texas Job Growth</th>
<th>National Job Growth</th>
<th>Typical Education Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountants and Auditors</td>
<td>$63,180</td>
<td>59,480</td>
<td>110,950</td>
<td>22.0%</td>
<td>15.7%</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Appraisers and Assessors of Real Estate</td>
<td>$57,650</td>
<td>6,320</td>
<td>7,430</td>
<td>16.3%</td>
<td>7.4%</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Budget Analysts</td>
<td>$64,930</td>
<td>5,120</td>
<td>5,680</td>
<td>10.3%</td>
<td>10.4%</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Credit Analysts</td>
<td>$59,050</td>
<td>4,770</td>
<td>6,190</td>
<td>29.8%</td>
<td>19.7%</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Credit Counselors</td>
<td>$38,300</td>
<td>4,060</td>
<td>5,660</td>
<td>24.0%</td>
<td>16.4%</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Financial Advisors</td>
<td>$38,300</td>
<td>4,060</td>
<td>5,660</td>
<td>24.0%</td>
<td>16.4%</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Insurance Underwriters</td>
<td>$44,730</td>
<td>6,090</td>
<td>9,440</td>
<td>53.4%</td>
<td>49.0%</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Loan Officers</td>
<td>$77,870</td>
<td>20,450</td>
<td>20,450</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Tax Examiners and Collectors</td>
<td>$74,060</td>
<td>5,390</td>
<td>5,390</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Bachelor’s degree</td>
</tr>
<tr>
<td>Tax Preparers</td>
<td>$58,000</td>
<td>6,400</td>
<td>6,400</td>
<td>0.0%</td>
<td>0.0%</td>
<td>Bachelor’s degree</td>
</tr>
</tbody>
</table>

Source: www.utsystem.edu
Which Texas regions will see the most job growth by occupation?

I'm interested in this region of Texas

Dallas

I'd like to find out more about

Volunteer values

All Business and Financial Operations Occupations

Business Operations

Financial Specialists

Filter on Education Requirements

Type of Education Required

[ ]

Occupation Outlook in Texas Regions

<table>
<thead>
<tr>
<th>Occupation Title</th>
<th>First Annual Openings</th>
<th>Jobs in 2010</th>
<th>Jobs in 2020</th>
<th>Job Growth</th>
<th>Typical Education Required</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountants and Auditors</td>
<td>725</td>
<td>18,900</td>
<td>20,400</td>
<td>23.2%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Appraisers and Assessors of Real Estate</td>
<td>45</td>
<td>1,190</td>
<td>1,370</td>
<td>15.1%</td>
<td>High school diploma or equivalent</td>
<td>Dallas</td>
</tr>
<tr>
<td>Budget Analysts</td>
<td>20</td>
<td>510</td>
<td>610</td>
<td>19.8%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Credit Analysts</td>
<td>55</td>
<td>1,080</td>
<td>1,380</td>
<td>31.4%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Credit Counselors</td>
<td>40</td>
<td>780</td>
<td>970</td>
<td>22.8%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Investment Analysts</td>
<td>12</td>
<td>270</td>
<td>350</td>
<td>30.0%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Loan Officers</td>
<td>25</td>
<td>560</td>
<td>690</td>
<td>23.2%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Tax Preparers</td>
<td>21</td>
<td>135</td>
<td>135</td>
<td>0.0%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Tax Examiners and Collectors</td>
<td>15</td>
<td>90</td>
<td>100</td>
<td>11.1%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Insurance Underwriters</td>
<td>25</td>
<td>135</td>
<td>135</td>
<td>0.0%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Financial Analysts</td>
<td>40</td>
<td>780</td>
<td>970</td>
<td>22.8%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Financial Specialists, All Others</td>
<td>45</td>
<td>900</td>
<td>1,000</td>
<td>11.1%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Personal Financial Advisors</td>
<td>40</td>
<td>780</td>
<td>970</td>
<td>22.8%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Tax Examiners and Collectors</td>
<td>15</td>
<td>90</td>
<td>100</td>
<td>11.1%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
<tr>
<td>Tariffs, Tolls, and Licenses</td>
<td>55</td>
<td>1,080</td>
<td>1,380</td>
<td>31.4%</td>
<td>Bachelor's degree</td>
<td>Dallas</td>
</tr>
</tbody>
</table>

www.UTSYSTEM.EDU
What do people earn in other states?

Annual Median Wage: State vs National

Florida

Occupational Outlook - State vs National

<table>
<thead>
<tr>
<th>Occupation Category</th>
<th>Occupation Title</th>
<th>Annual Wage, 10th Percentile</th>
<th>Annual Wage, Median</th>
<th>Annual Wage, 90th Percentile</th>
<th>Full Time Employment in the Occupation in the State</th>
<th>Jobs In State vs National Median</th>
<th>National Job Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business and Financial Operations</td>
<td>Agents and Business Managers of Artists, Performers, and Athletes</td>
<td>$21,540</td>
<td>$33,760</td>
<td>$87,400</td>
<td>1,010</td>
<td>1.53</td>
<td>$63,130</td>
</tr>
<tr>
<td>Business Operations</td>
<td>Business and Financial Operations</td>
<td>$35,560</td>
<td>$48,670</td>
<td>$76,610</td>
<td>300</td>
<td>0.52</td>
<td>$54,220</td>
</tr>
<tr>
<td>Business Operations</td>
<td>Buyers and Purchasing Agents, Farm Products</td>
<td>$35,080</td>
<td>$54,510</td>
<td>$84,850</td>
<td>26,350</td>
<td>1.39</td>
<td>$58,020</td>
</tr>
</tbody>
</table>
Productivity Dashboard data.utsystem.edu
Explore More Data Visualizations exploredata.utsystem.edu
Follow us on twitter @UTFactsOnline
OSI website at www.utsystem.edu/offices/strategic-initiatives