

The Economic Impact of Texas State University

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Executive Summary

The impact of Texas State on the local, regional and state economies is greater than the direct spending by the University since money spent by the University is spent by employees, businesses, and their workers. As these expenditures give rise to additional business spending, this sets in motion a chain reaction of additional *indirect and induced spending*.

These economic ripple effects impact the local, regional and state economies, and economists use an economic technique known as *Input-Output Analysis* to analyze the multiple impacts that arise. The IMPLAN input-output model was used to carry out this economic impact study.

Table 1: Economic and Employment Impacts of Texas State University

	Direct Spending (in million \$)	Economic Impact (in million \$)	Employment Impact (in FTE jobs)
	Hays County		
Annual Spending			
University and employees spending	339.1	469.6	6,436
Students and visitors spending	473.8	676.0	10,722
Total	812.9	1,145.6	17,158
	Region		
Annual Spending			
University and employees spending	437.5	664.4	7,786
Students and visitors spending	625.7	968.3	15,433
Total	1,063.2	1,632.7	23,219
	State of Texas		
Annual Spending			
University and employees spending	468.0	822.7	8,856
Students and visitors spending	807.1	1,415.2	20,318
Total	1,275.1	2,237.9	29,174

Table 1 shows the economic and (full-time equivalent) employment impacts from Texas State spending (based on the fiscal year ending August 31, 2013) organized into three different geographic regions, Hays County, the Region (Hays plus surrounding counties) and the State of Texas. In this report economic and employment impacts are reported as cumulative, so the economic impact for the Region (Hays County plus the contiguous counties of Bastrop, Blanco, Caldwell, Comal, Guadalupe, and Travis, includes the economic impact of for Hays County shown in the table, and that for the State of Texas includes both

Hays County and the Region.

The annual economic impact on Hays County arising from direct spending by Texas State, its employees and students is \$1.1 billion per year. The employment impact on Hays County is over 17,000 full-time-equivalent jobs. In the Region, which includes Hays plus surrounding contiguous counties, the presence of Texas State gives rise to over \$1.6 billion in economic activity and just over 23,000 full-time-equivalent jobs. The economic impact of Texas State on the State of Texas is over \$2.2 billion with an employment impact of 29,000 jobs.

Well over half (\$1.4 billion) of the \$2.2 billion dollar total impact on the economy of the State of Texas arises from *direct, indirect and induced* spending by the Texas State students and visitors. The remainder (\$822 million) arises as a result of University and employee spending.

The Hays County and Region impacts do not include economic impacts from spending related to the Round Rock campus, whereas the State of Texas impacts do include these. Details pertaining to treatment of the Round Rock campus can be found in the study.

1 Introduction

The impact of Texas State University on the local, regional and state economies is greater than the *direct spending* by the University for payroll, goods and services, and construction, and *direct spending* by Texas State students. This is because money spent by the University (and students) is spent by employees, businesses, and their workers. As employees purchase goods and services from businesses, these businesses make their own purchases and hire employees, who also spend their salaries and wages. Similarly, university expenditures with businesses give rise to additional business spending, and this sets in motion a chain reaction of spending that is labeled *indirect and induced spending* by economists.

The impact of subsequent rounds of additional spending is gradually diminished when savings, taxes, and expenditures are made outside the state (a phenomena labeled *leakages* by economists). This economic ripple effect impacts the local, regional and state economies, and economists use an economic technique known as *Input-Output Analysis* that relies on a series of *multipliers* to provide estimates of the number of times each dollar of *input*, or direct spending, cycles through the economy producing *indirect and induced output*. *Indirect* impacts are the changes in inter-industry purchases as they respond to new demands of directly affected industries. *Induced* impacts measure changes in spending by households as they respond to income increases arising from changes in production.

The economy of the San Marcos Region represents an extremely interdependent set of relationships between various types of economic actors, workers, university faculty and staff, businesses and students. The IMPLAN input-output model (2012, version 4.0) was used to construct dollar value estimates of the economic impact and full-time-equivalent (FTE) employment impacts arising from Texas State spending on 1) *Hays County*, 2) the *Region* defined here as Hays County plus contiguous counties of Bastrop, Blanco, Caldwell, Comal, Guadalupe, and Travis, and 3) the *State of Texas* which consists of all other Texas counties.

We present IMPLAN multipliers when discussing the methodology used for the Texas State impact study and these follow certain conventions. Economic impact multipliers for spending on items such as construction of institutional buildings in the State of Texas are reported as numerical values. The value of 0.87 for spending on construction of institutional buildings indicates that \$1 of direct spending on construction generates another 87 cents worth of spending in the Texas economy, for a total economic impact of \$1.87. Employment multipliers are reported on the basis of \$1 million dollars of direct spending, so an employment multiplier of 7.5 for construction spending indicates that 7.5 (Full-Time-Equivalent) jobs would be created in Texas by indirect and induced effects for every \$1 million spent.

Of course, the direct expenditure of \$1 million dollars on the construction project also generates jobs (specifically, 11.5), so the total employment impact of \$1 million dollars of construction spending on institutional buildings is 19 FTE jobs.

1.1 The Role of Geography

Geography becomes important when measuring the economic impact of spending. The economic ripple effect diminishes because of *leakages* associated with profits, savings, taxes, and expenditures that land outside of the geographic region of analysis. The magnitude of these leakages is much greater for smaller areas such as Hays County, than for a larger area such as the State of Texas. Throughout this report, impacts will be reported as cumulative, so that impacts for the Region reflect Hays County plus adjacent counties (Bastrop, Blanco, Caldwell, Comal, Guadalupe and Travis) aggregated. Similarly, impacts for the State of Texas will include Hays plus the Region, (as well as all other counties in the state).

To illustrate this point, the economic output multipliers for construction of institutional buildings are: 0.865 for Texas, 0.771 for the Region, and 0.477 for Hays County. So, \$1 million dollars of construction spending in Hays County would generate \$1.865 million in total spending for the state, \$1.771 million for the Region and \$1.477 million for Hays County. Since these are cumulative, we have a maximum impact of \$1.865 million at the state level, which includes partial impacts of \$1.477 million in Hays County and \$1.771 million in the Region. Intuitively, we would expect the greatest impact to be near Hays County where the direct construction spending took place. This is indeed the case as 89% of the impact would be in the Region (including Hays County) since: $(0.771/0.865 = 0.89)$. That is to say that \$0.771 million of indirect and induced impacts from each \$1 million construction spending will land in the Region. (Note that the IMPLAN model takes into account leakages that arise from the fact that dollars spent may go to construction firms located outside of Hays County.)

Another geographical aspect of spending is that payroll dollars to employees that reside in neighboring counties will have different impacts. For example, the geographic distribution of Texas State payroll indicated that of the \$205 million in wages and salaries paid during the fiscal year ended August 31, 2013, only 52 percent went to residents of Hays County, with the remainder going to residents of nearby counties in the Region.

To illustrate the difference this makes, the spending multiplier for residents of Comal County with incomes of \$75,000-100,000 was 0.413, and the employment multiplier was 10.4 (FTE jobs per million dollars). This means that \$1 of spending by Comal residents would

generate \$1.41 of total economic impact in the region. In contrast, the spending multiplier for residents of Hays County with these same income levels was 0.306, and the employment multiplier was 8.5 jobs. Therefore, the IMPLAN model indicates that all else being equal, spending by Comal County residents has a larger economic impact on the region than that of Hays County residents. This illustrates the importance of taking into account the location where spending takes place.

There are also differences in the nature of spending patterns depending on household income levels, which this study takes into account. The IMPLAN model relies on the U.S. Department of Labor, Bureau of Labor Statistics Survey of Consumer Expenditures with adjustments to reflect regional differences in taxes, prices, and goods available to determine how spending impacts the local, regional and state economies.

While this study focuses on the economic impact of Texas State, it should be clear that the university also contributes a great deal to the arts, culture, sports, and social life in the city of San Marcos, and surrounding communities.

2 Enumerating direct spending associated with the University

To assess the economic impact of Texas State we require an enumeration of spending in various categories. We will rely on four different categories of spending: 1) payroll spending for employees, 2) spending by students and visitors, 3) construction spending, and 4) spending for auxiliary enterprises, materials and supplies, repairs, printing, communications, services, etc.

After enumerating spending by category, appropriate spending and employment multipliers are applied to determine the economic impact of Texas State on the three geographical areas used in this study.

We set forth general information regarding these various types of spending as well as aggregate magnitudes in this section. Details regarding how these magnitudes were determined are provided in separate sections devoted to each of the four types of spending. Information regarding the specific spending and employment multipliers applied to the various types of spending are also set forth in each section, since this constitutes the methodology of the study.

Total Texas State wages and salaries paid for the Fiscal Year that ended August 31, 2013 were \$205 million (excluding benefits), with 52 percent going to residents of Hays County.

Information on the geographic distribution of Texas State payroll indicated that nearly \$47 million in *direct* payroll spending went to Travis and Williamson County residents, \$19 million to Comal County, and between \$1.5 and \$8 million went to residents of the counties: Bexar, Caldwell, Guadalupe, Harris and Williamson. Amounts less than \$1 million went to residents of other counties such as Blanco and Burnett.

Texas State FTE faculty and staff employment was around 2,500 excluding student workers. In addition, there are also around 1,000 graduate assistant employees.

In addition to payroll, Texas State made over \$375 million in *direct* spending on construction projects over the period from 1999 to 2013, and has over \$844 million of construction in progress or scheduled for 2014 and beyond.¹ The current and scheduled construction amounts to over \$120 million per year of *direct* spending.²

Texas State had over 35,000 students, which we estimate account for around \$420 million of Hays County spending annually, and around \$570 million spending in the Region.³ Visitors to the students and university accounted for an additional \$52.1 million of local spending in Hays County.

Finally, other spending on auxiliary enterprises, materials and supplies, repairs, printing, communications, services, and so on, totaled over \$110 million in Hays County for the year 2013, and spending on utilities were \$30 million.⁴

In total, direct Hays County spending on payroll, construction, auxiliary enterprises, materials and supplies, repairs, printing, communications, services, and utilities was around \$339.1 million, while that of students and visitors totaled just over \$473 million for a total direct spending impact by Texas State of \$812.9 million. Direct spending in the Region was over \$1 billion, which was considerably higher than in Hays County alone. The increased magnitude includes additional spending by Texas State faculty, staff and students who reside in counties that neighbor Hays. Broadening the geographic focus to the State of Texas results in \$1.275 billion of direct spending by Texas State faculty, staff and students.

This economic impact study applies appropriate spending and employment multipliers to various categories of spending by the university, faculty, staff and students. The multipliers used will vary by category of spending and geographic area in which the spending takes place. Impact study methodology consists of careful enumeration of these aspects of spend-

¹Construction information used in the study is from the Texas State Board of Regents Fact Sheet. An annual estimate of \$120 million in construction spending was used to calculate an annual impact of Texas State in this area.

²This includes both the San Marcos and Round Rock campuses.

³Recall that the \$570 million for the region includes the \$420 million for Hays county.

⁴Round Rock campus operational expenses were around \$2.5 million and utilities were \$415,000. These are included in the state level impacts, but not Hays County or the Region.

ing followed by the application of appropriate multipliers. The remainder of this report devotes separate sections to the following categories of spending arising from the presence of Texas State: construction spending, student and visitor spending, payroll spending, and spending on auxiliary enterprises, utilities and supplies by the university.

3 Construction Spending

Texas State made over \$375 million in *direct spending* on construction projects over the period from 1998 to 2012, and has \$844 million in construction projects scheduled (or already in progress) for the 2013-2020 period.⁵ The current and scheduled construction averages over \$92.5 million per year of *direct spending* in Hays County and \$27.5 at Round Rock in Williamson County. The latter is included when we consider the State of Texas impact, but not for Hays County or the Region.

Table 2: Economic Impacts from Construction Spending

	Direct Spending (in million \$) (annual average)	Economic Impact (in million \$) (annual average)	Employment Impact (in FTE jobs) (annual average)
Hays County			
Cumulative Spending 2014-2020 period (in progress)	707.0		
annual average	92.5	136.6	1,695
Region			
Cumulative Spending 2014-2020 period (in progress)	707.0		
annual average	92.5	163.7	1,773
State of Texas			
Cumulative Spending 2014-2020 period (in progress)	844.0		
annual average	120.0	224.0	2,400

If we apply the output multipliers of 0.865 for Texas, 0.771 for the Region, and 0.477 for Hays County to the \$92.5 million per year construction spending, this results in an

⁵This includes \$137 million for the Round Rock campus, or \$27.5 per year.

annual total impact of \$136.6 million for Hays County, \$163.7 million for the Region and \$224 million at the state level. If we applied these same multipliers to total cumulative construction expenditures of \$707 million over the period from 2014 to 2020, we find impacts of: \$1.04 billion for Hays, \$1.25 billion for the Region and \$1.575 billion for the state.⁶

We add the employment multipliers for institutional building construction that measure the *indirect* and *induced* impacts to those for *direct* spending employment impacts for Hays County, the Region and Texas. This produces an estimate of the total number of FTE construction jobs resulting from the \$92.5 million annual Hays County construction spending. The employment impacts are: 17.38, 18.16 and 18.91 jobs per \$1 million dollars spending for Hays County, the Region and Texas, respectively. This suggests that the \$92.5 million spending each year would create FTE employment around 1,695, 1,773 in Hays county and the Region. For the state-level impact, direct construction spending is \$120 million when Round Rock is included, which leads to a State level employment impact of 2,400 FTE employment.

Table 2 provides a summary of this analysis for the three regions based on current and projected annual average construction spending magnitudes for the 2014-2020 time period. The direct spending magnitudes presented vary over the three geographic regions since Round Rock campus spending is not included for Hays County.⁷ (Note that the IMPLAN model takes into account leakages that arise from the fact that dollars spent may go to construction firms located outside of Hays county.) Table 2 shows both the economic impact measured in dollars as well as FTE employment impacts for the three levels of regional aggregation used in the study.⁸

4 Student and Visitor Spending

The largest economic impact from Texas State arises from student spending. To accurately assess these impacts it is necessary to determine the geographic proximity to the university as well as living circumstances of students.

⁶The economic impact study focuses on the annual impact of Texas State, so we use annual construction spending in our impact analysis.

⁷This study does not fully separate activities of the Texas State Round Rock campus except where possible. For example, construction spending, operating expenses and utilities spending were available for the Round Rock campus, so these are separated from Hays County spending magnitudes.

⁸An important point to note about economic impact methodology is that although we will report numerical magnitudes that include decimal digits in all tables, we do not mean to imply a high degree of decimal accuracy associated with our estimates. Since impact studies apply multipliers to spending magnitudes in a variety of categories and then aggregate, rounding of decimal digits at the disaggregate level could influence the final aggregated impacts, so we report decimal digits used to produce the disaggregated impact magnitudes throughout the study.

Using the Texas State 2012 Cost of Attendance Survey of student spending, we find that spending varies according to students' living circumstances. Of the over 35,000 Texas State students, only 6,000 live on campus in residence halls, and the long-range plan indicates this number will stay relatively fixed in the future. This means that 29,000 students are living off-campus, either with parents, with other students or non-students, with spouses, or alone. Around 5,000 of the 29,000 off-campus students are graduate students, leaving 24,000 undergraduate students off-campus. Ten percent of these (2,400) live with parents.

A profile of the proximity to campus of all Texas State students can be gleaned from the 2012 survey of students that focused on students' living circumstances and spending patterns. Half of off-campus students (excluding students in residence halls), live within 27 miles of campus, and the median distance traveled to campus by these off-campus students is 15 miles. However, for off-campus students living with parents the median distance traveled to school is 60 miles, so half of these students live outside the Region (defined as Hays plus contiguous counties).

Based on consideration of the survey responses regarding students' living circumstances, students were categorized as shown in Table 3. As indicated, spending by students varies with their living circumstances, so these inferences regarding students living situations as well as a geographical profile regarding proximity to the Texas State campus will be used to allocate student spending magnitudes across the three geographical regions in the study. Details regarding the methodology used are provided in the following sub-sections devoted to each type of student spending.

The Texas State *2012 Cost of Attendance* (COA) information indicated that spending by off-campus full-time students living with parents was \$11,000 excluding Tuition and Fees.⁹ In contrast, full-time students living off-campus alone, with a spouse, other students or other non-students spent \$25,000, with the major difference accounted for by rent and rental insurance as well as food and travel expenses from their off-campus residence to their home. Full-time undergraduate students living on-campus spent \$6,000, with the big difference being spending on residence hall Room and Board which was excluded.¹⁰

The geographic distribution of students was estimated using information on apartments where students lived provided by the *2012 Cost of Attendance Survey*. Ten percent of off-campus students living with parents (240) are in Hays county, and half of off-campus students not living with parents are in Hays county (11,300).

⁹Tuition and Fee spending is already accounted for in Texas State spending, so this exclusion avoids double counting.

¹⁰Room and Board spending for residence hall students is already accounted for in Texas State auxiliary enterprises spending, so this exclusion avoids double counting.

4.1 On-campus students living in residence halls

Table 4 provides a summary of student spending categorized by living circumstances and the three regions used in our analysis. The proximity to campus information provided by the student survey was used to allocate various types of student spending across the three geographic regions.

The simplest living circumstances to analyze are students living in campus residence halls. The *Texas State 2012 Cost of Attendance* (COA) estimates indicated that direct spending (excluding Tuition and Fees and Room and Board) by the 6,000 residence hall students amounted to \$6,000 per student for total local spending of \$36 million by these students in San Marcos. These numbers are shown in Table 4 as Hays County direct spending magnitudes. It should be noted that COA number of \$6,000 is intended to be a conservative estimate of the cost of attendance. Applying a factor of 9 months to the monthly spending and using 2 semesters for spending on book and supplies, we have total survey-reported Academic Year spending in residence hall categories around \$6,000.

Table 4 shows (COA) estimates of direct spending amounts for the Region and State of Texas, the other two geographies used in our impact analysis. These magnitudes remain the same for Residence Hall students since this direct spending remains totally within Hays County, but of course the economic impact of this spending will be subject to the larger

Table 3: Geographical Distribution of Students

Total Students = 35,000	
On-Campus Students	6,000
Off-Campus Students	29,000
Graduate Students = 5,000	
In Hays County	2,000
In the Region	1,500
Outside the Region	1,500
Undergraduate Students living with parents = 2,400	
In Hays County	240
In the Region	1,080
Outside the Region	1,080
Undergraduate Students not living with parents = 22,600	
In Hays County	11,300
In the Region	5,650
Outside San Marcos	5,650

multipliers that are associated with the larger geographic regions.

The last column of the table shows the economic impact of the \$36 million in COA estimates of direct spending for Hays County, the Region and the State of Texas. To illustrate how the economic impacts shown in Table 4 were calculated, we enumerate the detailed calculations for this simplest case of student spending.

From the spending survey, students indicated semester spending of \$450 on books, \$60 on supplies and equipment. They also indicated monthly spending on recreation (\$50), clothing (\$50), personal items (\$30), and cell phones (\$85).

The Hays County IMPLAN spending multipliers for the categories: *Health and personal care stores, Clothing and clothing accessories stores, Sporting goods- hobby- book and music stores, General merchandise stores, Miscellaneous store retailers, and Telecommunications and Information services*, ranged from a low of 0.35 to a high of 0.49 with the average (weighted by the above expenditure magnitudes) being 0.42. This would result in a Hays County economic spending impact of 1.42 times the \$36 million or \$51 million, which is reported in the last column of the table as the economic impact for Hays County.

To produce an economic impact for the Region, the larger IMPLAN spending multipliers for these same categories were applied to the direct residence hall students' spending of \$36 million. The individual spending multipliers ranged from a low of 1.48 to a high of 1.60, with a spending weighted average equal to 1.54. Applying this multiplier to the \$36 million spending results in a \$55 million economic impact reported in the last column of the table.

For the State of Texas region, the individual spending multipliers ranged from 1.66 to 1.82, with a spending weighted mean of 1.75, producing a spending impact of \$63 million reported in the table.

4.2 Off-campus students living with parents or relatives

From the survey information, we conclude that 10 percent of the 24,000 undergraduate off-campus students (2,400) live with parents (or close relatives). Survey information allowed an inference that 90% of these students live outside Hays county, while 10% live in Hays, and half of those living outside Hays county live outside the Region. For undergraduate students who live with parents outside Hays county, we only count spending on books and supplies, and one-half of personal and miscellaneous spending as taking place in Hays County.¹¹

Total spending by the 240 students living with parents in Hays county was \$11,000

¹¹For example, the COA Survey indicated that spending on fuel and automobile maintenance for travel to school was \$210 (per month), while spending on personal items, recreation, clothing medications were \$250. Only half of these magnitudes were assumed spent in Hays county.

(annually) for a total of \$2.65 million. For the 2,160 students living with parents outside Hays county we have spending of \$2476 in Hays County, leading to total direct spending by these students in Hays County of \$5.35 million.

As we expand our impact analysis to the Region, we need to include additional spending by off-campus students living with parents or relatives as it takes place in the larger geographic area. From survey information for students living with parents, we concluded that 1,080 lived inside the Region and 1,080 outside the Region. For students living inside the Region we include all \$11,000 (spent annually) in the region for our impact analysis, and only half \$5,500 of this was assumed spent in the region for students from outside the Region. This leads to \$18 million direct spending at the regional level by students living with parents.

For the impact analysis at the state level, we can include all of the \$11,000 in spending by the 2,400 off-campus undergraduate students living with their parents or relatives. This gives rise to \$26.4 million of direct spending by this category of Texas State student.

The individual IMPLAN spending multipliers applied to these spending magnitudes are different because off-campus students make expenditures on rent, auto repairs, fuel, automotive and apartment insurance, health, telecommunications, etc. For Hays County the spending weighted average was 0.43 compared to 0.42 for residence hall students, producing roughly the same multiplier. Distinguishing between students living with parents versus students living with others, also changes spending categories, but did not change the spending weighted average multiplier from 0.43.

Expanding the analysis to the Region, the spending weighted multiplier of 0.55 was applied to the COA spending estimate magnitudes to produce an economic impact estimate reported in the last column of Table 4. A similar procedure was used to derive the economic impact estimate for the State of Texas, based on a spending weighted average multiplier of 0.75, producing the estimate shown in the table.

4.3 Off-campus students not living with parents or relatives

The proximity profile for these students is that around 50 percent reported they live in Hays County, and 50 percent commute from outside Hays County, with half of those outside Hays County coming from outside the Region. Therefore off-campus students living in Hays County account for 50 percent of the 22,600 off-campus students who do not live with parents, or 11,300 students with average COA estimates of annual spending equal to \$25,000. This results in \$282.5 million of direct local spending reported in Table 4.

For the 50 percent of off-campus students (not living with parents or relatives) who commute to San Marcos, we count only books and supplies plus one-half of fuel, auto maintenance, and personal spending, which annually totals around \$4,000. The direct

Table 4: Economic Impacts from Spending by Students (in millions of dollars)

	Direct Spending COA Estimates	Economic Impact
	Hays County	
Undergraduates		
Living in residence halls	36.0	51.0
Living with parents in Hays County	2.65	3.8
Living with parents outside Hays County	5.35	7.65
Not living with parents in Hays County	282.5	404.0
Not living with parents outside Hays County	45.2	64.6
Graduates		
Living in Hays County	50.0	71.5
Totals	421.7	602.5
	Region	
Undergraduates		
Living in residence halls	36.0	55.0
Living with parents in Hays County	2.65	4.1
Living with parents outside Hays County	18.0	28.0
Not living with parents in Hays County	282.5	437.8
Not living with parents outside Hays County	147.0	227.8
Graduates		
Living in the Region	87.5	135.6
Totals	573.6	888.3
	State of Texas	
Undergraduates		
Living in residence halls	36.0	63.0
Living with parents in Hays County	2.65	4.6
Living with parents outside Hays County	26.4	46.2
Not living with parents in Hays County	282.5	494.3
Not living with parents outside Hays County	282.5	494.3
Graduates		
Living in the State	125.0	218.75
Totals	755.0	1,321.25

(local) spending by these students amounts to \$45.2 million as reported in the table.

The economic impacts arising from this type of student spending were derived using the same spending weighted multiplier methodology as described in the discussion of on-campus residence hall students, with the spending categories adjusted to reflect differences in spending by off-campus versus on-campus students.

As we broaden our impact analysis to the Region, we include spending for Room and Board for students living off-campus in the broader area who do not live with parents. For the State of Texas, we include total COA estimated spending of \$25,000, by all off-campus students (not living with parents). A similar approach was taken for graduate students living in Hays county, the broader region and outside the region.¹²

4.4 Student spending conclusions and validity checks

Direct spending of \$421.7 million by Texas State students in Hays County produces a local economic impact of \$602.5 million for the local economy, which shows a great deal of growth from the \$294.7 million dollar student spending impact for Hays County found in the *2007 Economic Impact Study of Texas State*. Some of this growth stems from the 30 percent increase in enrollment from 27,000 to 35,000 students that took place over the 2007 to 2014 period, and another part of the increase can be attributed to 15 percent inflation over this period. This increase however would only account for an increase in student spending impact from \$294.7 to \$441 million. Where did the remaining student spending impact come from that raised the impact from \$441 million to an impact of \$602.5 million? It appears that students are more willing to spend on living quarters that are targeting off-campus students in San Marcos. In the 2007 Impact Study off-campus students were spending around \$11,000 compared with \$25,000 in 2013.

According to the April 2014 *City of San Marcos Multi Family Projects Report*, there were 1,823 multi-family units completed between Fall 2012 and Fall 2013 having 5,386 bedrooms, with a value of \$130 million. In addition, there were another 1,296 multi-family units with 3,318 bedrooms under construction with planned completion for Fall 2014, having a value of \$100 million, and another \$100 million worth of project involving 806 units with 2,237 bedrooms under construction/consideration with future completion dates for fall or spring of 2015. This means San Marcos will have added nearly 4,000 apartment units with 11,000

¹²The COA survey did not provide enough information to separately estimate spending by graduate students, so these were treated the same as undergraduates. A related point is that there was no information available regarding student spending at the Round Rock campus, so these impact were excluded from this study.

bedrooms over the 2012 to 2015 period. The presence of Texas State students living off-campus certainly deserves a great deal of credit for stimulating this construction boom in multi-family units.

The 2007 Texas State Economic Impact Study estimated that around 8,000 students were living off-campus in Hays county without parents, whereas this study puts that number at 11,300. Given the large increase in San Marcos multi-family projects constructed or under construction, this might actually be an underestimate. It appears that San Marcos has become a destination for students who want to live and work in a college town environment.

The estimate of students who live inside versus outside San Marcos would not influence the student spending impacts calculated for the State of Texas, which totalled \$1.32 billion.

4.5 Employment impacts from student spending

We applied the same methodology described for student spending to produce spending weighted employment multipliers for Hays County, the Region and the State of Texas. This allows us to assess the employment impact of student spending on these three geographic regions.

Recall, these multipliers reflect full-time equivalent (FTE) jobs created per million dollar spending. For Hays County, the individual employment multipliers associated with the various categories of spending ranged from a low of 16.2 to a high of 28. The mean was 22.5 FTE jobs per million dollars spend, for a total Hays County employment impact of 9,488 jobs arising from student spending.

For the Region, the employment multipliers ranged from a low of 19 to a high of 34, with a mean equal to 24.6 leading to an employment impact of 14,110 jobs. The State of Texas multipliers for the categories of student spending ranged from 18 to 41, with a mean of 25.2, suggesting an employment impact from student spending equal to 19,000 jobs.

The results are shown in Table 5, with detailed enumerations for each of the categories of students and the various estimates of spending used to produce the employment impact estimates.

4.6 Visitors spending

Typically economic impact studies rely on surveys of visitors to assess the magnitude and types of spending by guests to a region. No recent survey exists for visitors to the Texas State Campus, so an estimate from the 2007 study was used. The estimate of \$25 million of spending by visitors to students, the campus and sporting events was adjusted to reflect

the increase in the number of students since 2007 and inflation. This resulted in a direct spending impact of \$52.1 million, for Hays County. Using an average multiplier based on hotels and other accommodations, food and drinking establishments and general and

Table 5: Employment Impacts from Spending by Students (in FTE jobs)

	Direct Spending COA Estimates	Employment Impact
	Hays County	
Undergraduates		
Living in residence halls	36	810
Living with parents in San Marcos	2.65	59.6
Living with parents outside San Marcos	5.35	120.7
Not living with parents in San Marcos	282.5	6,356.25
Not living with parents outside San Marcos	45.2	1,017.0
Graduates		
Living in San Marcos	50.0	1,125.0
Totals	421.7	9,488.25
	Region	
Undergraduates		
Living in residence halls	36	885.6
Living with parents in San Marcos	2.65	65.1
Living with parents outside San Marcos	18.0	442.8
Not living with parents in San Marcos	282.5	6,950
Not living with parents outside San Marcos	147.0	3,616.2
Graduates		
Living in the Region	87.5	2,152.5
Totals	573.6	14,110.5
	State of Texas	
Undergraduates		
Living in residence halls	36	907.2
Living with parents in San Marcos	2.65	66.8
Living with parents outside San Marcos	26.4	665.3
Not living with parents in San Marcos	282.5	7,120
Not living with parents outside San Marcos	282.5	7,120
Graduates		
Living in the State	125.0	3,150
Totals	755.0	19,026

miscellaneous retail merchandise stores, we arrive at an economic impact multiplier of 0.41 for Hays County, leading to an economic impact of \$73.5 million dollars. For the Region, the multiplier was 0.55, leading to an impact of \$80 million. Finally, at the state level, the multiplier was 0.8, producing an impact of \$94 million.

Table 6: Economic Impacts from Visitors Spending

	Direct Spending by Visitors	Economic Impact (in million \$)	Employment Impact (in FTE jobs)
	Hays County		
Annual Spending	52.1	73.5	1,234
	Region		
Annual Spending	52.1	80.0	1,323
	State of Texas		
Annual Spending	52.1	94.0	1,292

These economic impact results are reported in Table 6, along with employment impacts. The employment multiplier for Hays county averaged over the spending categories was 23.7, that for the Region was 25.4, and for the State of Texas was 24.8 FTE jobs per million dollars of spending. This reflects an unusual result where the smaller Region exhibited a larger employment multiplier than the larger State of Texas region. The Regional employment multiplier was exceptionally large for Miscellaneous store retailers, equal to 41.7, probably arising from the successful Outlet Malls of San Marcos. The State of Texas employment multiplier for these establishments was only 34.7, accounting for this unusual result. An economic interpretation of this might be that in the retail arena San Marcos is actually gaining jobs at the expense of the State. That is, there are substitution effects, or loss of jobs from retail activity elsewhere in neighboring areas. Another explanation however is that the IMPLAN model is not properly accounting for the very unusual situation regarding the Outlet Malls of San Marcos.

5 Payroll Spending

As noted, the economic impact of payroll spending by Texas State employees will depend on household income levels, since household spending patterns differ by level of income.

The IMPLAN model relies on the U.S. Department of Labor, Bureau of Labor Statistics Survey of Consumer Expenditures to determine how spending patterns vary by household income levels. The national survey information is adjusted to reflect regional differences in taxes, prices, and goods available to determine how spending impacts the local, regional and state economies.

Texas State payroll was classified into five household income categories that are used by the IMPLAN model. It should be noted that these classifications were based on a conservative assumption that household income was entirely determined by Texas State payroll income. This does not take into account spousal income or other sources of household income such as dividend, rents, self-employment, etc.

The geographic distribution of payroll spending also needs to be taken into account. Of the \$205 million payroll, around 52 percent went to residents of Hays County, with the remainder going to employees located in neighboring counties in the Region.

The results from classifying payroll spending by income level as well as geographical location are shown in Table 7. Appropriate spending and employment multipliers were applied to payroll spending in the various categories. Table 7 shows that the \$106.6 million in direct payroll spending by Texas State leads to around \$144 million after taking the Hays County spending multiplier into account. The FTE employment impact from Texas State includes the direct employment by the University as well as employment generated from spending of the \$106.6 million payroll dollars by employees who reside in Hays county. This was 3,451 FTE jobs, which includes Texas State employment.

Table 7: Payroll Spending

	Direct Spending by Employees	Economic Impact (in million \$)	Employment Impact (in FTE jobs)
	Hays County		
Total Spending	106.6	144.0	3,451
	Region		
Total Spending	205.0	289.0	4,723
	State of Texas		
Total Spending	205.0	356.7	4,920

When we move to the Region, all employees payroll serves as the basis for direct spending, which results in a doubling of payroll spending. In addition, the spending and employment multipliers increase as we move to a larger geographic region. This results in an economic impact from direct spending of \$205 million equal to \$289 million, and an employment impact equal to 4,723 FTE jobs. Finally, the state-level impacts are slightly larger due to the larger spending and employment multipliers for this larger geographic area.

6 Spending on utilities and operating expenses

Table 8: Economic Impacts from utilities and operating expenses

	Direct Spending (in million \$)	Economic Impact (in million \$)	Employment Impact (in FTE jobs)
Hays County			
Annual Spending			
Utilities	30.0	40.5	201.0
Operating expenses	110.0	148.5	1,089
Total	140.0	189.0	1,290
Region			
Utilities	30.0	42.3	204.0
Operating expenses	110.0	169.4	1,245
Total	140.0	211.7	1,449
State of Texas			
Utilities	30.5	48.5	213.5
Operating expenses	113.0	194.3	1,326
Total	143.0	242.8	1,540

Direct spending related to operating expenses for auxiliary enterprises, materials and supplies, repairs, printing, communications and services on the San Marcos campus totaled over \$110 million for the year 2013, while that for Round Rock was \$3 million. Auxiliary enterprises include such items as housing and food services provided by the university. The wages and salaries part of spending devoted to providing these services, has already been taken into account in our analysis of payroll spending.

We focus here on non-wage and salary expenditures which include: materials and supplies, communications, professional fees and services, repairs and maintenance, rentals and leases, travel expenditures, and printing and reproduction services, In addition, utilities

spending is around \$30 million for San Marcos and \$415,000 for Round Rock.

Multipliers for the broad category of materials and supplies are somewhat difficult to determine, so multiplier values for state and local government education spending and employment were used. This general multiplier was also used for miscellaneous category spending. Multipliers for other categories of spending such as *Communications and Utilities*, *Repairs and Maintenance*, etc. were available. For the category of *Rentals and Leases*, the average of two multipliers were used. One for automotive and equipment rental leasing and another for machinery and equipment rental leasing.

The impact of these expenditures by Texas State on the Hays County economy is around \$189 million and the employment impact is 1,290 FTE jobs. For the Region we see an impact of \$211 million and 1,449 jobs. The total impact on the State of Texas arising from these expenditures is \$242 million and 1,540 FTE jobs.

7 Combining the impacts

To determine the overall impact of Texas State on the three geographic areas in our analysis, we simply add up the *direct spending* in the four categories as well as the *economic impacts* measured in millions of dollars and the *employment impacts* measured in FTE employment.

These aggregates are shown in Table 9, which reproduces the table from the Executive Summary section of this report. For example, the Hays County *Economic Impact* arising from spending by the University and its employees shown in the table reflects the sum of the economic impacts presented earlier: \$92.5 million construction spending, \$140 million from spending on operational expenditures and utilities, and \$106.6 million from payroll spending by employees. Similarly, the Regional *Employment Impact* of 15,433 FTE jobs resulting from Texas State students and visitors spending represents 14,110 jobs arising from students spending and 1,323 jobs resulting from visitors spending.

The impacts increase as we move from Hays County to the broader geographic areas defined as the Region and the State of Texas for two reasons. First, more student and employee spending is included in the *direct spending* when we include Texas State students and employees who live and spend outside of Hays County. A second reason for the increased impacts is that spending and employment multipliers increase when we consider larger geographic areas. Recall that the impact of subsequent rounds of additional spending which make up the economic and employment impacts are gradually diminished when savings, taxes, and expenditures are made outside the relevant regions used in our analysis. These *leakages* are much smaller when we consider larger areas in our analysis, since more spending

will remain within the study area.

This study concludes that the annual economic impact of Texas State on Hays County arising from direct spending by Texas State, its employees and students is \$1.1 billion per year. The employment impact on Hays County is over 17,000 full-time-equivalent jobs.

In the Region, which includes Hays plus surrounding counties, the presence of Texas State gives rise to over \$1.6 billion in economic activity and more than 23,000 full-time-equivalent jobs. The economic impact of Texas State on the State of Texas is over \$2.2 billion and the employment impact is 29,000 jobs.

More than half (\$1.4 billion) of the \$2.2 billion dollar total impact on the economy of the State of Texas arises from *direct, indirect and induced* spending by University students and visitors. Spending by the University and its employees account for the remaining \$822 million impact.

The Hays County and Region impacts do not include economic impacts from spending related to the Round Rock campus, whereas the State of Texas impacts do include these. Details pertaining to the Round Rock campus can be found in the study.

Table 9: Economic and Employment Impacts of Texas State University

	Direct Spending (in million \$)	Economic Impact (in million \$)	Employment Impact (in FTE jobs)
	Hays County		
Annual Spending			
University and employees spending	339.1	469.6	6,436
Students and visitors spending	473.8	676.0	10,722
Total	812.9	1,145.6	17,158
	Region		
Annual Spending			
University and employees spending	437.5	664.4	7,786
Students and visitors spending	625.7	968.3	15,433
Total	1,063.2	1,632.7	23,219
	State of Texas		
Annual Spending			
University and employees spending	468.0	822.7	8,856
Students and visitors spending	807.1	1,415.2	20,318
Total	1,275.1	2,237.9	29,174