
**Analysis of the Economic Contribution
that Liberty University makes
to the Lynchburg MSA and to
Virginia**

November 2012



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Dr. Mangum earned his Ph.D. in economics from George Mason University in 1995, where he received his training under Nobel Laureate James Buchanan and the team of esteemed colleagues, such as Dr. Mark Crain and Dr. Robert Tollison, that Dr. Buchanan had recruited to the Center for Study of Public Choice. He has nearly two decades of experience in quantitative analysis and policy development at both the federal and state level.



MANGUM
ECONOMIC CONSULTING, LLC

www.mangum-consulting.com

50 Pear Street, Richmond, VA 23223

804-771-5338

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Executive Summary

This report assesses the economic contribution that Liberty University made to the Lynchburg MSA and the state of Virginia in fiscal year 2011-12. The principle findings from that assessment are as follows:

1. Liberty University is Virginia's largest and most rapidly growing institution of higher education: In academic year 2011-12, Liberty had an unduplicated annual headcount of 95,753 students, the largest total enrollment of any college or university, private or public, in the state of Virginia.

Between 1992 and 2011, the university's fall enrollment increased from 8,500 to 65,955, an increase of 57,455 students or 676 percent. In contrast, over that same period Virginia's other four-year private non-profit colleges and universities grew by 37 percent, and Virginia's four-year public colleges and universities grew by 31 percent. Moreover, Liberty University is not only the Lynchburg MSA's second largest employer, it is also one of its fastest growing employers. Between, 2001 and 2011, university employment increased by 3,327 jobs or 386 percent.

In addition, Liberty University continues to invest in additional facilities and to expand its program offerings. This year, Liberty broke ground on its new \$40 million Center for Health and Medical Sciences. This new 138,000 square foot four story facility will house a proposed College of Osteopathic Medicine and enable the university to expand its School of Health Sciences. Liberty also recently announced plans for the construction of a new 40,000 to 50,000 foot facility at Lynchburg Regional Airport that would include a new hanger and provide additional space for the university's flight school and aircraft mechanic training program.

Finally, Liberty recently renovated its 19,200 seat football stadium to include luxury suites, entertainment rooms, and a state of the art press box built to accommodate nationally televised broadcasts, began construction of a new 2,500 seat baseball stadium, initiated a \$2 million renovation of its outdoor track, started construction of a new Basketball Practice Facility, and is building a new Intramural Complex.

2. Liberty University makes a major economic contribution to the Lynchburg MSA: In fiscal year 2011-12, Liberty University was responsible for contributing \$342 million dollars in direct spending to the Lynchburg MSA. After accounting for leakages from the regional economy due to expenditures on domestic and foreign imports, payroll deductions, and savings, that \$342 million generated \$139 million in net spending that stayed in the regional economy. The economic ripple effects from those dollars ultimately generated \$443 million in overall economic activity within the Lynchburg MSA, which means that every \$1.00 of Liberty University's net local spending generated \$3.19 within the broader regional economy.
3. Liberty University makes a major employment and wage contribution to the Lynchburg MSA: Liberty University's fiscal year 2011-12 net regional spending was also responsible for supporting a total of 6,896 jobs within the Lynchburg MSA and \$242 million in labor income. Given that most of those jobs were within the city of Lynchburg, and the city's total employment in 2011 is estimated to have been 50,552, this means that approximately one out of every seven jobs within the city of Lynchburg that year were either directly or indirectly attributable to Liberty University.
4. Liberty University makes a major fiscal contribution to the Lynchburg MSA: Local taxes paid by the university itself, university associated enterprises, university tenants, employees, students, and visitors contributed approximately \$10 million in tax revenue to the Lynchburg MSA in fiscal year 2011-12. Focusing exclusively on the city of Lynchburg, where Liberty University's campus is physically located, the university generated approximately \$6 million in tax revenue for the city. More specifically, it accounted for approximately: 3 percent of the city's total *Real Property Tax* revenue, 8 percent of its *Personal Property Tax* revenue, 10 percent of its *Restaurant Food Tax* revenue, 19 percent of its *Hotel and Motel Room Tax* revenue, and 3 percent of its local *Sales Tax* revenue.
5. Liberty University makes a major economic and fiscal contribution to the state of Virginia as a whole: In fiscal year 2011-12 Liberty University was responsible for contributing \$424 million dollars in direct spending to the state. Again accounting for leakages due to domestic and foreign imports, payroll deductions, and savings, that \$424 million generated \$177 million in net spending that stayed in the statewide economy. The economic ripple effects from those dollars then created a total of \$639 million in overall economic activity within Virginia, which means that every \$1.00 of Liberty

- University's net state spending ultimately generated \$3.61 in overall economic activity within the state. Those expenditures were responsible for supporting a total of 8,033 jobs in the state, creating \$325 million in labor income, and generating \$74 million in federal, state, and local tax revenue.
6. Liberty University makes a major contribution to growing Virginia's human capital: The primary economic contribution of any educational institution is really the product it is in the business of creating – well educated and highly trained graduates. Our analysis indicates that the economic value of the enhanced labor productivity, or increased human capital, that Liberty University's 2010-11 graduates carried with them into the workforce was \$35 million. Moreover, the discounted present value of the stream of economic benefits that enhanced productivity will generate over the entire time that Liberty graduates are likely to be active in the workforce is \$644 million.
 7. Liberty University also makes many other contributions to the Lynchburg MSA and the state of Virginia:
 - Its students and employees provide approximately \$5.5 million worth of volunteer service hours within the Lynchburg MSA each year.
 - Its agreement with the Greater Lynchburg Transit Company (GLTC) to serve as the university's exclusive outside transportation vendor has reduced traffic and parking congestion, and also provided GLTC with \$1.2 million in additional annual revenue that enabled it to upgrade its bus fleet and services.
 - It has made significant regional investments in economic revitalization. After acquiring the Plaza shopping center in 2008, the university invested \$500,000 in improvements to the property. The Plaza is now home to Centra Health's Lynchburg Family Residency program and several other new tenants, and is successfully generating a revenue stream for the university as well as positively contributing to the city of Lynchburg's tax base.
 - It has enhanced the quality of life within the Lynchburg MSA by adding to the region's recreational opportunities through its LaHaye Ice Center and the Liberty Mountain Snowflex Center. The LaHaye Ice Center attracts more than 100,000 people per year through various college sports events, youth hockey leagues, figure skating programs, and other events such as Winterfest, while the Liberty

Mountain Snowflex Center has received national attention as North America's only all-season Snowflex synthetic ski slope,

- It plays a large role in attracting tourists to the Lynchburg MSA. In fiscal year 2011-12, Liberty University's out-of-town visitors generated approximately 82,553 hotel room nights in the Lynchburg MSA and those hotel room nights in turn were associated with approximately \$6.5 million in local hotel revenue.
- It makes a significant contribution to ensuring the Lynchburg MSA will have the trained graduates it needs to prosper in the future in key growth areas such as healthcare and education by meeting some or all of the region's demand for *Business Administration and Management, General; Business/Commerce, General; Accounting; Speech Communication and Rhetoric; Law; Counselor Education/School Counseling and Guidance Services; Counseling Psychology; Special Education and Teaching, General* graduates.

8. In sum, Liberty University is a rapidly growing institution, that has a significant economic and fiscal impact on the Lynchburg MSA and the state of Virginia as a whole, and plays a very active and positive leadership role within its community and the state.

This report was commissioned by Liberty University and produced by Mangum Economic Consulting, LLC.

Introduction

This report assesses the economic contribution that Liberty University made to the Lynchburg MSA¹ and the state of Virginia in fiscal year 2011-12.² The remainder of the report is divided into five sections. The *Liberty University Profile* section describes the general characteristics of the institution and the students it serves. The *Lynchburg MSA Profile* section provides context for the analyses that follow by illuminating key economic characteristics of the greater Lynchburg area. The *Economic and Fiscal Impact* section quantifies the economic and fiscal contribution that Liberty University makes to the Lynchburg MSA, as well as to the state of Virginia as a whole. The *Other Contributions* section quantifies some of the many other contributions that Liberty University makes to the Lynchburg MSA, such as community service, contributing to economic revitalization, generating higher levels of tourism, enhancing the quality of life, and ensuring that the Lynchburg MSA is developing the qualified workforce that it will need to be economically successful in the future. Finally, the *Conclusion* section provides a summary and concluding comments.

This report was commissioned by Liberty University and produced by Mangum Economic Consulting, LLC.

Liberty University Profile

History and General Characteristics

Liberty University was founded in 1971 as a private, non-profit, Evangelical Christian institution of higher education. Since its first class of 154 students, Liberty has experienced explosive enrollment growth. In academic year 2011-12, Liberty had an unduplicated annual headcount of 95,753 students, the largest total enrollment of any college or university, private or public, in the state of Virginia.³ In addition, Liberty University is also the greater Lynchburg area's second largest employer. Between 2001 and 2011, Liberty University's total employment increased by 3,327 jobs or 386 percent. Moreover, even in the worst economic downturn since the Great Depression, it has continued to add jobs at a significant rate. At the height of the 2007 recession, between fiscal year 2008 and fiscal year 2009, while the city of Lynchburg as a whole experienced

¹ The Lynchburg MSA is comprised of the counties of Amherst, Appomattox, Bedford, and Campbell, and the cities of Bedford and Lynchburg.

² July 1 of 2011 through June 31 of 2012.

³ *Data Source:* Liberty University.

a 4 percent decline in total employment, employment at Liberty University actually increased by 642 jobs or 25 percent.⁴

Importantly, this remarkable growth has had a demonstrable effect on the city of Lynchburg's own growth trajectory. According to data from the 2010 census, between 2000 and 2010 the population of Lynchburg grew by 15.8 percent.⁵ By comparison, the population of Virginia as a whole grew by only 13.0 percent over the decade, and population growth in all but six of Virginia's 39 independent cities was lower than that of Lynchburg (*e.g.*, Charlottesville grew by 8.4 percent between 2000 and 2010, Norfolk by 3.6 percent, Richmond by 3.2 percent, Roanoke by 2.2 percent, and Virginia Beach by 3.0 percent).⁶ Liberty's contribution to this significant population increase was explicitly cited in a March 2011 column in the Roanoke Times entitled, "Census 2010: Liberty University fuels Lynchburg's growth."⁷

Liberty University is accredited by the Southern Association of Colleges and Schools (SACS). It currently offers 220 unique programs of study – 104 online and 172 residential (some of which are offered both online and residentially) – through 12 colleges and schools. Liberty is also home to the largest Nursing Program in Virginia, boasting an enrollment of 2,267 in fall 2011 at the baccalaureate level and above.⁸ By way of comparison, the next largest Nursing Program in the state that year was at George Mason University and had an enrollment 902. In addition, Liberty broke ground on a new \$40 million Center for Health and Medical Sciences this November. This new 138,000 square foot four story facility will house a proposed College of Osteopathic Medicine and enable the university to expand its School of Health Sciences. Importantly, this facility was made possible in part by a \$20.5 million commitment by the Virginia Tobacco Commission, one of the largest investments in the history of the Commission. It is anticipated that the new Center for Health and Medical Sciences will be completed in the spring of 2014 and matriculate its first class of osteopathic medical students in the fall of that year. Liberty also recently announced plans for the construction of a new 40,000 to 50,000 foot facility at Lynchburg Regional Airport that would include a new hangar and provide additional space for the university's flight school and aircraft mechanic training program.

Liberty University is situated on 6,874 acres in the City of Lynchburg and the counties of Amherst, Bedford, and Campbell and encompasses 4.3 million square feet of facilities. The university maintains more than 269 buildings across 12 campus areas located throughout Central Virginia. In addition, the university boasts 20 NCAA Division 1

⁴ *Data Source:* Liberty University.

⁵ *Data Source:* U.S. Census Bureau.

⁶ *Data Source:* U.S. Census Bureau.

⁷ Roanoke Times, "Census 2010: Liberty University fuels Lynchburg's growth," March 6, 2011.

⁸ *Data Source:* State Council of Higher Education for Virginia.

Athletic programs and 31 intercollegiate club sports, which are able to train and compete in its 9,000 seat Vines Center arena, 19,200 seat Williams stadium, and Tolsma Indoor Track facility, among other athletic and recreation facilities. Significantly, a description of Liberty’s nationally emerging football program was recently featured in a lengthy New York Times article entitled “In Virginia’s Hills, a Football Crusade.”⁹ Liberty has also recently renovated its double-decker football stadium to include luxury suites, entertainment rooms, and a state of the art press box built to accommodate nationally televised broadcasts. In other sports areas, the university has also begun construction of a new 2,500 seat baseball stadium, initiated a \$2 million renovation of its outdoor track, started construction of a new Basketball Practice Facility, and is building a new Intramural Complex. Finally, Liberty University is also home to the LaHaye Ice Center and North America’s only year-round, synthetic, Snowflex ski slope.

Enrollment and Student Characteristics

Enrollment

As stated earlier, in academic year 2011-12 Liberty had an unduplicated annual headcount of 95,753 students, making it the largest college or university, private or public, in the state of Virginia.¹⁰ Figure 1 provides a breakdown of Liberty University’s fall 2011 enrollment by resident and online students. What these data show is that 28 percent of the university’s undergraduate enrollment was comprised of resident students in fall 2011, while 72 percent was comprised of online students. As shown in Figure 1, graduate enrollment was much more heavily tilted toward online students, with only 4 percent of graduate enrollment comprised of resident students, and 96 percent comprised of online students.

⁹ “In Virginia’s Hills, a Football Crusade,” by Bill Pennington, New York Times, November 12, 2012.

¹⁰ *Data Source:* Liberty University.

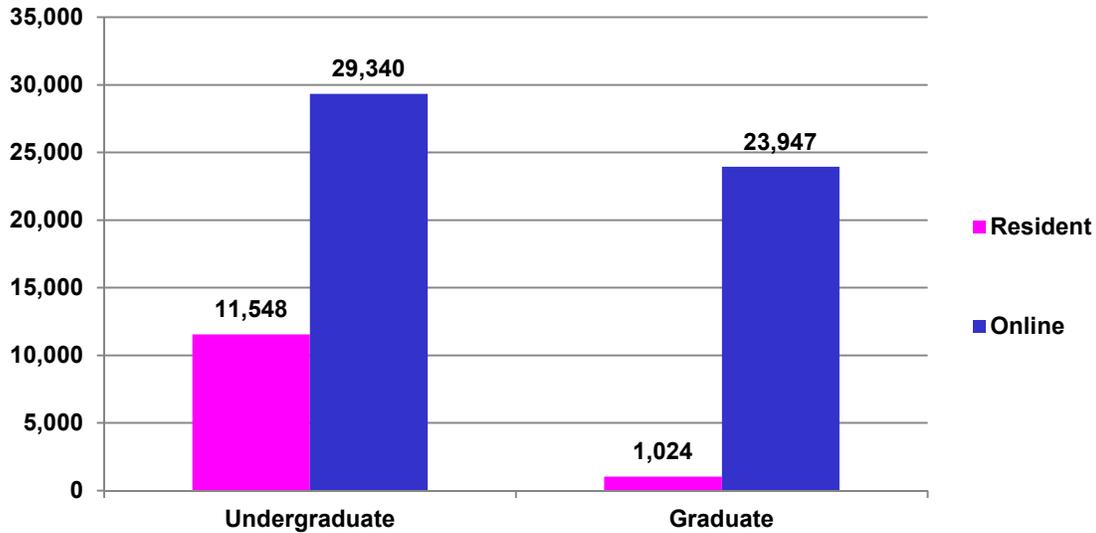


Figure 1: Liberty University Fall 2011 Headcount Enrollment¹¹

Figure 2 depicts the growth in Liberty University’s total fall headcount enrollment between 1992 and 2011. Overall, headcount enrollment increased from 8,500 in 1992 to 65,955 in 2011, an increase of 57,455 students or 676 percent. Breaking this total down by undergraduate, graduate, and first professional enrollment shows that undergraduate enrollment increased by 34,019 students or 495 percent over this period, graduate enrollment increased by 20,502 students or 1,308 percent, and first professional enrollment increased by 2,934 students or 5,147 percent.

Figure 3 puts these truly remarkable growth rates in perspective by comparing Liberty University’s growth in total fall headcount enrollment between 1992 and 2011 with that of Virginia’s other private non-profit colleges and universities, as well as the state’s public four-year institutions. As this figure demonstrates, in contrast to Liberty University’s 676 percent increase in enrollment over this period, Virginia’s other four-year private non-profit colleges and universities grew by 37 percent, and Virginia’s four-year public colleges and universities grew by 31 percent.

¹¹ Data Source: Liberty University.

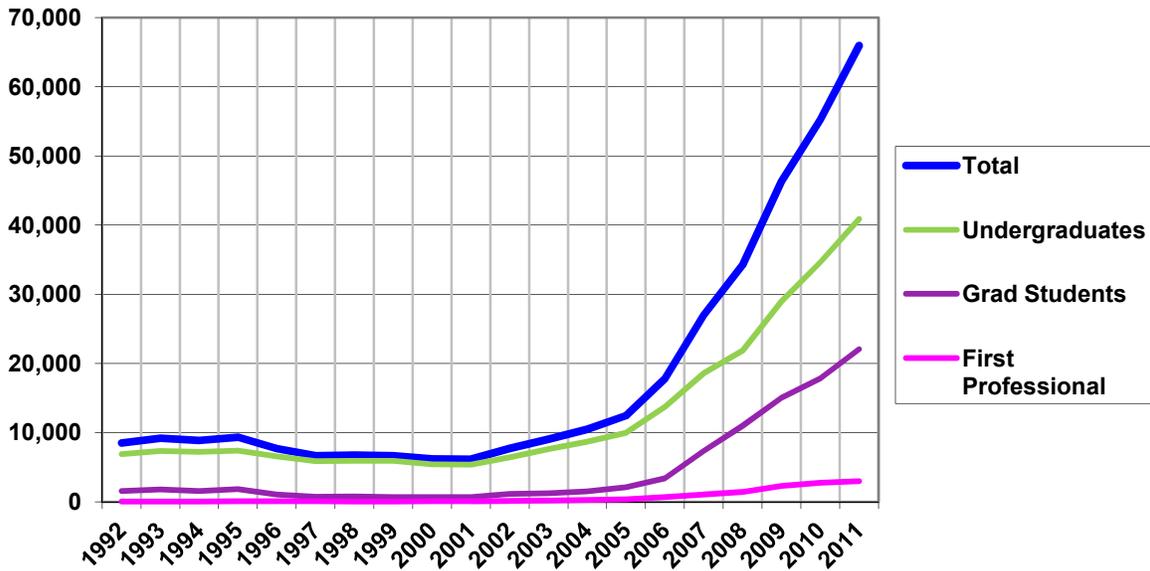


Figure 2: Fall Headcount Enrollment – 1992 to 2011¹²

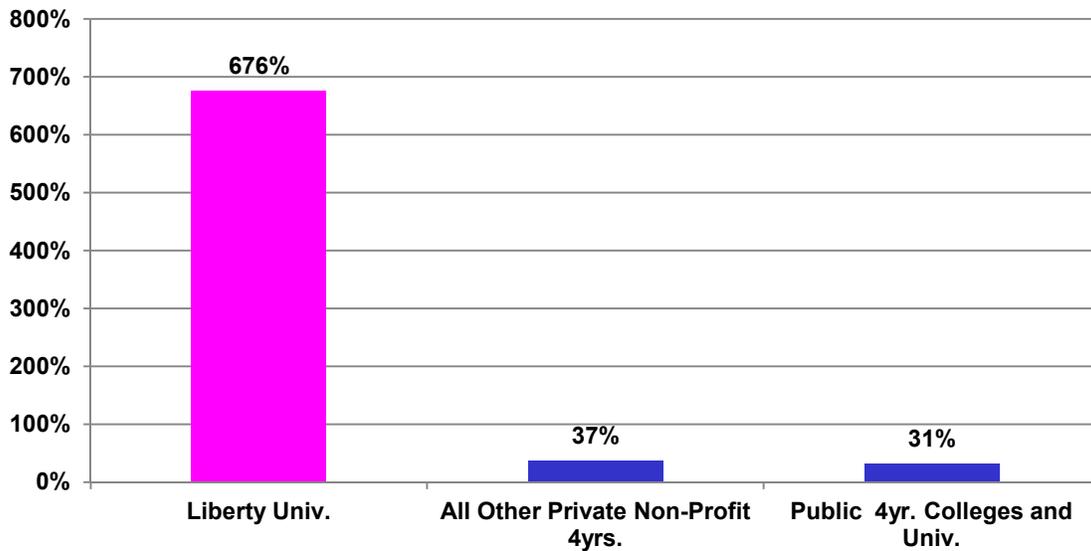


Figure 3: Total Enrollment Growth – Fall 1992 to Fall 2011¹³

¹² Data Source: State Council of Higher Education for Virginia.

¹³ Data Source: State Council of Higher Education for Virginia.

Students

Figures 4 through 6 provide additional information on the characteristics of the students that Liberty University serves. As shown in Figure 4, driven by its large graduate and online enrollment, Liberty University tends to serve a greater proportion of adult or non-traditional students (*i.e.*, students 25 years of age or older). In fall 2011, non-traditional students comprised 71 percent of Liberty University’s headcount enrollment, as compared to 34 percent in Virginia’s other private non-profit colleges and universities, and 27 percent in the state’s public four-year institutions.

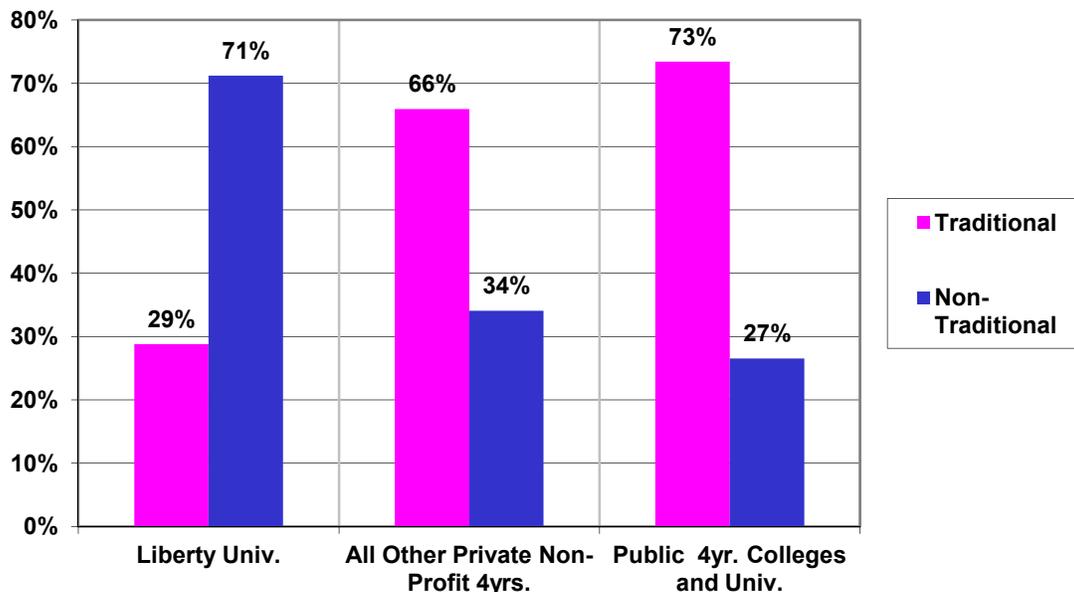


Figure 4: 2011 Fall Headcount Enrollment – Traditional and Non-Traditional Students¹⁴

Figure 5 details the race/ethnicity distribution of Liberty University’s student body and compares that distribution to the norm for other four-year non-profit colleges and universities in Virginia as well as Virginia’s public four-year institutions.¹⁵ As these data show, the distributions are quite comparable. In fall 2011, minority and foreign students comprised 34 percent of Liberty’s enrollment, 39 percent of enrollment at other Virginia four-year non-profit colleges, and 36 percent of enrollment in the state’s four year public colleges and universities.

¹⁴ Data Source: State Council of Higher Education for Virginia.

¹⁵ Data are only for those students for whom race/ethnicity was reported .

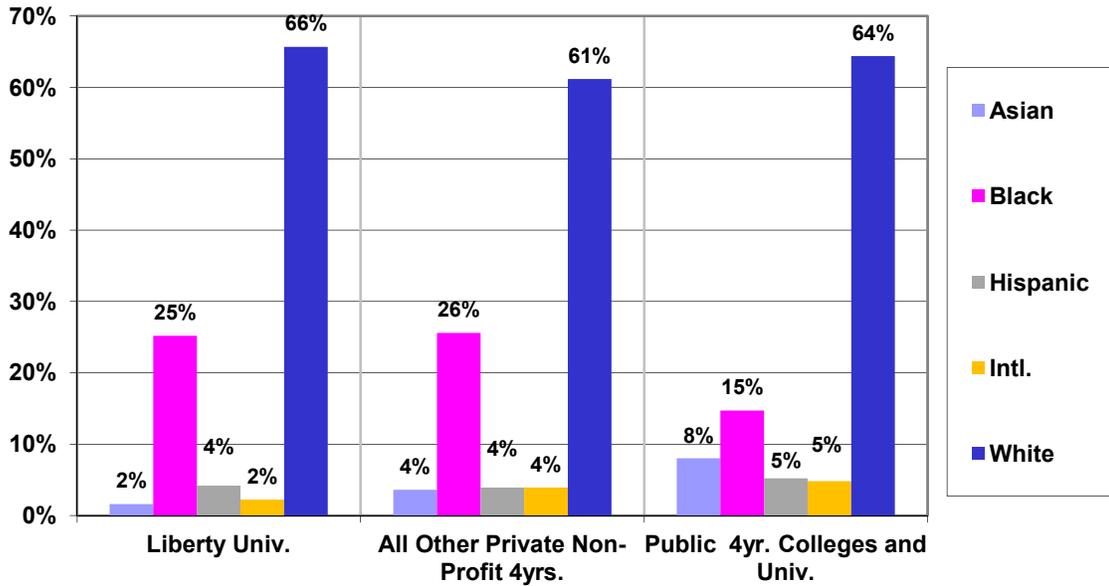


Figure 5: 2011 Fall Headcount Enrollment by Race/Ethnicity¹⁶

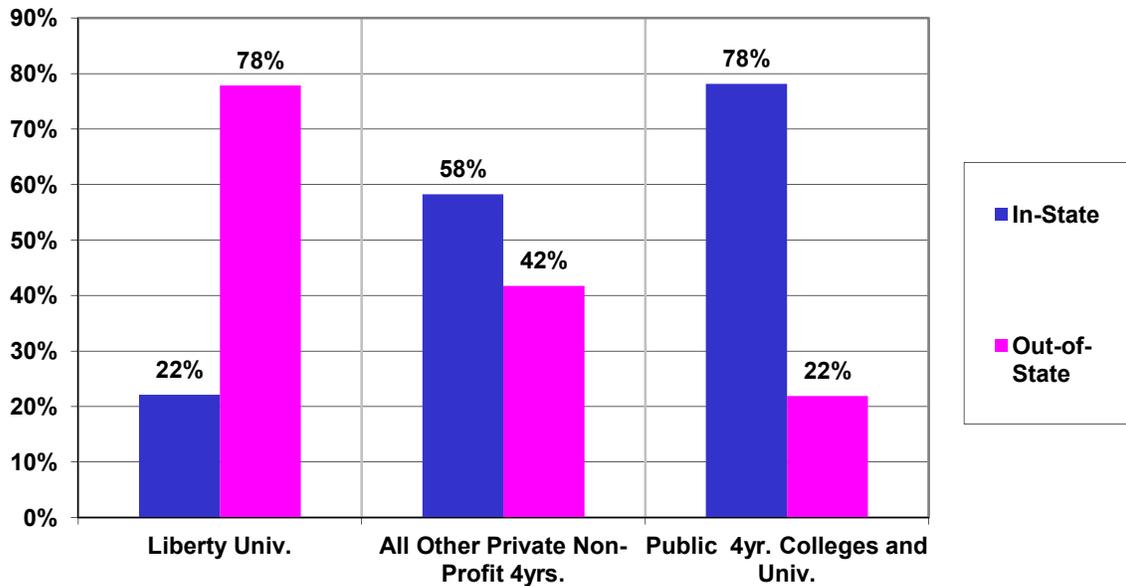


Figure 6: 2011 Fall Headcount Enrollment – In-State and Out-of-State Students¹⁷

¹⁶ Data Source: State Council of Higher Education for Virginia.

¹⁷ Data Source: State Council of Higher Education for Virginia.

Finally, Figure 6 provides information on the relative proportions of in-state and out-of-state students at Liberty University as compared to the other institutional categories. As this chart demonstrates, Liberty University's enrollment tends to be much more heavily comprised of out-of-state students (78 percent in fall 2011) than is typical for either Virginia's other non-profit colleges and universities (42 percent in fall 2011), or the state's public four-year institutions (22 percent in fall 2011). From an economic perspective, this means that Liberty University functions much like an export industry, in that it draws out-of-state dollars and resources into the Lynchburg MSA's and Virginia's economies, thereby fueling economic expansion.

Completions

Figure 7 provides information on the numbers and types of graduates that Liberty University produced in academic year 2011-12. As this chart shows, the largest number of graduates were in the following programs: *Theology and Religious Vocations* (2,077 degrees awarded), *Business, Management, Marketing and Related Support Activities* (2,038 degrees awarded), *Psychology* (1,674 degrees awarded), *Education* (1,367 degrees awarded), *Philosophy and Religious Studies* (1,070 degrees awarded), *Public Administration and Social Service Professions* (973 degrees awarded) and *Interdisciplinary Studies* (971 degrees awarded).

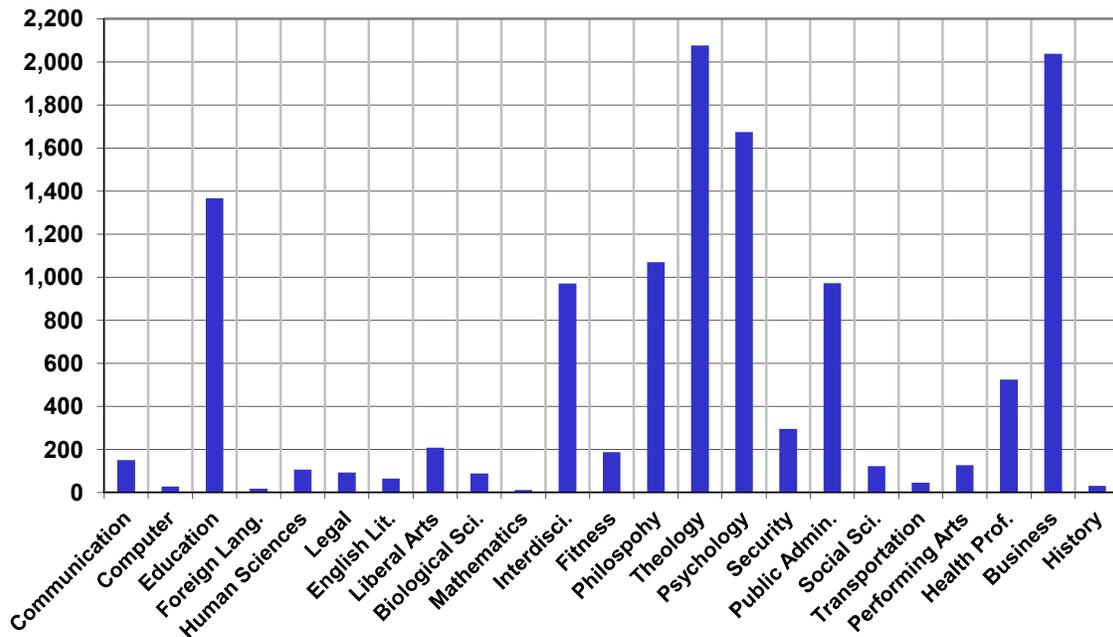


Figure 7: Liberty University 2011-12 Completions by Program¹⁸

Lynchburg MSA Profile¹⁹

In this section, we set the stage for the analyses that follow by providing background information on some of the Lynchburg MSA’s key economic characteristics.

Employment and Wage Trends

Figure 8 plots the change in total employment in the Lynchburg MSA between the first quarter of 2007 and the first quarter of 2012. As this graph shows, as it did throughout the rest of the country, total employment in the Lynchburg MSA dropped precipitously between the fourth quarter of 2008 and the first quarter of 2009 as the 2007 recession took its toll. Overall between the first quarter of 2007 and the first quarter of 2012, the Lynchburg MSA experienced an loss of 4,509 jobs, or a 4.5 percent decline in total employment.

¹⁸ *Data Source:* State Council of Higher Education for Virginia.

¹⁹ The Lynchburg MSA includes the counties of Amherst, Appomattox, Bedford, and Campbell, and the cities of Bedford and Lynchburg.

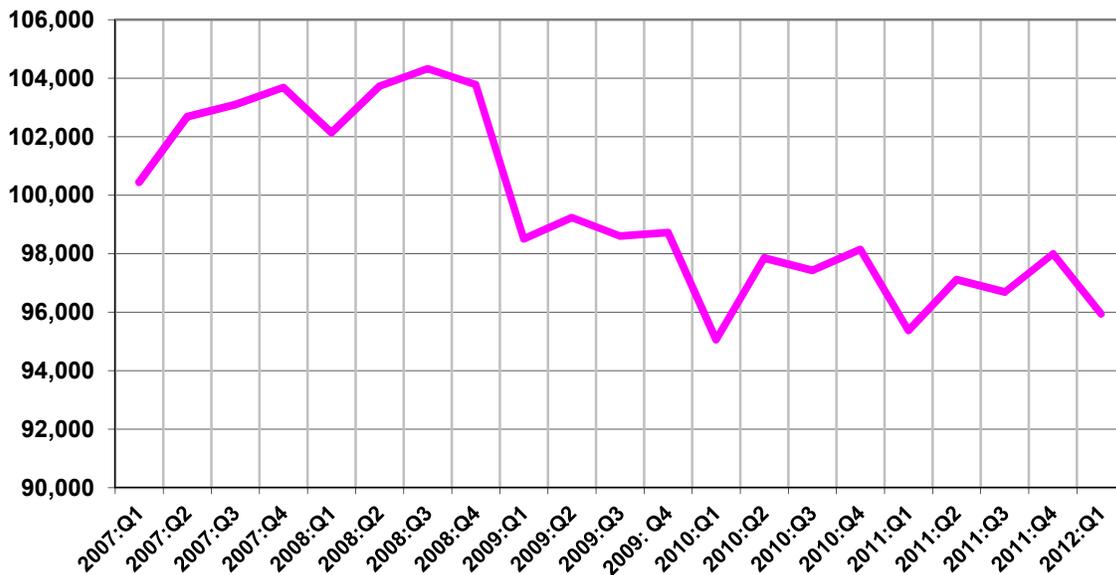


Figure 8: Lynchburg MSA Total Employment – 2007:Q1 to 2012:Q1²⁰

To provide a relative benchmark for the data presented in Figure 8 and to control for seasonality, Figure 9 compares the year-over-year change in total employment in the Lynchburg MSA to that of the state of Virginia as a whole over the same five year period. These data reveal two noteworthy characteristics. First, that the Lynchburg MSA entered the 2007 recession later than the state as a whole. Where the year over year change in employment turned negative at the statewide level in second quarter of 2008, in the Lynchburg MSA it did not make that transition until the first quarter of 2009. Second, that the Lynchburg MSA has lagged behind the state as a whole during the recovery, with the year over year change in employment turning positive at the statewide level in the third quarter of 2010, but not fully making the same transition in the Lynchburg MSA until the first quarter of 2012.

²⁰ Data Source: Virginia Employment Commission.

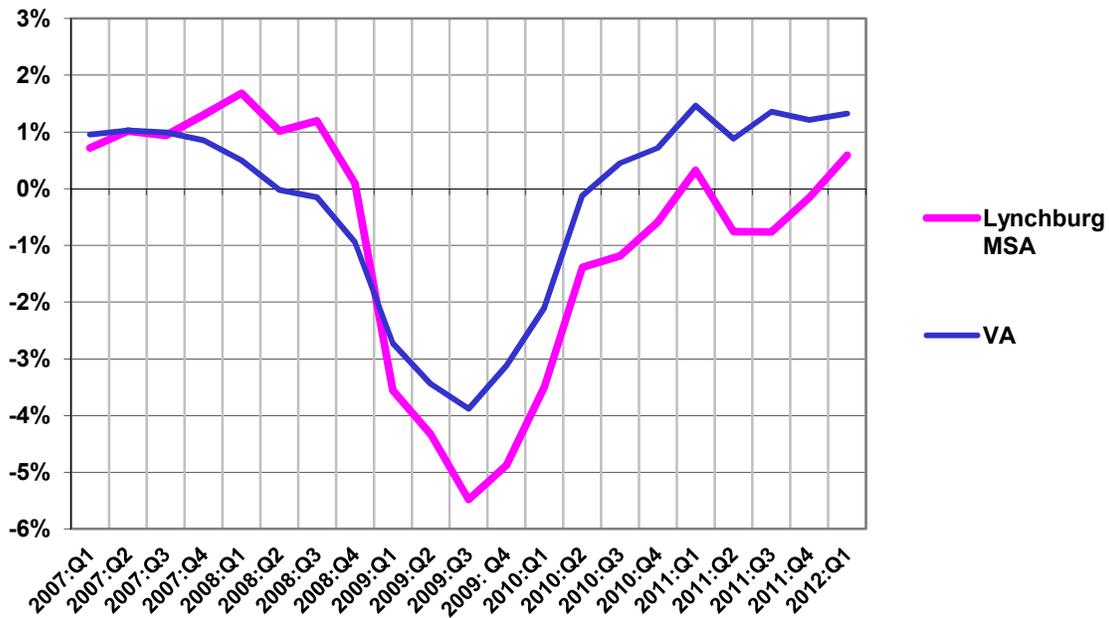


Figure 9: Year-Over-Year Change in Employment – 2007:Q1 to 2012:Q1²¹

Employment and Wages by Industry

Figure 10 provides a snapshot of employment in the Lynchburg MSA by major industry sector in the first quarter of 2012. As these data show, the four largest industry sectors in the region that quarter were: 1) *Healthcare* (15,523 jobs), 2) *Manufacturing* (14,648 jobs), 3) *Retail Trade* (12,720 jobs), and 4) *Education Services* (9,440 jobs).²² Figure 11 provides comparable data on average weekly wages in the Lynchburg MSA by major industry sector in the first quarter of 2012. As these data show, the four highest paying industry sectors in the region that quarter were: 1) *Professional and Technical Services* (\$1,500 per week), 2) *Finance and Insurance* (\$1,145 per week), 3) *Manufacturing* (\$1,109 per week), and 4) *Wholesale Trade* (\$1,064 per week). One of the more striking characteristics of these data is the significant role that *Manufacturing* plays in the Lynchburg MSA, both in terms of employment (15.3 percent of total employment regionally as opposed to 6.7 percent at the statewide level) and wages (2nd highest paying industry sector regionally as opposed to 9th highest at the statewide level).

²¹ *Data Source:* Virginia Employment Commission.

²² It is important to realize that these numbers do not include employment at Liberty University because Liberty is a non-profit institution and therefore exempt from reporting its employment numbers to the Virginia Employment Commission.

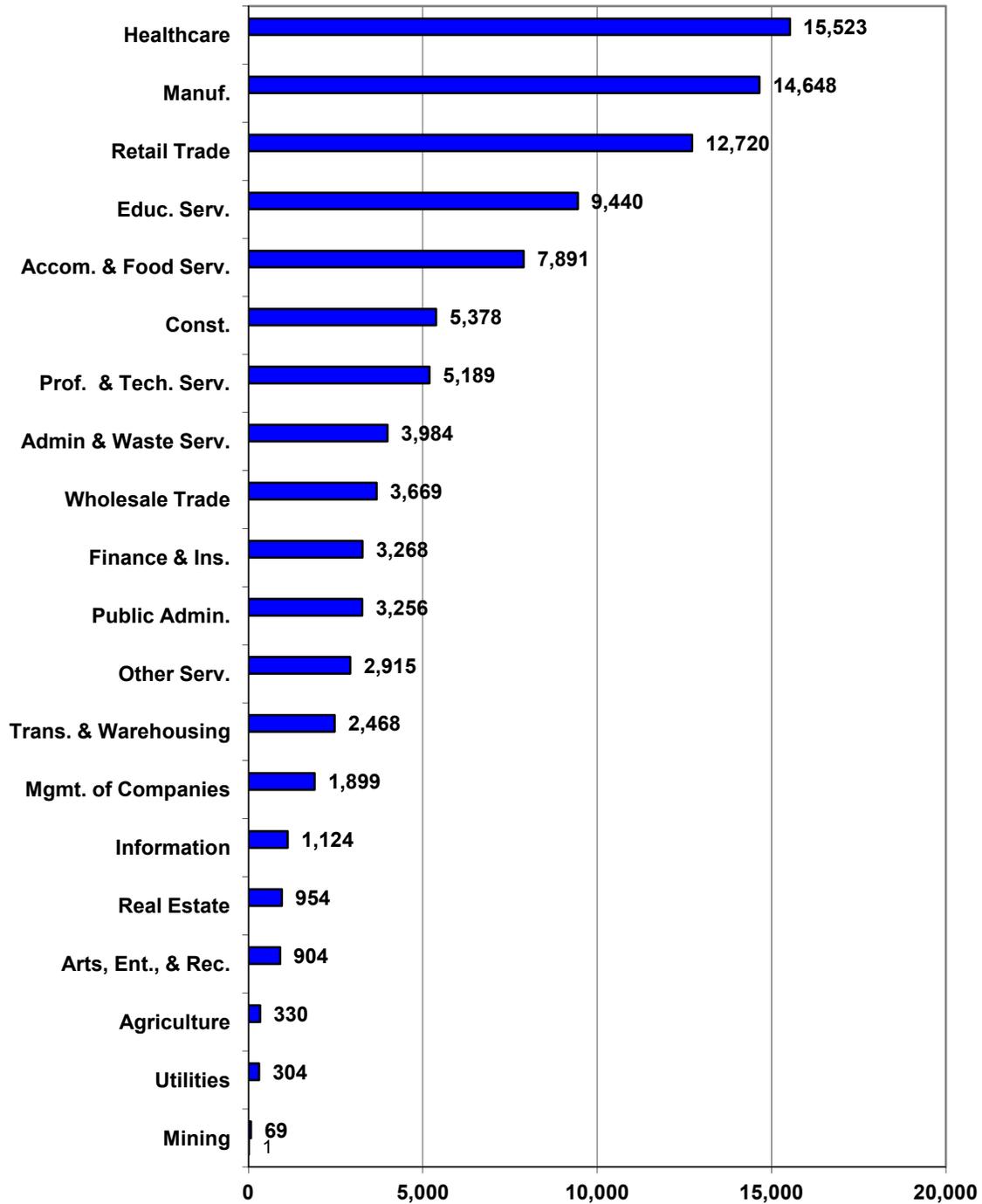


Figure 10: Lynchburg MSA Employment by Major Industry Category – 2012:Q1²³

²³ Data Source: Virginia Employment Commission.

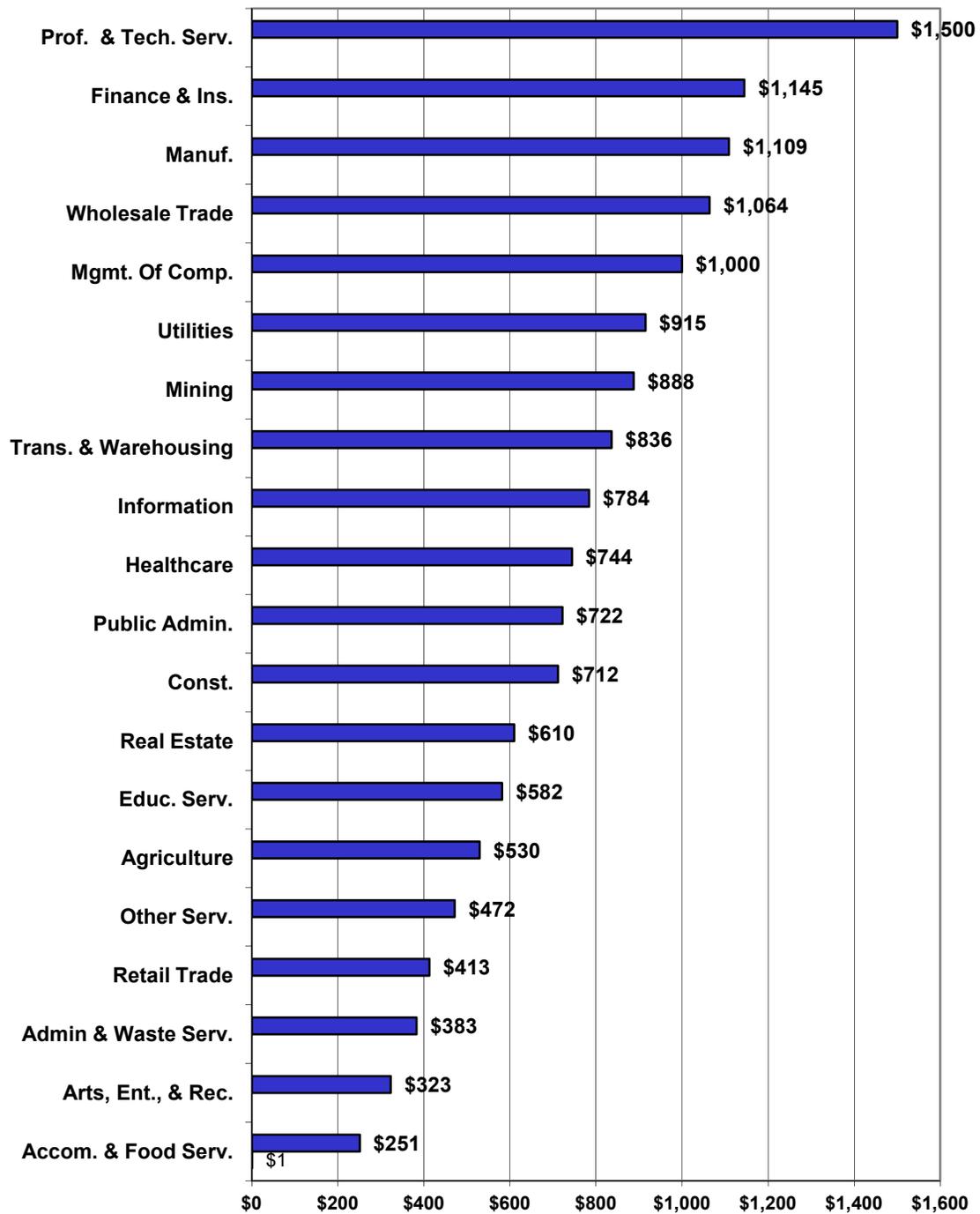


Figure 11: Lynchburg MSA Wages by Major Industry Category – 2012:Q1²⁴

²⁴ Data Source: Virginia Employment Commission.

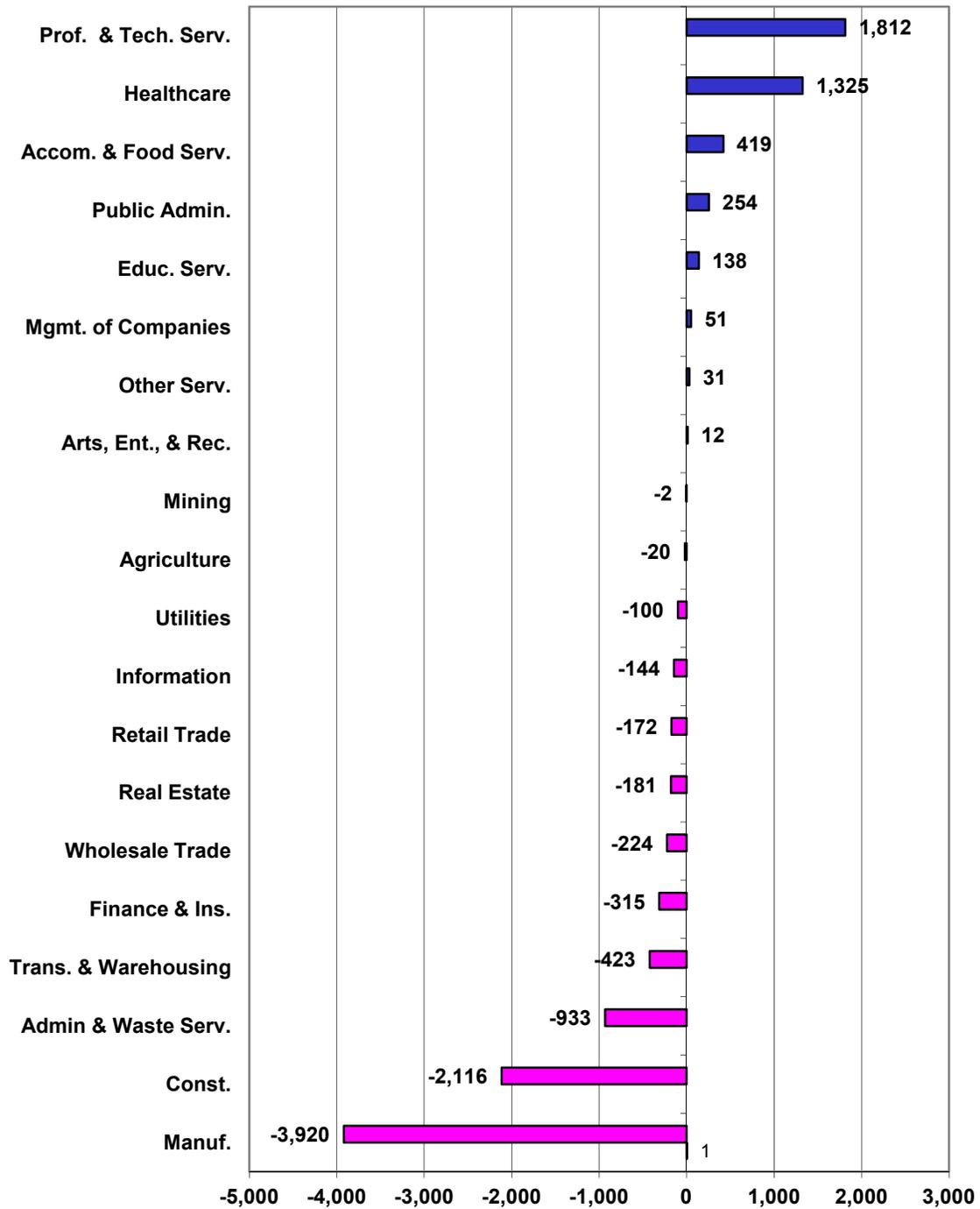


Figure 12: Lynchburg MSA Change in Employment by Major Industry Category – 2007:Q1 to 2012:Q1²⁵

²⁵ Data Source: Virginia Employment Commission.

Figure 12 provides detailed information on what drove the change in total employment depicted in Figure 8 between the first quarter of 2007 and the first quarter of 2012, by breaking that total change down according to major industry category. Recall from Figure 8 that, overall, the Lynchburg MSA lost a total of 4,509 jobs over this period. As the data in Figure 12 indicate, the sectors that were most responsible for this loss were: 1) *Manufacturing* (down 3,920 jobs), 2) *Construction* (down 2,116 jobs), 3) *Administrative and Waste Services* (down 933 jobs), and *Transportation and Warehousing* (down 423 jobs). At the other end of the spectrum, these recession driven losses in employment were partly off-set by gains in: 1) *Professional and Technical Services* (up 1,812 jobs), 2) *Healthcare* (up 1,325 jobs), *Accommodation and Food Services* (up 419 jobs), and *Public Administration* (up 254 jobs).

Unemployment

Finally, Figure 13 compares the unemployment rate in the Lynchburg MSA to that of Virginia statewide for the period between September of 2007 and September of 2012. As these data show, where unemployment in the Lynchburg MSA tracked fairly closely with the statewide average immediately prior to the 2007 recession, since January of 2009 it has hovered around 0.9 percent above that average. As of September 2012, the unemployment rate stood at 6.3 percent in the Lynchburg MSA and 5.6 percent statewide.

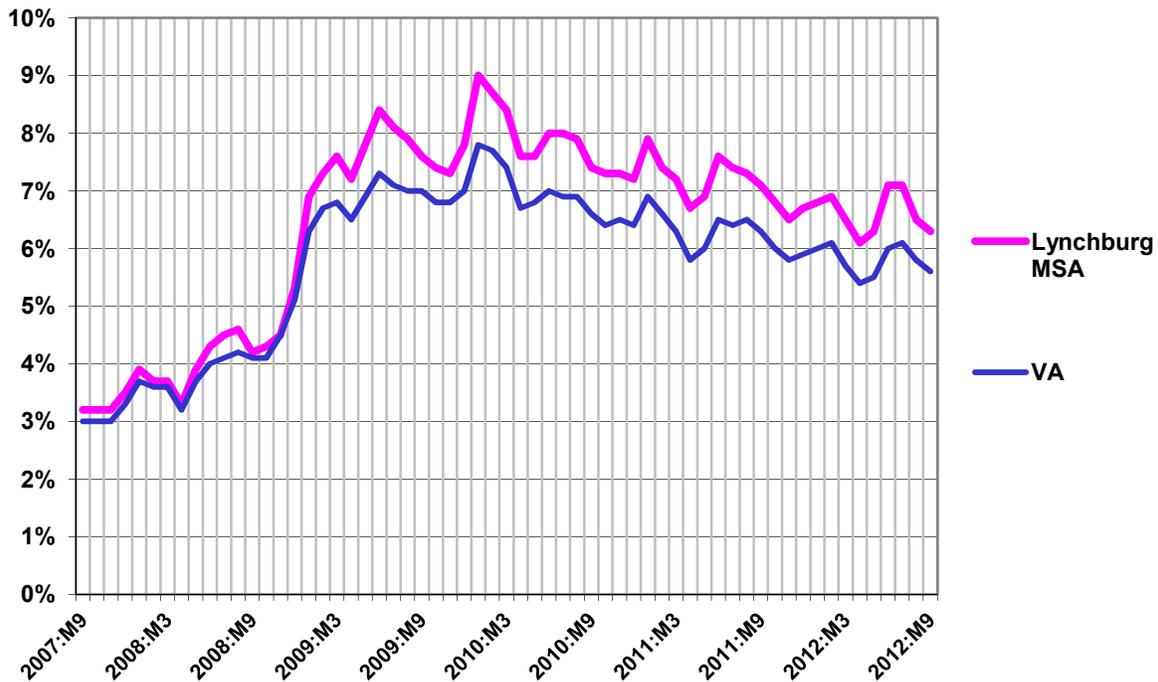


Figure 13: Region 2000 Unemployment Rate – 1994 to 2011²⁶

In sum, what the data presented in this section show is a region that is still heavily dependent on *Manufacturing*, was hit hard by the 2007 recession, and is still in the process of recovering from that blow. At another level, however, these data also implicitly point to the important role that Liberty University plays in the Lynchburg MSA in expanding the region’s portfolio of high-growth, non-*Manufacturing* sectors, and thereby providing a stabilizing influence on the region’s employment picture.

Economic and Fiscal Impact

In this section, we quantify the economic and fiscal contribution that Liberty University made to the Lynchburg MSA, as well as to the state of Virginia as a whole, in fiscal year 2011-12.²⁷ To accomplish this task, we employ a commonly used regional economic impact model called IMPLAN.²⁸ The IMPLAN model uses regional and national data on

²⁶ Data Source: Virginia Employment Commission.

²⁷ July 1 of 2011 through June 31 of 2012.

²⁸ IMPLAN v.3 is produced by Minnesota IMPLAN Group, Inc. The datasets used in the analysis presented in this report are for 2010, the most recent year for which data were available at the time this report was published.

production and trade flows to construct region-specific economic multipliers and uses these multipliers to quantify economic impact.

Economic multipliers measure the second round effects, or ripple effects, that an expenditure has as it makes its way through the economy. For example, as when Liberty University purchases goods and services – or when Liberty University employees use their salaries and wages to make household purchases – thereby generating income for someone else, which is in turn spent, thereby becoming income for yet someone else, and so on, and so on. Through this process, one dollar in expenditures generates multiple dollars of income. The mathematical relationship between the initial expenditure and the total income generated is the economic multiplier. The cumulative result of these second round effects is called indirect impact when it refers to business to business transactions, and induced impact when it refers to household (employee) to business transactions.

In the analysis that follows, we also provide estimates for three categories of economic impact. The first is employment, or the number of jobs that are created in the economy in addition to the direct employment attributable with Liberty University and its associated enterprises. The second is labor income, or the salaries and wages associated with those jobs. The third is economic output, or the total amount of economic activity that is generated in the economy beyond Liberty University and its associated enterprises.

Lynchburg MSA²⁹

Regional Spending

In fiscal year 2011-12, Liberty University was directly responsible for contributing \$342 million dollars in spending to the Lynchburg MSA. As shown in Figure 14:

- Liberty expenditures on goods and services accounted for 23 percent of that total (\$80 million),
- Liberty expenditures on salaries and wages accounted for 39 percent (\$133 million),
- Liberty expenditures on capital construction projects accounted for 10 percent (\$34 million),
- expenditures on goods and services by enterprises associated with Liberty accounted for 1 percent (\$2 million),

²⁹ The Lynchburg MSA is comprised of the counties of Amherst, Appomattox, Bedford, and Campbell, and the cities of Bedford and Lynchburg.

- expenditures on salaries and wages by enterprises associated with Liberty accounted for 1 percent (\$2 million),
- employee related healthcare expenditures accounted for 3 percent (\$10 million)
- spending from students accounted for 20 percent (\$69 million), and
- spending from visitors accounted for 3 percent (\$12 million).³⁰

In the next portion of this section, we quantify the total economic impact that this direct spending had on the Lynchburg MSA.

\$342 Million in Regional Spending

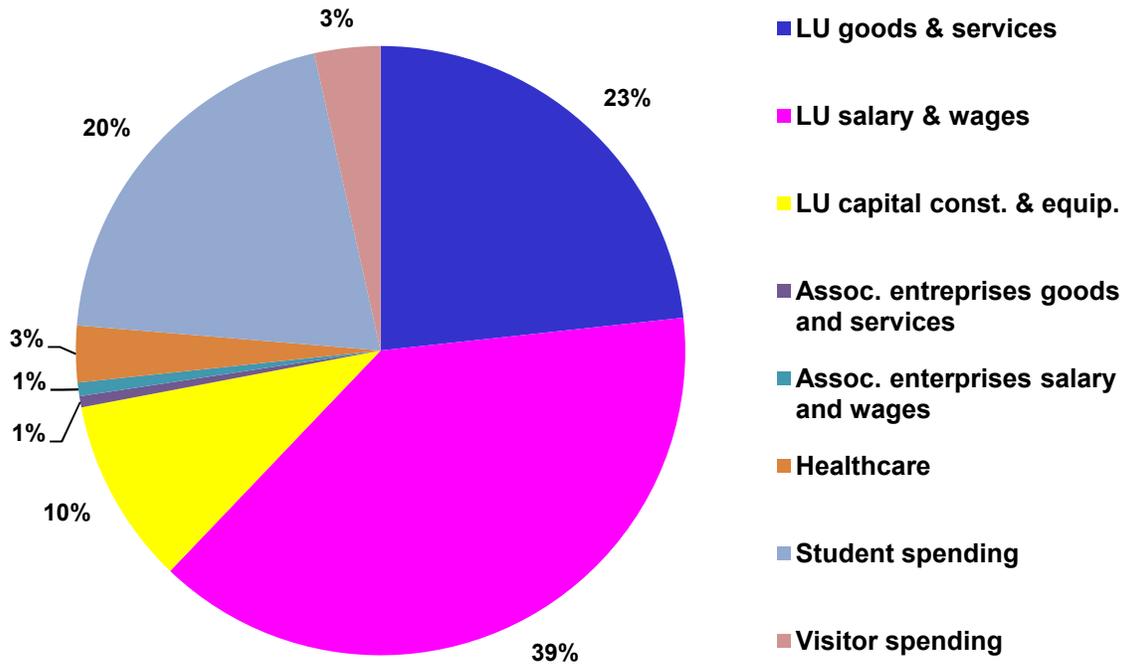


Figure 14: Distribution of Liberty University 2011-12 Spending within the Lynchburg MSA

³⁰ *Data Source:* Data on university and associated enterprises spending were obtained from Liberty University. Data on student and employee visitor spending were derived from an online survey of Liberty University students and employees administered in March 2010. Data on visitors to university events were derived from data provided by Liberty University on out-of-area event attendance and tourism spending data developed by the Virginia Tourism Corporation (see "FY 2007-2009 Profile of Leisure Travel in Virginia," Virginia Tourism Corporation).

Regional Economic Impact

It is important to realize that not all of Liberty University's \$342 million in fiscal year 2011-12 local spending stayed in the regional economy. Some of those dollars were spent on goods produced outside of the region (e.g., any consumer good with "made in China" stamped on the back of it), some were siphoned off as payroll deductions for social security and other programs, and some went into savings. Based on data from the IMPLAN model, we estimate that these "leakages" from the regional economy totaled \$203 million in fiscal year 2011-12. As a result, total net spending in the Lynchburg MSA attributable to Liberty University in fiscal year 2011-12 is estimated to be \$139 million.

As shown in Table 1, our analysis indicates that this \$139 million in net regional spending was responsible for generating:

- Regional Employment: In addition to directly providing 4,335 full time equivalent jobs within the region, economic activity associated with Liberty University also supported 2,561 full time equivalent jobs through second round effects, for a total regional employment impact of 6,896 full time equivalent jobs.
- Labor Income: In addition to directly providing \$155.5 million in regional labor income, economic activity associated with Liberty University also created \$86.1 million in additional regional labor income through second round effects, for a total regional labor income impact of \$241.7 million.
- Economic Output: In addition to directly generating \$139.4 in regional economic output, economic activity associated with Liberty University also generated \$303.1 million in regional economic activity through second round effects, for a total regional economic output impact of \$442.5 million.

Table 1: Estimated Total Economic Impact of Liberty University on the Lynchburg MSA in FY 2011-12

| | Employment | Labor Income | Output |
|---|--------------|----------------------|----------------------|
| <i>First Round Direct Economic Activity</i> | 4,335 | \$155,547,015 | \$139,401,194 |
| <i>Second Round Indirect and Induced Economic Activity</i> | 2,561 | \$86,104,984 | \$303,145,631 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 6,896 | \$241,651,997 | \$442,546,825 |

In the subsections that follow, we provide detailed analysis for each of the spending components listed in Figure 13.

1. Liberty University Expenditures on Goods and Services:

In assessing the likely economic impact attributable to Liberty University’s expenditures on goods and services within the Lynchburg MSA in fiscal year 2011-12, we employ the following assumption:

- Total university expenditures for goods and services within the Lynchburg MSA were \$79.5 million in fiscal year 2011-12.³¹

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual regional economic impact shown in Table 2:

- Regional Employment: Second round effects attributable to Liberty University’s expenditures on goods and services were responsible for supporting an additional 796 full time equivalent jobs in the region.
- Labor Income: Second round effects attributable to Liberty University’s expenditures on goods and services were responsible for generating \$27.2 million in additional labor income within the region.
- Economic Output: In addition to directly generating \$79.5 million in economic activity, Liberty University’s expenditures on goods and services also generated

³¹ Data Source: Liberty University.

\$112.9 million in regional activity through second round effects, for a total regional output impact of \$192.4 million.

Table 2: Estimated Economic Impact of Liberty University Expenditures on Goods and Services on the Lynchburg MSA in FY 2011-12

| | Employment | Labor Income | Output |
|---|------------|---------------------|----------------------|
| <i>First Round Direct Economic Activity</i> | | | \$79,518,957 |
| <i>Second Round Indirect and Induced Economic Activity</i> | 796 | \$27,206,472 | \$112,875,721 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 796 | \$27,206,472 | \$192,394,678 |

2. Liberty University Expenditures on Salaries and Wages:

We employ the following assumption in assessing the likely economic impact attributable to Liberty University’s expenditures on salaries and wages within the Lynchburg MSA in fiscal year 2011-12:

- Total university expenditures on salaries and wages within the Lynchburg MSA were \$132.7 million in fiscal year 2011-12.³²

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual regional economic impact shown in Table 3:

- Regional Employment: In addition to directly providing 3,664 full time equivalent jobs, Liberty University’s expenditures on salaries and wages also supported 953 full time equivalent jobs through second round effects, for a total regional employment impact of 4,617 full time equivalent jobs.
- Labor Income: In addition to directly providing \$132.7 million in labor income, Liberty University’s expenditures on salaries and wages also created \$31.5 million in additional regional labor income through second round effects, for a total regional labor income impact of \$164.2 million.

³² Data Source: Liberty University. Includes Liberty University employees and SODEXO contract employees.

- Economic Output: Second round effects attributable to Liberty University’s expenditures on salaries and wages were responsible for generating \$102.7 million in additional economic output in the region.

Table 3: Estimated Economic Impact of Liberty University Expenditures on Salaries and Wages on the Lynchburg MSA in FY 2011-12

| | Employment | Labor Income | Output |
|---|--------------|----------------------|----------------------|
| <i>First Round Direct Economic Activity</i> | 3,664 | \$132,693,830 | |
| <i>Second Round Indirect and Induced Economic Activity</i> | 953 | \$31,525,344 | \$102,700,387 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 4,617 | \$164,219,174 | \$102,700,387 |

3. Liberty University Expenditures on Capital Construction and Equipment:

In assessing the likely economic impact attributable to Liberty University’s expenditures on capital construction and equipment within the Lynchburg MSA in fiscal year 2011-12, we employ the following assumption:

- Total university expenditures on capital construction and equipment within the Lynchburg MSA were \$33.7 million in fiscal year 2011-12.³³

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual regional economic impact shown in Table 4:

- Regional Employment: In addition to directly providing 275 full time equivalent jobs, Liberty University’s expenditures on capital construction and equipment also supported 140 full time equivalent jobs through second round effects, for a total regional employment impact of 415 full time equivalent jobs.
- Labor Income: In addition to directly providing \$9.9 million in labor income, Liberty University’s expenditures on capital construction and equipment also created \$5.7 million in additional regional labor income through second round effects, for a total regional labor income impact of \$15.6 million.

³³ Data Source: Liberty University.

- **Economic Output:** In addition to directly generating \$32.8 in economic activity, Liberty University’s expenditures on capital construction and equipment also generated \$16.5 million in regional activity through second round effects, for a total regional output impact of \$49.3 million.

Table 4: Estimated Economic Impact of Liberty University Expenditures on Capital Construction and Equipment on the Lynchburg MSA in FY 2011-12

| | Employment | Labor Income | Output |
|---|------------|---------------------|---------------------|
| First Round Direct Economic Activity | 275 | \$9,852,160 | \$32,793,140 |
| Second Round Indirect and Induced Economic Activity | 140 | \$5,747,370 | \$16,508,501 |
| Total, Direct, Indirect, and Induced Economic Activity | 415 | \$15,599,531 | \$49,301,641 |

4. Associated Enterprise Expenditures on Goods and Services:

In assessing the likely economic impact attributable to expenditures on goods and services within the Lynchburg MSA in fiscal year 2011-12 by enterprises associated with Liberty University,³⁴ we employ the following assumption:

- Total associated enterprise expenditures for goods and services within the Lynchburg MSA were \$2.0 million in fiscal year 2011-12.³⁵

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual regional economic impact shown in Table 5:

- **Regional Employment:** Second round effects attributable to associated enterprise expenditures on goods and services were responsible for supporting an additional 22 full time equivalent jobs in the region.
- **Labor Income:** Second round effects attributable to associated enterprise expenditures on goods and services were responsible for generating \$0.7 million in additional labor income within the region.

³⁴ These enterprises include C and C Jetting, LLC; Freedom Aviation, LLC; Candler Station, LLC; Plaza Holdings, LLC; Liberty Mountain Capital, LLC; Liberty Mountain Conference Center, LLC; and Racquet Sports, LLC.

³⁵ Data Source: Liberty University.

- **Economic Output:** In addition to directly generating \$2.0 million in economic activity, associated enterprise expenditures on goods and services also generated \$2.7 million in regional activity through second round effects, for a total regional output impact of \$4.7 million.

Table 5: Estimated Economic Impact of Associated Enterprise Expenditures on Goods and Services on the Lynchburg MSA in FY 2011-12

| | Employment | Labor Income | Output |
|---|------------|------------------|--------------------|
| First Round Direct Economic Activity | | | \$2,031,446 |
| Second Round Indirect and Induced Economic Activity | 22 | \$715,897 | \$2,688,449 |
| Total, Direct, Indirect, and Induced Economic Activity | 22 | \$715,897 | \$4,719,895 |

5. Associated Enterprise Expenditures on Salaries and Wages:

We employ the following assumption in assessing the likely economic impact attributable to expenditures on salaries and wages within the Lynchburg MSA in fiscal year 2011-12 by enterprises associated with Liberty University:

- Total associated enterprise expenditures on salaries and wages within the Lynchburg MSA were \$2.5 million in fiscal year 2011-12.³⁶

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual regional economic impact shown in Table 6:

- **Regional Employment:** In addition to directly providing 96 full time equivalent jobs, associated enterprise expenditures on salaries and wages also supported 15 full time equivalent jobs through second round effects, for a total regional employment impact of 111 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$2.5 million in labor income, associated enterprise expenditures on salaries and wages also created \$0.5 million in additional regional labor income through second round effects, for a total regional labor income impact of \$3.0 million.

³⁶ Data Source: Liberty University. Includes Liberty University employees and SODEXO contract employees.

- Economic Output: Second round effects attributable to associated enterprise expenditures on salaries and wages were responsible for generating \$1.6 million in additional economic output in the region.

Table 6: Estimated Economic Impact of Associated Enterprise Expenditures on Salaries and Wages on the Lynchburg MSA in FY 2011-12

| | Employment | Labor Income | Output |
|---|------------|--------------------|--------------------|
| <i>First Round Direct Economic Activity</i> | 96 | \$2,484,238 | |
| <i>Second Round Indirect and Induced Economic Activity</i> | 15 | \$486,464 | \$1,598,017 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 111 | \$2,970,702 | \$1,598,017 |

6. Employee Related Healthcare Expenditures:

In assessing the likely economic impact attributable to healthcare expenditures within the Lynchburg MSA in fiscal year 2011-12 that were funded through employee healthcare insurance provided by Liberty University and its associated enterprises, we employ the following assumption:

- Total employee related healthcare expenditures within the Lynchburg MSA were \$10.2 million in fiscal year 2011-12.³⁷

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual regional economic impact shown in Table 7:

- Regional Employment: In addition to directly providing 83 full time equivalent jobs, employee related healthcare expenditures also supported 62 full time equivalent jobs through second round effects, for a total regional employment impact of 145 full time equivalent jobs.
- Labor Income: In addition to directly providing \$6.3 million in labor income, employee related healthcare expenditures also created \$2.0 million in additional regional labor income through second round effects, for a total regional labor income impact of \$8.4 million.

³⁷ Data Source: Liberty University.

- **Economic Output:** In addition to directly generating \$10.2 in economic activity, employee related healthcare expenditures also generated \$6.6 million in regional activity through second round effects, for a total regional output impact of \$16.8 million.

Table 7: Estimated Economic Impact of Employee Related Healthcare Expenditures on the Lynchburg MSA in FY 2011-12

| | Employment | Labor Income | Output |
|---|------------|--------------------|---------------------|
| First Round Direct Economic Activity | 83 | \$6,342,237 | \$10,217,425 |
| Second Round Indirect and Induced Economic Activity | 62 | \$2,022,343 | \$6,599,195 |
| Total, Direct, Indirect, and Induced Economic Activity | 145 | \$8,364,580 | \$16,816,619 |

7. Liberty University Student Spending:

Our assessment of the economic impact that spending by Liberty University students had on the Lynchburg MSA in fiscal year 2011-12 is predicated on the following assumptions:

- Liberty University students spent an average of \$505.77 per month in the Lynchburg MSA in fiscal year 2011-12.³⁸
- On average, Liberty University students reside in the Lynchburg MSA for 9.4 months out of the year.³⁹
- There are an estimated 13,218 Liberty University residential, commuter, or online students who reside in the Lynchburg MSA for at least a portion of the year.⁴⁰
- In addition to those residential, commuter, and online students who reside in the Lynchburg MSA, in fiscal year 2011-12 an additional 10,000 intensive online

³⁸ *Data Source:* Derived from a survey of Liberty University students conducted in March 2010.

³⁹ *Data Source:* Derived from student survey.

⁴⁰ *Data Source:* Derived from student survey. This estimate controls for the small number of Liberty University students who have spouses who are either enrolled or employed by the university, and therefore may also have been included in the survey sample.

students physically attended classes for some number of days at Liberty University's campus.⁴¹

- On average, these intensive online students made 2.8 visits to the campus in fiscal year 2011-12 and stayed 5.2 days each visit.
- Liberty University intensive online students spent an average of \$216.10 per visit in the Lynchburg MSA in fiscal year 2011-12.⁴²
- The distribution of Liberty University intensive online student's expenditures on various goods and services in fiscal year 2011-12 is comparable to tourism spending data developed by the Virginia Tourism Corporation for fiscal year 2009.⁴³
- Total expenditures by Liberty University students (resident, commuter, online living in the Lynchburg MSA, and intensive online students visiting the Lynchburg MSA) are estimated to be \$68.9 million in fiscal year 2011-12.⁴⁴

By feeding these assumptions into the IMPLAN model, we obtain the estimates of annual regional economic impact shown in Table 8:

- Regional Employment: In addition to directly providing 73 full time equivalent jobs, spending by Liberty University students also supported 524 full time equivalent jobs through second round effects, for a total regional employment impact of 597 full time equivalent jobs.
- Labor Income: In addition to directly providing \$1.4 million in labor income, spending by Liberty University students also created \$16.8 million in additional regional labor income through second round effects, for a total regional labor income impact of \$18.2 million.
- Economic Output: In addition to directly generating \$5.0 in economic activity, spending by Liberty University students also generated \$54.9 million in regional activity through second round effects, for a total regional output impact of \$59.9 million.

⁴¹ *Data Source*: Liberty University.

⁴² *Data Source*: Derived from student survey.

⁴³ *Data Source*: "FY 2007-2009 Profile of Leisure Travel in Virginia," Virginia Tourism Corporation.

⁴⁴ *Data Source*: Derived from student survey.

Table 8: Estimated Economic Impact of Liberty University Student Spending on the Lynchburg MSA in FY 2011-12

| | Employment | Labor Income | Output |
|---|------------|---------------------|---------------------|
| First Round Direct Economic Activity | 73 | \$1,401,248 | \$4,981,338 |
| Second Round Indirect and Induced Economic Activity | 524 | \$16,795,854 | \$54,938,900 |
| Total, Direct, Indirect, and Induced Economic Activity | 597 | \$18,197,102 | \$59,920,237 |

8. Liberty University Visitor Spending:

Our assessment of the economic impact on the Lynchburg MSA attributable to spending by Liberty University student and employee visitors, and out-of-town visitors to university events, in fiscal year 2011-12, is predicated on the following assumptions:

- Visitors to Liberty University students spent an average of \$201.27 per visit in the Lynchburg MSA in fiscal year 2011-12.⁴⁵
- 78 percent of Liberty University students had out-of-town visitors in fiscal year 2011-12.⁴⁶
- On average, each student receiving visitors had 3.2 visits during the year, each visit lasted 2.8 days, and involved 2.4 out-of-town visitors.⁴⁷
- Visitors to Liberty University employees spent an average of \$217.86 per visit in the Lynchburg MSA in fiscal year 2011-12.⁴⁸
- 87 percent of Liberty University employees had out-of-town visitors in fiscal year 2011-12.⁴⁹
- On average, each employee receiving visitors had 3.7 visits during the year, each visit lasted 3.1 days, and involved 2.7 out-of-town visitors.⁵⁰

⁴⁵ *Data Source:* Derived from student survey.

⁴⁶ *Data Source:* Derived from student survey.

⁴⁷ *Data Source:* Derived from student survey.

⁴⁸ *Data Source:* Derived from a survey of Liberty University employees conducted in March 2010.

⁴⁹ *Data Source:* Derived from employee survey.

⁵⁰ *Data Source:* Derived from employee survey.

- There were 65,675 out-of-town visitors to Liberty University events in fiscal year 2011-12.⁵¹
- The distribution of Liberty University visitor expenditures on various goods and services in fiscal year 2011-12 is comparable to tourism spending data developed by the Virginia Tourism Corporation for fiscal year 2009.⁵²
- Total expenditures by visitors to Liberty University students, employees, and events are estimated to be \$12.0 million in fiscal year 2011-12.⁵³

By feeding these assumptions into the IMPLAN model, we obtain the estimates of annual regional economic impact shown in Table 9:

- Regional Employment: In addition to directly providing 144 full time equivalent jobs, spending by visitors to Liberty University also supported 49 full time equivalent jobs through second round effects, for a total regional employment impact of 193 full time equivalent jobs.
- Labor Income: In addition to directly providing \$2.8 million in labor income, spending by visitors to Liberty University also created \$1.6 million in additional regional labor income through second round effects, for a total regional labor income impact of \$4.4 million.
- Economic Output: In addition to directly generating \$9.9 in economic activity, spending by visitors to Liberty University also generated \$5.2 million in regional activity through second round effects, for a total regional output impact of \$15.1 million.

⁵¹ *Data Source*: Liberty University.

⁵² *Data Source*: "FY 2007-2009 Profile of Leisure Travel in Virginia," Virginia Tourism Corporation.

⁵³ *Data Source*: Derived from the student and employee surveys, as well as event information provided by Liberty University.

Table 9: Estimated Economic Impact of Liberty University Visitor Spending on the Lynchburg MSA in FY 2011-12

| | Employment | Labor Income | Output |
|---|------------|--------------------|---------------------|
| First Round Direct Economic Activity | 144 | \$2,773,302 | \$9,858,888 |
| Second Round Indirect and Induced Economic Activity | 49 | \$1,605,240 | \$5,236,461 |
| Total, Direct, Indirect, and Induced Economic Activity | 193 | \$4,378,539 | \$15,095,351 |

Regional Fiscal Impact

In this section we provide a more narrowly focused analysis of the fiscal, or tax revenue, impact that Liberty University’s activities had on the Lynchburg MSA in fiscal year 2011-12. That fiscal impact comes from seven primary local revenue streams:

- Real Property Tax: The local tax that employees and students who own homes within the region pay on those properties.
- Personal Property Tax: The local tax that employees and students who own cars that are registered within the region pay on those vehicles.
- Motor Vehicle License Fee: The fee that employees and students who own cars pay to register those vehicles locally.
- Restaurant Food Tax: The tax that some localities add to meals purchased in restaurants.
- Hotel and Motel Room Tax: The tax that some localities add to hotel and motel room charges.
- Sales Tax: The one percent portion of the state sales tax that goes to localities.
- Other Local Taxes: Water and sewer fees paid by Liberty University to the city of Lynchburg.

Our estimates of fiscal impact are based on detailed data obtained from three sources: 1) surveys of Liberty University employees and students,⁵⁴ 2) information on out-of-town attendees to Liberty University events,⁵⁵ and 3) information on the economic activities of enterprises associated with Liberty University.⁵⁶ As shown in Table 10, based on these data we estimate that Liberty University, in combination with its employees, students, visitors, and retail tenants contributed a total of approximately \$9.5 million in local tax revenue to the Lynchburg MSA in fiscal year 2011-12.

If we focus exclusively on the city of Lynchburg, where Liberty University's campus is physically located, what these data show is that in fiscal year 2011-12 Liberty University generated approximately \$5.6 million in tax revenue for the city. More specifically, Liberty University was responsible for generating approximately:

- 3 percent of the city of Lynchburg's total *Real Property Tax* revenue,
- 8 percent of its *Personal Property Tax* revenue,
- 10 percent of its *Restaurant Food Tax* revenue,
- 19 percent of its *Hotel and Motel Room Tax* revenue, and
- 3 percent of its local *Sales Tax* revenue.⁵⁷

In the subsections that follow, we provide additional detail on the sources of the revenue streams summarized in Table 10.

⁵⁴ The employee and student surveys were administered in an online format in March 2010. There were 1,594 respondents to the employee survey (a 50 percent response rate), 4,513 respondents to the resident/commuter student survey (a 37 percent response rate), and 679 respondents to the survey of online students residing within Region 2000 (a 21 percent response rate). Respondents were asked to provide detailed information on their 2009 local spending habits, home ownership, vehicle ownership, and out-of-town visitors.

⁵⁵ *Data Source:* Liberty University. According to university data, in fiscal year 2011-12 there were at least 65,675 out-of-town attendees at university sponsored events. Estimates of out-of-town visitor spending were based on inflation adjusted estimates from the Virginia Tourism Corporation's "FY 2007-2009 Profile of Leisure Travel in Virginia."

⁵⁶ *Data Source:* Liberty University.

⁵⁷ Derived from data on local tax revenue collected by the Virginia Auditor of Public Accounts. See "Comparative Report of Local Government Revenues and Expenditures, for the Fiscal Year Ended June 30, 2011," Virginia Auditor of Public Accounts.

Table 10: Estimated Total Fiscal Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2011-12

| | Amherst Co. | Appomattox Co. | Bedford City | Bedford Co. | Campbell Co. | Lynchburg City | TOTAL |
|---|------------------|------------------|------------------|--------------------|--------------------|--------------------|--------------------|
| Real Property⁵⁸ | \$255,245 | \$169,762 | \$141,502 | \$911,920 | \$790,411 | \$1,765,499 | \$4,034,339 |
| Personal Property⁵⁹ | \$98,019 | \$64,006 | \$39,302 | \$301,779 | \$655,378 | \$896,913 | \$2,055,398 |
| Motor Vehicle License Fee⁶⁰ | \$8,755 | \$4,596 | \$0 | \$0 | \$47,404 | \$83,511 | \$144,266 |
| Restaurant Food Tax⁶¹ | \$36,821 | \$14,115 | \$12,557 | \$103,627 | \$0 | \$1,141,991 | \$1,309,111 |
| Hotel and Motel Room Tax⁶² | \$6,621 | \$3,945 | \$1,304 | \$18,318 | \$0 | \$338,196 | \$368,383 |
| Local Sales Tax⁶³ | \$22,070 | \$8,901 | \$7,084 | \$66,799 | \$102,664 | \$395,579 | \$603,097 |
| Other Local Taxes⁶⁴ | | | | | | \$948,011 | \$948,011 |
| TOTAL | \$427,532 | \$265,326 | \$201,749 | \$1,402,443 | \$1,595,856 | \$5,569,700 | \$9,462,605 |

⁵⁸ 2012 Real Property Tax Rates: Amherst County – \$0.52 per \$100 of assessed value, Appomattox County – \$0.58, Bedford City – \$0.86, Bedford County – \$0.50, Campbell County – \$0.53, and Lynchburg City – \$1.05.

⁵⁹ 2012 Personal Property Tax Rates: Amherst County – \$3.25 per \$100 of assessed value, Appomattox County – \$4.60, Bedford City – \$2.43, Bedford County – \$2.35, Campbell County – \$4.45, and Lynchburg City – \$3.80. Based on data from the State Council of Higher Education for Virginia on the location of domicile for first-time freshmen at Liberty University, we conservatively estimate that only 5.9 percent of university students who own vehicles actually pay personal property tax on those vehicles in Region 2000.

⁶⁰ 2012 Motor Vehicle License Fees: Amherst County – \$25.00, Appomattox County – \$25.00, Bedford City – none, Bedford County – none, Campbell County – \$27.00, and Lynchburg City – \$29.50. Conservatively assumes that only 5.9 percent of Liberty University students who own vehicles actually register those vehicles in Region 2000.

⁶¹ 2012 Restaurant and Food Tax: Amherst County – 4.0%, Appomattox County – 5.0%, Bedford City – 5.0%, Bedford County – 4.0%, Campbell County – none, and Lynchburg City – 6.5%.

⁶² 2009 Hotel and Motel Room Tax: Amherst County – 5.0%, Appomattox County – 5.0%, Bedford City – 5.0%, Bedford County – 5.0%, Campbell County – none, and Lynchburg City – 5.5%.

⁶³ One percent of retail sales in all localities.

⁶⁴ Comprised exclusively of water and sewer fees paid by Liberty University to the city of Lynchburg.

1. Real Property Tax:

Table 11 provides additional detail on the estimated sources of the real property tax revenue summary provided in Table 10. It is important to emphasize that the figures presented below are based exclusively on estimates of the number of Liberty University employees and students who own homes within the Lynchburg MSA. These totals do not reflect the property tax that is indirectly paid by the approximately 38 percent of Liberty University students who rent homes or apartments in the Lynchburg MSA. As a result, the estimates provided below should be viewed as exceedingly conservative.

Table 11: Estimated Real Property Tax Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2011-12

| | Amherst Co. | Appomattox Co. | Bedford City | Bedford Co. | Campbell Co. | Lynchburg City | TOTAL |
|--|------------------|------------------|------------------|------------------|------------------|--------------------|--------------------|
| University and Associated Enterprises | N/A | N/A | N/A | N/A | N/A | \$389,723 | \$389,723 |
| Employees | \$111,812 | \$58,818 | \$123,738 | \$571,883 | \$525,667 | \$1,169,967 | \$2,561,885 |
| Students | \$143,432 | \$110,944 | \$17,764 | \$340,037 | \$264,745 | \$595,532 | \$1,472,453 |
| TOTAL | \$255,245 | \$169,762 | \$141,502 | \$911,920 | \$790,411 | \$1,765,499 | \$4,424,062 |

2. Personal Property Tax:

Table 12 provides additional detail on the estimated sources of the personal property tax revenue summary provided in Table 10.

Table 12: Estimated Personal Property Tax Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2011-12

| | Amherst Co. | Appomattox Co. | Bedford City | Bedford Co. | Campbell Co. | Lynchburg City | TOTAL |
|---------------------------------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|--------------------|
| University and Associated Enterprises | N/A | N/A | N/A | N/A | N/A | \$250,584 | \$305,939 |
| Employees | \$86,171 | \$55,753 | \$37,466 | \$281,508 | \$597,327 | \$721,044 | \$1,779,270 |
| Students | \$11,848 | \$8,253 | \$1,836 | \$20,271 | \$58,050 | \$175,869 | \$276,128 |
| TOTAL | \$98,019 | \$64,006 | \$39,302 | \$301,779 | \$655,378 | \$896,913 | \$2,361,337 |

3. Motor Vehicle License Fee:

Table 13 provides additional detail on the estimated sources of the motor vehicle license fee revenue summary provided in Table 10.

Table 13: Estimated Motor Vehicle License Fee Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2011-12

| | Amherst Co. | Appomattox Co. | Bedford City | Bedford Co. | Campbell Co. | Lynchburg City | TOTAL |
|--------------|----------------|----------------|--------------|-------------|-----------------|-----------------|------------------|
| Employees | \$7,709 | \$4,202 | \$0 | \$0 | \$43,747 | \$70,218 | \$125,876 |
| Students | \$1,047 | \$394 | \$0 | \$0 | \$3,657 | \$13,293 | \$18,391 |
| TOTAL | \$8,755 | \$4,596 | \$0 | \$0 | \$47,404 | \$83,511 | \$144,266 |

4. Restaurant Food Tax:

Table 14 provides additional detail on the estimated sources of the restaurant food tax revenue summary provided in Table 10.

Table 14: Estimated Restaurant Food Tax Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2011-12

| | Amherst Co. | Appomattox Co. | Bedford City | Bedford Co. | Campbell Co. | Lynchburg City | TOTAL |
|----------------------|-----------------|-----------------|-----------------|------------------|--------------|--------------------|--------------------|
| Employees | \$6,195 | \$3,804 | \$4,328 | \$32,705 | \$0 | \$201,815 | \$248,847 |
| Students | \$19,447 | \$5,952 | \$5,069 | \$43,311 | \$0 | \$659,338 | \$733,117 |
| Intensive Students | \$9,009 | \$2,757 | \$2,349 | \$20,065 | \$0 | \$163,580 | \$197,760 |
| Visitors (employees) | \$557 | \$296 | \$413 | \$3,509 | \$0 | \$11,322 | \$16,097 |
| Visitors (students) | \$1,612 | \$1,307 | \$398 | \$4,038 | \$0 | \$57,329 | \$64,684 |
| Events | \$0 | \$0 | \$0 | \$0 | \$0 | \$48,607 | \$48,607 |
| TOTAL | \$36,821 | \$14,115 | \$12,557 | \$103,627 | \$0 | \$1,141,991 | \$1,309,111 |

5. Hotel and Motel Room Tax:

Table 15 provides additional detail on the estimated sources for the hotel and motel room tax revenue summary provided in Table 10.

Table 15: Estimated Hotel and Motel Room Tax Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2011-12

| | Amherst Co. | Appomattox Co. | Bedford City | Bedford Co. | Campbell Co. | Lynchburg City | TOTAL |
|----------------------|----------------|----------------|----------------|-----------------|--------------|------------------|------------------|
| Intensive Students | \$4,026 | \$2,555 | \$685 | \$10,111 | \$0 | \$182,903 | \$200,279 |
| Visitors (employees) | \$684 | \$176 | \$294 | \$3,404 | \$0 | \$11,879 | \$16,438 |
| Visitors (students) | \$1,912 | \$1,213 | \$325 | \$4,802 | \$0 | \$82,059 | \$90,310 |
| Events | \$0 | \$0 | \$0 | \$0 | \$0 | \$61,356 | \$61,356 |
| TOTAL | \$6,621 | \$3,945 | \$1,304 | \$18,318 | \$0 | \$338,196 | \$368,383 |

6. Local Sales Tax:

Table 16 provides additional detail on the estimated sources for the local sales tax revenue summary provided in Table 10.

Table 16: Estimated Local Sales Tax Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2011-12

| | Amherst Co. | Appomattox Co. | Bedford City | Bedford Co. | Campbell Co. | Lynchburg City | TOTAL |
|----------------------|-----------------|----------------|----------------|-----------------|------------------|------------------|------------------|
| Employees | \$9,473 | \$4,342 | \$4,539 | \$40,020 | \$54,275 | \$92,682 | \$205,332 |
| Students | \$11,711 | \$4,124 | \$2,317 | \$24,220 | \$44,143 | \$276,999 | \$363,516 |
| Intensive Students | \$370 | \$130 | \$73 | \$766 | \$1,396 | \$8,760 | \$11,496 |
| Visitors (employees) | \$132 | \$56 | \$78 | \$833 | \$1,014 | \$1,655 | \$3,769 |
| Visitors (students) | \$383 | \$248 | \$76 | \$959 | \$1,836 | \$8,379 | \$11,880 |
| Events | \$0 | \$0 | \$0 | \$0 | \$0 | \$7,104 | \$7,104 |
| TOTAL | \$22,070 | \$8,901 | \$7,084 | \$66,799 | \$102,664 | \$395,579 | \$603,097 |

7. Other Local Taxes:

Table 17 provides additional detail on the estimated sources for the real property tax revenue summary provided in Table 10.

Table 17: Estimated Other Local Tax Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2011-12

| | Amherst Co. | Appomattox Co. | Bedford City | Bedford Co. | Campbell Co. | Lynchburg City | TOTAL |
|--------------|-------------|----------------|--------------|-------------|--------------|------------------|------------------|
| University | N/A | N/A | N/A | N/A | N/A | \$948,011 | \$948,011 |
| TOTAL | \$0 | \$0 | \$0 | \$0 | \$0 | \$948,011 | \$948,011 |

Virginia

State Spending

In fiscal year 2011-12, Liberty University was directly responsible for contributing \$424 million dollars in spending to Virginia's economy. As shown in Figure 15:

- Liberty expenditures on goods and services accounted for 22 percent of that total (\$95 million),
- Liberty expenditures on salaries and wages accounted for 33 percent (\$141 million),
- Liberty expenditures on capital construction projects accounted for 12 percent (\$51 million),
- expenditures on goods and services by enterprises associated with Liberty accounted for 1 percent (\$4 million),
- expenditures on salaries and wages by enterprises associated with Liberty accounted for 1 percent (\$3 million),
- employee related healthcare expenditures accounted for 3 percent (\$11 million)
- spending from students accounted for 25 percent (\$106 million), and
- spending from visitors accounted for 3 percent (\$13 million).⁶⁵

In the next portion of this section, we quantify the total economic impact that this direct spending had on the Lynchburg MSA.

⁶⁵ *Data Source:* Data on university and associated enterprises spending were obtained from Liberty University. Data on student and employee visitor spending were derived from an online survey of Liberty University students and employees administered in March 2010. Data on visitors to university events were derived from data provided by Liberty University on out-of-area event attendance and tourism spending data developed by the Virginia Tourism Corporation (*see* "FY 2007-2009 Profile of Leisure Travel in Virginia," Virginia Tourism Corporation).

\$424 Million in Regional Spending

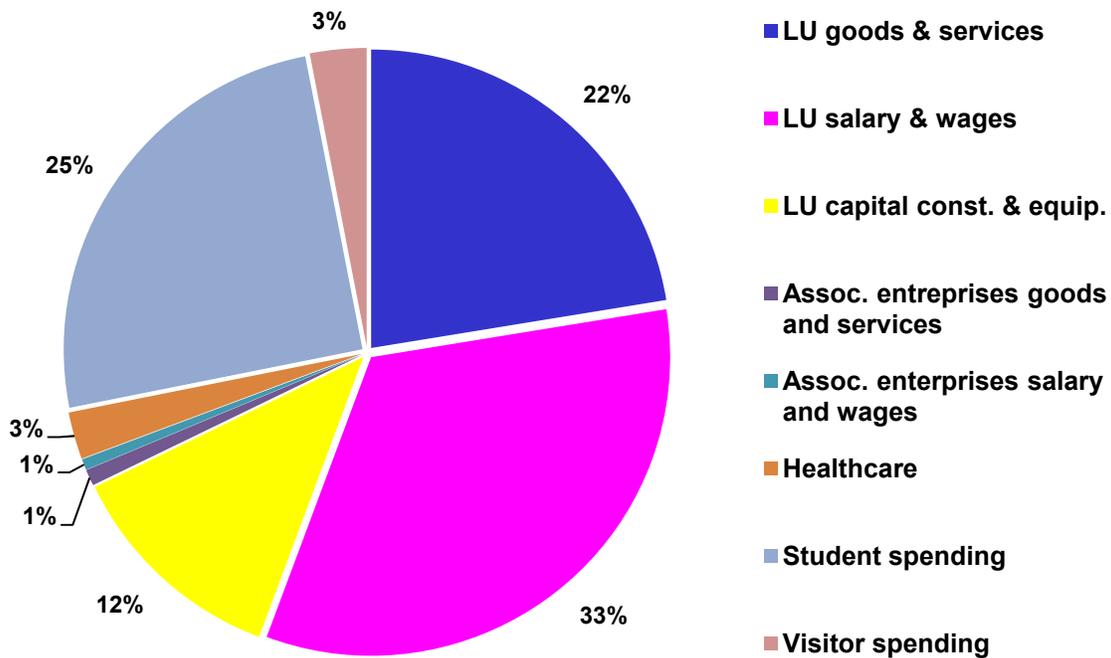


Figure 15: Distribution of Liberty University 2011-12 Spending within Virginia

Statewide Economic Impact

It is important to again realize that not all of Liberty University’s \$424 million in fiscal year 2011-12 statewide spending stayed in Virginia’s economy. Some of those dollars were spent on goods produced outside of the region, some were siphoned off as payroll deductions for social security and other programs, and some went into savings. Based on data from the IMPLAN model, we estimate that these “leakages” from the statewide economy totaled \$247 million in fiscal year 2011-12. As a result, total net spending in Virginia attributable to Liberty University in fiscal year 2011-12 is estimated to be \$177 million.

As shown in Table 18, our analysis indicates that this \$177 million in net statewide spending was responsible for generating:

- Statewide Employment: In addition to directly providing 4,654 full time equivalent jobs within the state, economic activity associated with Liberty

University also supported 3,379 full time equivalent jobs through second round effects, for a total statewide employment impact of 8,033 full time equivalent jobs.

- **Labor Income:** In addition to directly providing \$174.5 million in statewide labor income, economic activity associated with Liberty University also created \$150.8 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$325.3 million.
- **Economic Output:** In addition to directly generating \$176.5 million in statewide economic output, economic activity associated with Liberty University also generated \$462.1 million in statewide economic activity through second round effects, for a total statewide economic output impact of \$638.7 million.
- **Fiscal Impact:** Economic activity attributable to Liberty University generated \$29.8 million in additional state and local tax revenue, and \$43.9 million in additional federal tax revenue, for a total fiscal impact of \$73.7 million.

Table 18: Estimated Total Economic Impact of Liberty University on Virginia in FY 2011-12

| | Employment | Labor Income | Output |
|---|-----------------|---------------|---------------|
| <i>First Round Direct Economic Activity</i> | 4,654 | \$174,460,061 | \$176,533,470 |
| <i>Second Round Indirect and Induced Economic Activity</i> | 3,379 | \$150,839,037 | \$462,133,049 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 8,033 | \$325,299,097 | \$638,666,518 |
| | State and Local | Federal | Total |
| <i>Fiscal Impact</i> | \$29,779,630 | \$43,902,941 | \$73,682,571 |

In the subsections that follow, we provide detailed analysis for each of the spending components listed in Figure 15.

1. Liberty University Expenditures on Goods and Services:

In assessing the likely economic impact attributable to Liberty University's expenditures on goods and services within Virginia in fiscal year 2011-12, we employ the following assumption:

- Total university expenditures for goods and services within Virginia were \$95.1 million in fiscal year 2011-12.⁶⁶

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual statewide economic impact shown in Table 19:

- Statewide Employment: Second round effects attributable to Liberty University's expenditures on goods and services were responsible for supporting an additional 922 full time equivalent jobs in the state.
- Labor Income: Second round effects attributable to Liberty University's expenditures on goods and services were responsible for generating \$44.6 million in additional labor income within the state.
- Economic Output: In addition to directly generating \$95.1 in economic activity, Liberty University's expenditures on goods and services also generated \$151.4 million in statewide activity through second round effects, for a total statewide output impact of \$246.5 million.
- Fiscal Impact: Liberty University's expenditures on goods and services generated \$7.7 million in additional state and local tax revenue, and \$11.5 million in additional federal tax revenue, for a total fiscal impact of \$19.2 million.

⁶⁶ Data Source: Liberty University.

Table 19: Estimated Economic Impact of Liberty University Expenditures on Goods and Services on Virginia in FY 2011-12

| | Employment | Labor Income | Output |
|---|-----------------|--------------|---------------|
| <i>First Round Direct Economic Activity</i> | | | \$95,101,121 |
| <i>Second Round Indirect and Induced Economic Activity</i> | 922 | \$44,635,118 | \$151,388,648 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 922 | \$44,635,118 | \$246,489,769 |
| | State and Local | Federal | Total |
| <i>Fiscal Impact</i> | \$7,696,187 | \$11,534,428 | \$19,230,615 |

2. Liberty University Expenditures on Salaries and Wages:

We employ the following assumption in assessing the likely economic impact attributable to Liberty University’s expenditures on salaries and wages within Virginia in fiscal year 2011-12:

- Total university expenditures on salaries and wages within Virginia were \$141.1 million in fiscal year 2011-12.⁶⁷

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual statewide economic impact shown in Table 20:

- Statewide Employment: In addition to directly providing 3,884 full time equivalent jobs, Liberty University’s expenditures on salaries and wages also supported 1,128 full time equivalent jobs through second round effects, for a total statewide employment impact of 5,012 full time equivalent jobs.
- Labor Income: In addition to directly providing \$141.1 million in labor income, Liberty University’s expenditures on salaries and wages also created \$48.2 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$189.3 million.

⁶⁷ Data Source: Liberty University. Includes Liberty University employees and SODEXO contract employees.

- Economic Output: Second round effects attributable to Liberty University’s expenditures on salaries and wages were responsible for generating \$141.7 million in additional economic output in the state.
- Fiscal Impact: Liberty University’s expenditures on salaries and wages generated \$9.0 million in additional state and local tax revenue, and \$12.0 million in additional federal tax revenue, for a total fiscal impact of \$21.0 million.

Table 20: Estimated Economic Impact of Liberty University Expenditures on Salaries and Wages on Virginia in FY 2011-12

| | Employment | Labor Income | Output |
|---|-----------------|---------------|---------------|
| <i>First Round Direct Economic Activity</i> | 3,884 | \$141,104,552 | |
| <i>Second Round Indirect and Induced Economic Activity</i> | 1,128 | \$48,222,016 | \$141,663,187 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 5,012 | \$189,326,568 | \$141,663,187 |
| | State and Local | Federal | Total |
| <i>Fiscal Impact</i> | \$8,982,407 | \$12,006,703 | \$20,989,110 |

3. Liberty University Expenditures on Capital Construction:

In assessing the likely economic impact attributable to Liberty University’s expenditures on capital construction and equipment within Virginia in fiscal year 2011-12, we employ the following assumption:

- Total university expenditures on capital construction and equipment within Virginia were \$51.5 million in fiscal year 2011-12.⁶⁸

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual statewide economic impact shown in Table 21:

- Statewide Employment: In addition to directly providing 373 full time equivalent jobs, Liberty University’s expenditures on capital construction and equipment also

⁶⁸ Data Source: Liberty University.

supported 265 full time equivalent jobs through second round effects, for a total statewide employment impact of 638 full time equivalent jobs.

- **Labor Income:** In addition to directly providing \$18.7 million in labor income, Liberty University’s expenditures on capital construction and equipment also created \$13.2 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$31.9 million.
- **Economic Output:** In addition to directly generating \$49.9 in economic activity, Liberty University’s expenditures on capital construction and equipment also generated \$36.1 million in statewide activity through second round effects, for a total statewide output impact of \$86.0 million.
- **Fiscal Impact:** Liberty University’s expenditures on capital construction and equipment generated \$3.0 million in additional state and local tax revenue, and \$6.6 million in additional federal tax revenue, for a total fiscal impact of \$9.6 million.

Table 21: Estimated Economic Impact of Liberty University Expenditures on Capital Construction Projects on Virginia in FY 2011-12

| | Employment | Labor Income | Output |
|---|-----------------|--------------|--------------|
| <i>First Round Direct Economic Activity</i> | 373 | \$18,717,662 | \$49,948,553 |
| <i>Second Round Indirect and Induced Economic Activity</i> | 265 | \$13,196,435 | \$36,088,305 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 638 | \$31,914,096 | \$86,036,857 |
| | State and Local | Federal | Total |
| <i>Fiscal Impact</i> | \$3,004,600 | \$6,634,725 | \$9,639,325 |

4. Associated Enterprise Expenditures on Goods and Services:

In assessing the likely economic impact attributable to expenditures on goods and services within Virginia in fiscal year 2011-12 by enterprises associated with Liberty University,⁶⁹ we employ the following assumption:

- Total associated enterprise expenditures for goods and services within Virginia were \$3.8 million in fiscal year 2011-12.⁷⁰

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual statewide economic impact shown in Table 22:

- Statewide Employment: Second round effects attributable to associated enterprise expenditures on goods and services were responsible for supporting an additional 34 full time equivalent jobs in the state.
- Labor Income: Second round effects attributable to associated enterprise expenditures on goods and services were responsible for generating \$1.6 million in additional labor income within the state.
- Economic Output: In addition to directly generating \$3.8 million in economic activity, associated enterprise expenditures on goods and services also generated \$5.3 million in statewide activity through second round effects, for a total statewide output impact of \$9.1 million.
- Fiscal Impact: Expenditures on goods and services by enterprises associated with Liberty University generated \$0.2 million in additional state and local tax revenue, and \$0.4 million in additional federal tax revenue, for a total fiscal impact of \$0.6 million.

⁶⁹ These enterprises include C and C Jetting, LLC; Freedom Aviation, LLC; Candler's Station, LLC; Plaza Holdings, LLC; Liberty Mountain Capital, LLC; Liberty Mountain Conference Center, LLC; and Racquet Sports, LLC.

⁷⁰ Data Source: Liberty University.

Table 22: Estimated Economic Impact of Associated Enterprise Expenditures on Goods and Services on Virginia in FY 2011-12

| | Employment | Labor Income | Output |
|---|-----------------|--------------|-------------|
| <i>First Round Direct Economic Activity</i> | | | \$3,772,609 |
| <i>Second Round Indirect and Induced Economic Activity</i> | 34 | \$1,641,928 | \$5,363,679 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 34 | \$1,641,928 | \$9,136,288 |
| | State and Local | Federal | Total |
| <i>Fiscal Impact</i> | \$249,719 | \$395,938 | \$645,657 |

5. Associated Enterprise Expenditures on Salaries and Wages:

We employ the following assumption in assessing the likely economic impact attributable to expenditures on salaries and wages within Virginia in fiscal year 2011-12 by enterprises associated with Liberty University:

- Total associated enterprise expenditures on salaries and wages within Virginia were \$2.5 million in fiscal year 2011-12.⁷¹

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual statewide economic impact shown in Table 23:

- Statewide Employment: In addition to directly providing 99 full time equivalent jobs, associated enterprise expenditures on salaries and wages also supported 17 full time equivalent jobs through second round effects, for a total statewide employment impact of 116 full time equivalent jobs.
- Labor Income: In addition to directly providing \$2.5 million in labor income, associated enterprise expenditures on salaries and wages also created \$0.7 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$3.3 million.

⁷¹ Data Source: Liberty University. Includes Liberty University employees and SODEXO contract employees.

- **Economic Output:** Second round effects attributable to associated enterprise expenditures on salaries and wages were responsible for generating \$1.6 million in additional economic output in the state.
- **Fiscal Impact:** Expenditures on salaries and wages by enterprises associated with Liberty University generated \$0.1 million in additional state and local tax revenue, and \$0.2 million in additional federal tax revenue, for a total fiscal impact of \$0.3 million.

Table 23: Estimated Economic Impact of Associated Enterprise Expenditures on Salaries and Wages on Virginia in FY 2011-12

| | Employment | Labor Income | Output |
|---|-----------------|--------------|-------------|
| <i>First Round Direct Economic Activity</i> | 99 | \$2,540,552 | |
| <i>Second Round Indirect and Induced Economic Activity</i> | 17 | \$720,978 | \$2,126,083 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 116 | \$3,261,530 | \$2,126,083 |
| | State and Local | Federal | Total |
| <i>Fiscal Impact</i> | \$137,549 | \$180,468 | \$318,017 |

6. Employee Related Healthcare Expenditures:

In assessing the likely economic impact attributable to healthcare expenditures within Virginia in fiscal year 2011-12 that were funded through employee healthcare insurance provided by Liberty University and its associated enterprises, we employ the following assumption:

- Total employee related healthcare expenditures within Virginia were \$10.9 million in fiscal year 2011-12.⁷²

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual statewide economic impact shown in Table 24:

⁷² Data Source: Liberty University.

- **Statewide Employment:** In addition to directly providing 87 full time equivalent jobs, employee related healthcare expenditures also supported 75 full time equivalent jobs through second round effects, for a total statewide employment impact of 162 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$6.8 million in labor income, employee related healthcare expenditures also created \$3.4 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$10.2 million.
- **Economic Output:** In addition to directly generating \$10.9 in economic activity, employee related healthcare expenditures also generated \$9.5 million in statewide activity through second round effects, for a total statewide output impact of \$20.4 million.
- **Fiscal Impact:** Employee related healthcare expenditures generated \$0.9 million in additional state and local tax revenue, and \$2.0 million in additional federal tax revenue, for a total fiscal impact of \$2.9 million.

Table 24: Estimated Economic Impact of Employee Related Healthcare Expenditures on Virginia in FY 2011-12

| | Employment | Labor Income | Output |
|---|-----------------|--------------|--------------|
| <i>First Round Direct Economic Activity</i> | 87 | \$6,818,723 | \$10,865,050 |
| <i>Second Round Indirect and Induced Economic Activity</i> | 75 | \$3,387,591 | \$9,526,711 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 162 | \$10,206,313 | \$20,391,761 |
| | State and Local | Federal | Total |
| <i>Fiscal Impact</i> | \$888,439 | \$2,036,501 | \$2,924,940 |

7. Liberty University Student Spending:

Our assessment of the economic impact that spending by Liberty University students had on Virginia in fiscal year 2011-12 is predicated on the following assumptions:

- Liberty University students spent an average of \$685.49 per month in Virginia in fiscal year 2011-12.⁷³
- On average, Liberty University students reside in and around the Lynchburg MSA for 9.4 months out of the year.⁷⁴
- There are an estimated 15,555 Liberty University residential, commuter, or online students who reside in and around the Lynchburg MSA for at least a portion of the year.⁷⁵
- In addition to those residential, commuter, and online students who reside in and around the Lynchburg MSA, in fiscal year 2011-12 an additional 10,000 intensive online students physically attended classes for some number of days at Liberty University's campus.⁷⁶
- On average, these intensive online students made 2.8 visits to the campus in fiscal year 2011-12 and stayed 5.2 days each visit.
- Liberty University intensive online students spent an average of \$216.10 per visit in the Lynchburg MSA in fiscal year 2011-12.⁷⁷
- The distribution of Liberty University intensive online student's expenditures on various goods and services in fiscal year 2011-12 is comparable to tourism spending data developed by the Virginia Tourism Corporation for fiscal year 2009.⁷⁸
- Total expenditures by Liberty University students (resident, commuter, online living in and around the Lynchburg MSA, and intensive online students visiting the Lynchburg MSA) are estimated to be \$106.3 million in fiscal year 2011-12.⁷⁹

By feeding these assumptions into the IMPLAN model, we obtain the estimates of annual statewide economic impact shown in Table 25:

- Statewide Employment: In addition to directly providing 67 full time equivalent jobs, spending by Liberty University students also supported 874 full time equivalent jobs through second round effects, for a total statewide employment impact of 941 full time equivalent jobs.

⁷³ *Data Source*: Derived from a survey of Liberty University students conducted in March 2010.

⁷⁴ *Data Source*: Derived from student survey.

⁷⁵ *Data Source*: Derived from student survey. This estimate controls for the small number of Liberty University students who have spouses who are either enrolled or employed by the university, and therefore may also have been included in the survey sample.

⁷⁶ *Data Source*: Liberty University.

⁷⁷ *Data Source*: Derived from student survey.

⁷⁸ *Data Source*: "FY 2007-2009 Profile of Leisure Travel in Virginia," Virginia Tourism Corporation.

⁷⁹ *Data Source*: Derived from student survey.

- **Labor Income:** In addition to directly providing \$1.6 million in labor income, spending by Liberty University students also created \$36.1 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$37.7 million.
- **Economic Output:** In addition to directly generating \$5.3 in economic activity, spending by Liberty University students also generated \$107.6 million in statewide activity through second round effects, for a total statewide output impact of \$112.9 million.
- **Fiscal Impact:** Spending by Liberty University students generated \$7.3 million in additional state and local tax revenue, and \$9.5 million in additional federal tax revenue, for a total fiscal impact of \$16.8 million.

Table 25: Estimated Economic Impact of Liberty University Student Spending on Virginia in FY 2011-12

| | Employment | Labor Income | Output |
|---|-----------------|--------------|---------------|
| <i>First Round Direct Economic Activity</i> | 67 | \$1,662,846 | \$5,343,312 |
| <i>Second Round Indirect and Induced Economic Activity</i> | 874 | \$36,065,043 | \$107,574,779 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 941 | \$37,727,888 | \$112,918,091 |
| | State and Local | Federal | Total |
| <i>Fiscal Impact</i> | \$7,346,719 | \$9,483,370 | \$16,830,089 |

8. Liberty University Visitor Spending:

Our assessment of the economic impact on Virginia attributable to Liberty University student and employee visitors, and out-of-town visitors to university events in fiscal year 2011-12, is predicated on the following assumptions:

- Visitors to Liberty University students spent an average of \$201.27 per visit in and around the Lynchburg MSA in fiscal year 2011-12.⁸⁰

⁸⁰ Data Source: Derived from student survey.

- 78 percent of Liberty University students had out-of-town visitors in fiscal year 2011-12.⁸¹
- On average, each student receiving visitors had 3.2 visits during the year, each visit lasted 2.8 days, and involved 2.4 out-of-town visitors.⁸²
- Visitors to Liberty University employees spent an average of \$217.86 per visit in and around the Lynchburg MSA in fiscal year 2011-12.⁸³
- 87 percent of Liberty University employees had out-of-town visitors in fiscal year 2011-12.⁸⁴
- On average, each employee receiving visitors had 3.7 visits during the year, each visit lasted 3.1 days, and involved 2.7 out-of-town visitors.⁸⁵
- There were 65,675 out-of-town visitors to Liberty University events in fiscal year 2011-12.⁸⁶
- The distribution of Liberty University visitor expenditures on various goods and services in fiscal year 2011-12 is comparable to tourism spending data developed by the Virginia Tourism Corporation for fiscal year 2009.⁸⁷
- Total expenditures by visitors to Liberty University students, employees, and events are estimated to be \$13.0 million in fiscal year 2011-12.⁸⁸

By feeding these assumptions into the IMPLAN model, we obtain the estimates of annual statewide economic impact shown in Table 26:

- Statewide Employment: In addition to directly providing 144 full time equivalent jobs, spending by visitors to Liberty University also supported 64 full time equivalent jobs through second round effects, for a total statewide employment impact of 208 full time equivalent jobs.
- Labor Income: In addition to directly providing \$3.6 million in labor income, spending by visitors to Liberty University also created \$3.0 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$6.6 million.

⁸¹ *Data Source*: Derived from student survey.

⁸² *Data Source*: Derived from student survey.

⁸³ *Data Source*: Derived from a survey of Liberty University employees conducted in March 2010.

⁸⁴ *Data Source*: Derived from employee survey.

⁸⁵ *Data Source*: Derived from employee survey.

⁸⁶ *Data Source*: Liberty University.

⁸⁷ *Data Source*: "FY 2007-2009 Profile of Leisure Travel in Virginia," Virginia Tourism Corporation.

⁸⁸ *Data Source*: Derived from the student and employee surveys, as well as event information provided by Liberty University.

- **Economic Output:** In addition to directly generating \$11.5 million in economic activity, spending by visitors to Liberty University also generated \$8.4 million in statewide activity through second round effects, for a total statewide output impact of \$19.9 million.
- **Fiscal Impact:** Spending by visitors to Liberty University generated \$1.5 million in additional state and local tax revenue, and \$1.6 million in additional federal tax revenue, for a total fiscal impact of \$3.1 million.

Table 26: Estimated Economic Impact of Liberty University Visitor Spending on Virginia in FY 2011-12

| | Employment | Labor Income | Output |
|---|-----------------|--------------|--------------|
| <i>First Round Direct Economic Activity</i> | 144 | \$3,615,726 | \$11,502,825 |
| <i>Second Round Indirect and Induced Economic Activity</i> | 64 | \$2,969,928 | \$8,401,657 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 208 | \$6,585,656 | \$19,904,482 |
| | State and Local | Federal | Total |
| <i>Fiscal Impact</i> | \$1,474,010 | \$1,630,808 | \$3,104,818 |

Human Capital

Value Added Estimation

A significant and unique characteristic of higher education is that it generates externalities, or spillover effects, that exceed the private benefits to individuals. As a result, it is in the interest of the community at large to encourage higher levels of educational attainment. Some of these spillover effects take the form of greater civic responsibility, improved health, and reduced crime. From a purely economic perspective though, the largest spillover effect has to do with increased economic productivity.

As individuals increase their human capital through higher levels of educational attainment, not only do they become more productive, they also increase the productivity of the resources around them. A good example of this would be the difference between what can be accomplished by placing a computer in the hands of a trained user, and what can be accomplished when the computer is placed in the hands of an untrained user – same resource, very different result. Moreover, this difference in results has significant economic implications in the aggregate. Greater productivity translates into increased economic activity and higher incomes.

However, to measure the effect that Liberty University’s educational services have on economic productivity and, therefore, Virginia’s economy, we must first be able to quantify the relationship between educational attainment and productivity. One of the early leaders in this area of economics was Gary Becker, who was awarded a Nobel Prize in 1992 for his work in the economics of human capital development. One of Becker’s key insights was that, because education produces work skills that are valuable to all employers, in a competitive market employers will be forced to compensate workers for the full value of their skills, or otherwise risk losing them to other employers. A critical implication of this insight is that differences in wages provide a reasonable estimate of the economic value attributable to differences in educational attainment and skills training.

Table 27 presents data on median annual wages in Virginia by educational attainment level for those occupations that typically require a certain level of education as a prerequisite for employment. In the first row of this table, we provide estimates of median annual wages across all Virginia occupations.⁸⁹ In the second row of the table, we further refine our analysis to reflect only those occupations that Liberty University graduates are likely to enter. To accomplish that task, we employ a crosswalk developed by the National Crosswalk Service Center (NCSC) that “maps” occupations into the prerequisite education and training program(s) necessary for entry into that occupation.⁹⁰ Using this tool, we are able to identify those occupations that Liberty University graduates are likely to enter, based on their program of study, and restrict the second set of median wage estimates to encompass only those occupations. Table 28 provides additional data on the number of students that Liberty University graduated at each degree level in academic year 2010-11.⁹¹

⁸⁹ *Data Source:* Virginia Employment Commission.

⁹⁰ The National Crosswalk Service Center (NCSC) is funded by the U.S. Department of Labor, Employment and Training Administration. The specific NCSC crosswalk used in this analysis is the *2010 Standard Occupational Classification Crosswalk to 2010 Classification of Instructional Programs*. This crosswalk identifies the prerequisite instructional programs (classified according to the National Center for Educational Statistics’ *2010 Classification of Instructional Program*, or *CIP*, code) necessary for employment in specific occupations (classified according to the Bureau of Labor Statistics’ *2010 Standard Occupational Classification*, or *SOC*, code).

⁹¹ *Data Source:* U.S. Department of Education.

Table 27: Median Annual Wages in Virginia by Degree Level

| | High School | Associate | BA | Masters | PhD |
|--|-------------|-----------|----------|----------|----------|
| Median Annual Virginia Wage: Liberty U. Specific Occupations | N/A | \$66,305 | \$68,662 | \$81,668 | \$68,043 |
| Median Annual Virginia Wage: All Occupations | \$36,311 | \$52,967 | \$66,565 | \$69,837 | \$75,448 |

Table 28: Liberty University 2010-11 Graduates by Degree Level

| | Associate | BA | Masters | PhD |
|---------------------------------------|-----------|-------|---------|-----|
| All Graduates | 472 | 4,569 | 4,157 | 554 |
| Estimated Virginia Resident Graduates | 110 | 1,068 | 836 | 111 |

Based on these data, Table 29 presents our analysis of the economic value that was created in Virginia through the increased labor productivity embodied in Liberty University’s 2010-11 graduates. The first three rows of Table 29, compare likely median wages for Liberty University graduates against the benchmark wage across all Virginia occupations for that degree level, and compute the difference (*i.e.*, comparing median wages for Liberty University Associate and BA degree graduates to the median wage for high school graduates, and comparing median wages for Liberty University Master’s and Doctoral degree graduates to the median wage for BA graduates). Based on Becker’s research, this differential represents the “value added,” in terms of increased labor productivity, associated with each Liberty University degree.

This value added differential is then multiplied by the estimated number of Virginia resident graduates from Liberty University in 2010-11 to determine the “Total Annual Value of Increased Labor Productivity.”⁹² We then further adjusted that figure to account

⁹² Likely Virginia residents are used instead of all graduates because of the greater probability that these graduates will live and work in Virginia after graduation.

for: 1) average labor force participation rates,⁹³ and 2) selectivity bias, or the fact that individuals who pursue education tend to have higher than average innate abilities to start with,⁹⁴ to derive an adjusted final estimate. As shown in the “Adjusted Total Annual Value of Increased Labor Productivity” row of Table 29, across all graduate levels that estimate of the economic value of the human capital that Liberty University produced in 2010-11 is \$34.6 million.

Finally, it is important to realize that these estimates of the value of the increased labor productivity are not one-time benefits. Rather, they are part of a stream of economic activity that continues over the entire time that the students Liberty University graduated in 2010-11 are active in the workforce. Based on analysis of the typical “work-life” of American men and women,⁹⁵ and the average age of Liberty University students, we estimate that time horizon to be approximately 26 years for graduates from Associate and BA programs, and 21 years for graduates from Master’s and Doctoral programs. Using these figures, along with the estimates of “Adjusted Total Annual Value of Increased Labor Productivity” discussed above, we can determine the present value, or value in today’s dollars, of the stream of economic activity generated by the increased labor productivity embodied in Liberty University’s 2010-11 graduates. As shown in the bottom row of Table 29, that present value is estimated to be \$644.1 million.⁹⁶

In the remainder of this section, we once again use the IMPLAN model to quantify the economic and fiscal impact that is attributable to the estimates of increased labor productivity presented in Table 29. It is important to note that these estimates focus exclusively on the additional economic activity that is generated as Liberty University graduates turn the income they earn as a result of their enhanced skills and increased labor productivity into household consumption expenditures. As a result, they reflect the economic impact that comes from the second round ripple effects generated by the “Adjusted Total Annual Value of Increased Labor Productivity” presented in Table 29 and are rightly considered an addition to that increase.

⁹³ *Data Source:* U.S. Census Bureau, 2010 American Community Survey.

⁹⁴ There is a substantial body of literature that indicates that not all of the difference in annual income between different educational attainment levels is attributable to educational attainment alone. The reason for this has to do with what is called selectivity bias – the tendency for those with greater innate abilities to go on to pursue higher levels of educational attainment. In other words, what you come out of the educational process with is partly attributable to what you had when you went into it. Although estimates differ, a frequently cited study by Larry L. Leslie and Paul Brinkman found that only about 79 percent of the difference in income between high school graduates and individuals with an undergraduate education is attributable to education alone. See, Larry L. Leslie and Paul Brinkman, *The Economic Value of Higher Education* (Phoenix: American Council of Education and the Oryx Press), 1993, pp.43-44.

⁹⁵ See James Cieccka, Seth Epstein, and Jerry Goldman, “Work Life Estimates at Millennium’s End: Changes Over the Last Eighteen Years,” *Illinois Labor Market Review*, vol.6, no.2, Summer, 2000.

⁹⁶ The discount rate used for this calculation was 2.34 percent and was the long-term rate reported for 20 year U.S. Treasury bonds as of November 19, 2012.

Table 29: Value of Increased Labor Productivity Associated with Liberty University’s Graduates in 2010-11

| | Associate | BA | Masters | PhD | Total |
|--|---------------------|----------------------|----------------------|--------------------|----------------------|
| Annual Virginia Median Wage – Liberty Specific Occupations | \$66,305 | \$68,662 | \$81,668 | \$68,043 | |
| Benchmark Virginia Median Wage – All Occupations | \$36,311 | \$36,311 | \$66,565 | \$66,565 | |
| Differential | \$29,994 | \$32,351 | \$15,103 | \$1,478 | |
| Estimated Liberty In-State 2010-11 Graduates | 110 | 1,068 | 836 | 111 | |
| Total Annual Value of Increased Labor Productivity | \$3,308,901 | \$34,547,474 | \$12,623,774 | \$164,638 | \$50,644,788 |
| Labor Force Participation | 0.866 | 0.866 | 0.866 | 0.866 | |
| Selectivity Bias | 0.790 | 0.790 | 0.790 | 0.790 | |
| Adjusted Total Annual Value of Increased Labor Productivity | \$2,263,752 | \$23,635,309 | \$8,636,429 | \$112,635 | \$34,648,125 |
| Typical Work-life | 26 years | 26 years | 21 years | 21 years | |
| Discounted Present Value | \$43,722,445 | \$456,495,943 | \$142,005,583 | \$1,852,023 | \$644,075,994 |

Statewide Economic Impact

We employ the following assumption in assessing the likely economic impact attributable to the human capital embodied in Liberty University's 2010-11 Virginia resident graduates:

- The economic value of the human capital that Liberty University produced in 2010-11 was \$34.6 million.

By feeding this assumption into the IMPLAN model, we obtain the estimates of annual statewide economic impact shown in Table 30:

- Statewide Employment: Second round effects attributable to the increased labor productivity embodied in Liberty University's 2010-11 graduates would generate 267 full time equivalent jobs in the Virginia.
- Labor Income: Second round effects attributable to the increased labor productivity embodied in Liberty University's 2010-11 graduates would generate \$11.4 million in additional labor income in the Virginia.
- Economic Output: Second round effects attributable to the increased labor productivity embodied in Liberty University's 2010-11 graduates would generate \$33.8 million in additional economic output in the state.
- Fiscal Impact: Second round effects attributable to the increased labor productivity embodied in Liberty University's 2010-11 graduates would generate \$2.2 million in additional state and local tax revenue, and \$2.9 million in additional federal tax revenue, for a total fiscal impact of \$5.1 million.

Table 30: Estimated Economic Impact of Associated Enterprise Expenditures on Salaries and Wages on Virginia in FY 2011-12

| | Employment | Labor Income | Output |
|---|-----------------|--------------|--------------|
| <i>Second Round Indirect and Induced Economic Activity</i> | 267 | \$11,442,744 | \$33,822,538 |
| <i>Total, Direct, Indirect, and Induced Economic Activity</i> | 267 | \$11,442,744 | \$33,822,538 |
| | State and Local | Federal | Total |
| <i>Fiscal Impact</i> | \$2,183,467 | \$2,867,932 | \$5,051,399 |

Other Contributions

In this section we illuminate the many contributions that Liberty University makes to the Lynchburg MSA that go beyond the narrow confines of economic and fiscal impact. Among these contributions are community service, contributing to economic revitalization, enhancing the quality of life, generating higher levels of tourism, and ensuring that the Lynchburg MSA is developing the qualified workforce that it will need to be economically successful in the future.

Community Involvement

Liberty University, its employees, and students make a number of positive contributions to the Greater Lynchburg community.

Volunteerism

One of the unique characteristics of Liberty University is that its students are obliged to volunteer on campus and within the community as a requirement for graduation. Among the many organizations that benefit from this volunteer service are the American Red Cross, Boy Scouts, Girl Scouts, local churches, local Humane Societies, Salvation Army,

and YMCA. On average, Liberty University students provide approximately 4.3 hours of volunteer service per month or a total of 648,579 hours per year.⁹⁷

In addition, in fall of 2012 Liberty University also launched its Community Care Initiative. To date, 35 projects have been completed in the Lynchburg area as a result of this initiative. Among them are: housekeeping and yard work for the elderly and disabled, painting the Blue Ridge Pregnancy Center, a building blitz for Habitat for Humanity, a mosaic wall for the children's museum, cleaning up local parks, and visiting local nursing homes.

Furthermore, this spirit of volunteerism also extends to Liberty University's faculty and staff. On average, Liberty University faculty and staff provide approximately 2.5 volunteer service hours per month for a total of 106,350 hours per year.⁹⁸ The organizations that benefit from this volunteerism include the American Cancer Society, Boys and Girls Club, local churches, Habitat for Humanity, local Humane Societies, Salvation Army, Special Olympics, and YMCA.

If one were to quantify the value of this volunteer service by Liberty University students and employees at simply the current minimum wage, the total annual contribution to the Lynchburg MSA would be approximately \$5.5 million.

Greater Lynchburg Transit Company

In January of 2007, Liberty University embarked upon an agreement with the Greater Lynchburg Transit Company (GLTC) in which GLTC became the exclusive outside transportation vendor for the university. A key component of the agreement is the Universal Access Program, which allows anyone with a Liberty University ID card to ride any GLTC route at no cost. That arrangement has proved exceedingly successful for both the university and GLTC.

First, it has reduced traffic and parking congestion on Liberty University's campus and on public roads near the campus. As Michael Carroll, General Manager of GLTC, put it in an interview with the Lynchburg News and Advance in November 2007, "if you can put 40 or 50 people on a bus instead of 40 or 50 cars on the street, then that's positive for everyone."⁹⁹

Second, it has provided GLTC with additional resources that have enabled it to upgrade its bus fleet and services. Since initiation of the agreement with Liberty University,

⁹⁷ *Data Source:* Derived from student survey.

⁹⁸ *Data Source:* Derived from employee survey.

⁹⁹ "GLTC looking to expand service to more areas," Lynchburg News and Advance, November 1, 2007.

GLTC ridership has more than doubled, with Liberty University providing more riders than the rest of the city combined.¹⁰⁰ In addition, the agreement provides GLTC with significant revenues – in fiscal year 2011-12, Liberty University paid GLTC \$1.2 million for transportation services.¹⁰¹

Economic Revitalization

In an effort to grow its endowment fund, Liberty University has also made significant property investments in Region 2000 and among these are two shopping centers. After acquiring the Plaza shopping center in 2008, the university invested \$500,000 on improvements to the property.¹⁰² Subsequent to those improvements, the university moved a portion of its aviation program to the site and was also able to acquire new tenants. Among those tenants was Centra Health’s Lynchburg Family Medicine Residency program, which recently moved into to a renovated office in the lower level of the shopping center. As a result of this revitalization, the Plaza is now successfully generating a revenue stream for the university as well as positively contributing to the city of Lynchburg’s tax base. Similarly, in January of 2010 Liberty University acquired Candler’s Station shopping center, also located in the city of Lynchburg. It is anticipated that Candler’s Station will provide the university with an 11 to 14 percent annual return on its investment, while also providing a continuing stream of tax revenue for the city.¹⁰³

Recreational Facilities

Liberty University has also contributed to Region 2000’s quality of life by significantly enhancing its recreational opportunities. The university’s LaHaye Ice Center and the Liberty Mountain Snowflex Center are both open to the public. The LaHaye Ice Center attracts more than 100,000 people per year through various college sports events, youth hockey leagues, figure skating programs, public sessions, private events, and Winterfest (a nationally acclaimed youth event held at Liberty University each year). The LaHaye Ice Center has made the kind of positive contribution to the community that is difficult to quantify, but easy to qualify. In describing the positive impact the facility has had on area youth, Darrell Laurant, a columnist for the Lynchburg News and Advance, wrote that,

The LaHaye Ice Center is ground zero for hockey in Central Virginia ... The Lynchburg Hockey Association began in 2008, the spinoff from a “Learn to Play” hockey camp that attracted 20 hopefuls. It would never

¹⁰⁰ “With LU route, GLTC sees number of passengers double,” Lynchburg News and Advance, February 11, 2007.

¹⁰¹ *Data Source:* Liberty University.

¹⁰² “At Liberty, the future is in land,” Valley Business Front, April 2010.

¹⁰³ “At Liberty, the future is in land,” Valley Business Front, April 2010.

have existed, of course, had not Liberty constructed its rink and opened it to the public.¹⁰⁴

The Liberty Mountain Snowflex Center opened in August of 2009 and is North America's only Snowflex synthetic ski slope. The facility has already received national attention and is expected to be significant point of destination for winter sports enthusiasts. As described on Virginia's official tourism website,

Winter sport enthusiasts now have something to cheer about every season... a year-round ski slope in Lynchburg, Virginia. Liberty University's Snowflex Centre, located on Liberty Mountain, is a synthetic ski slope featuring the most innovative technology in the snow sports industry, and it's the only one in the United States. ... Mountain ski resorts are only accessible during winter, but Liberty Mountain Snowflex Centre will be accessible during all four seasons, day and night.¹⁰⁵

In addition, this year the university installed a separate 525 foot long tubing slope at the Snowflex Center to accommodate the growing popularity of this alternative winter sport.

Tourism

As demonstrated in the earlier assessment of economic and fiscal impact, the university also contributes significantly to regional tourism. Through out-of-town visitors to Liberty University's employees and students, facilities such as the LaHaye Ice Center and Liberty Mountain Snowflex Center, and events such as commencement, fall family weekend, spring family weekend, and Winterfest the university plays a large role in attracting tourists to the Lynchburg MSA.

Based on information obtained from our surveys of Liberty University employees and students,¹⁰⁶ along with data provided by Liberty University on out-of-town attendees to university events,¹⁰⁷ we estimate that in fiscal year 2011-12, Liberty University:

- employees had approximately 24,258 out-of-town visitors,
- resident and commuter students had approximately 75,800 out-of-town visitors,
- intensive online students visited Liberty University's Lynchburg campus approximately 27,636 times, and

¹⁰⁴ "Hockey hopefuls heat up Hill City Ice," Lynchburg News and Advance, March 17, 2010.

¹⁰⁵ See <http://www.virginia.org/site/description.asp?AttrID=60682>

¹⁰⁶ The employee and student surveys were administered in an online format in March 2010.

¹⁰⁷ Data Source: Liberty University.

- facilities and events attracted at least 65,675 out-of-town visitors.¹⁰⁸

Perhaps the most tangible way to gauge the effect that these visitors had on the regional tourism industry is to focus on the hotel stays that were generated. Using the data above in combination with other information from the surveys on the proportion of out-of-town visitors that stayed in hotels, we estimate that in fiscal year 2011-12 out-of-town visitors to Liberty University employees, students, facilities, and events generated approximately 82,553 hotel room nights in the Lynchburg MSA. Those hotel room nights in turn were associated with approximately \$6.5 million in hotel revenue within the Lynchburg MSA.

Occupation-Driven Demand for Graduates

In this section, we quantify the contribution that Liberty University makes to ensuring that the Lynchburg MSA is developing the qualified workforce that it will need to be economically successful in the future by looking at the degree to which the institution is meeting the region's occupation-driven demand for graduates. The method used to accomplish this analysis is not new and has been successfully employed in earlier studies conducted in several states.¹⁰⁹

Demand for Graduates

To project the occupation-driven demand for graduates we start with projections of occupational employment. According to the most recent occupational employment projection for the Lynchburg MSA, between 2010 and 2020 the region will experience approximately 4,093 job openings each year.¹¹⁰ Breaking this number down according to major occupational group shows that, as is typical for most regions, the largest numbers of annual openings are projected to occur in *Sales* (525 per year) and *Office and Administrative Support* occupations (495 per year). Recall from Figure 12, however, that from an industry perspective some of the largest employment gains in the Lynchburg MSA in recent years have occurred in Healthcare, and Professional and Technical Services sectors. Focusing on those areas specifically, we find that between 2010 and 2020 the Lynchburg MSA is projected to experience 266 openings in *Healthcare Practitioners* occupations each year, along with 141 openings in *Business and Financial*

¹⁰⁸ *Data Source:* Liberty University.

¹⁰⁹ Similar methods are used in at least seven states (California, Georgia, Idaho, Illinois, New Jersey, Utah, and Virginia) to project anticipated education and training demands. For an excellent exposition of this method see, William J. Drummond and Jan L Youtie, "Occupational Employment, Demand for College Graduates, and Migration: A Statewide View," a report to the Board of Regents, University System of Georgia, 1999. For an example of how this method has been used previously in Virginia see, A. Fletcher Mangum, "System-Wide Needs Assessment for Virginia Education," State Council of Higher Education for Virginia, March 28, 2002, p.90.

¹¹⁰ *Data Source:* Virginia Employment Commission. The Lynchburg MSA is comprised of the counties of Amherst, Appomattox, Bedford, and Campbell, and the cities of Bedford and Lynchburg.

occupations, 92 openings in *Architecture and Engineering*, and 58 openings in *Computer and Math*. The numbers for these major occupational groups and all others are graphically displayed in Figure 17.

In the next step of the analysis, we use the National Crosswalk Service Center (NCSC) crosswalk described earlier to “map” occupations into the prerequisite education and training program(s) necessary for entry into that occupation.¹¹¹ Through this process, we are able to use the occupational projection for the Lynchburg MSA to estimate the occupation-driven demand for graduates within the Lynchburg MSA.¹¹²

Supply of Graduates

To estimate the likely supply of graduates within those education and training programs identified in the demand analysis, we use data from the U.S. Department of Education’s *Integrated Postsecondary Education Data System (IPEDS)* on completions from Liberty University in academic year 2010-11 by detailed program area. For purposes of this analysis, however, we restrict that dataset to only that proportion of graduates we estimate to be Virginia residents based on the proportion of in-state students Liberty enrolled in 2010-11.

¹¹¹ The National Crosswalk Service Center (NCSC) is funded by the U.S. Department of Labor, Employment and Training Administration. The specific NCSC crosswalk used in this analysis is the *2010 Standard Occupational Classification Crosswalk to 2010 Classification of Instructional Programs*. This crosswalk identifies the prerequisite instructional programs necessary for employment in 623 specific occupations. Often, these are many-to-many relationships where a given instructional program can serve as an avenue into one of many jobs, or one of several instructional programs can serve as a prerequisite for a given job.

¹¹² More formally, the demand for education and training programs is calculated as:

$$DCIP_i = \sum Dcip_{ji}$$

Where,

$$Dcip_{ji} = (SOC_j)(GCIP_i / \sum Gcip_{ij})$$

and,

- DCIP_i = the annual demand for instructional program *i*
- $\sum Dcip_{ji}$ = the annual demand for instructional program *i* across all occupation(s) *j*
- SOC_j = the projected annual openings for occupation *j*
- GCIP_i = Virginia graduates from instructional program *i*
- $\sum Gcip_{ij}$ = Virginia graduates from all instructional program(s) *i* related to occupation *j*

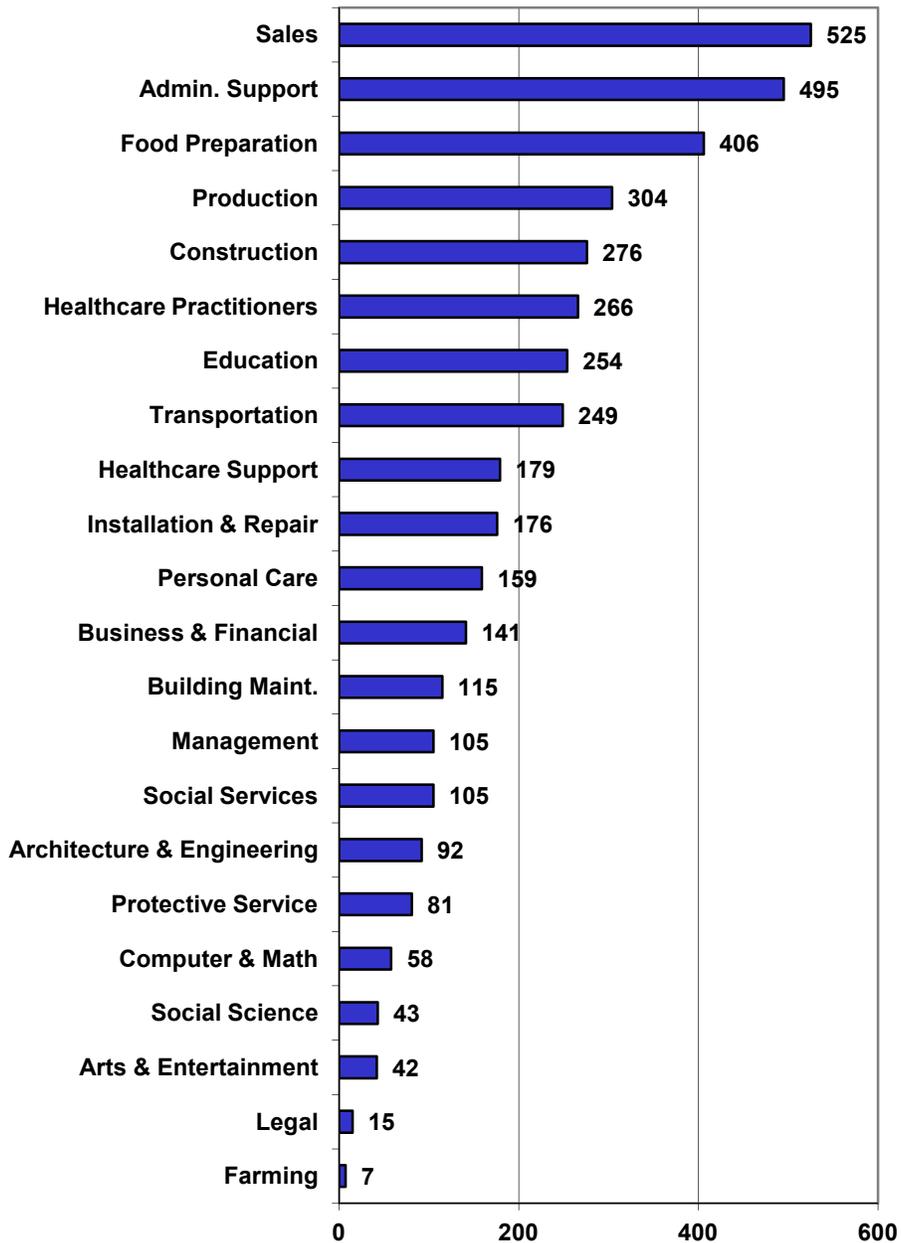


Figure 16: Projected Average Annual Openings in the Lynchburg MSA by Major Occupation Category – 2010 to 2020¹¹³

¹¹³ *Data Source:* Virginia Employment Commission. The Lynchburg MSA is comprised of the counties of Amherst, Appomattox, Bedford, and Campbell, and the cities of Bedford and Lynchburg.

Table 31: Percentage of Occupation-Driven Demand for Graduates met by Liberty University in the Lynchburg MSA

| Academic Program | Annual Supply of Graduates in 2010-11 | Annual Occupation-Driven Demand for Graduates 2010-2020 | % of Demand Met |
|---|---------------------------------------|---|-----------------|
| Teaching English as a Second or Foreign Language/ESL Language Instructor. | 2 | 86 | 3% |
| Business Administration and Management, General. | 140 | 73 | 100% |
| Business/Commerce, General. | 134 | 73 | 100% |
| Elementary Education and Teaching. | 25 | 38 | 65% |
| History, General. | 8 | 33 | 23% |
| Social Sciences, General. | 6 | 33 | 17% |
| Secondary Education and Teaching. | 16 | 27 | 61% |
| English Language and Literature, General. | 12 | 27 | 43% |
| Biology/Biological Sciences, General. | 11 | 27 | 41% |
| Music, General. | 6 | 27 | 20% |
| Family and Consumer Sciences/Human Sciences, General. | 4 | 27 | 14% |
| Mathematics, General. | 3 | 27 | 11% |
| Spanish Language and Literature. | 3 | 27 | 10% |
| Electrical and Electronics Engineering | 1 | 21 | 4% |
| Accounting. | 70 | 19 | 100% |
| Sport and Fitness Administration/Management. | 12 | 17 | 69% |
| Computer and Information Sciences, General. | 2 | 17 | 12% |
| Information Technology. | 3 | 15 | 18% |
| Speech Communication and Rhetoric. | 29 | 10 | 100% |
| General Studies. | 42 | 9 | 100% |
| Law. | 20 | 9 | 100% |
| Liberal Arts and Sciences/Liberal Studies. | 16 | 9 | 100% |
| Educational Leadership and Administration, General. | 27 | 8 | 100% |
| Counselor Education/School Counseling and Guidance Services. | 25 | 7 | 100% |

Percentage of Regional Occupation-Driven Demand for Graduates Met

Table 31 details the results obtained from a comparison of the occupation-driven demand for graduates in the Lynchburg MSA and the supply of qualified graduates produced by Liberty University.

As these data demonstrate, among other categories, Liberty University is meeting:

- 100 percent of the regional demand for *Business Administration and Management, General* graduates,
- 100 percent of the regional demand for *Business/Commerce, General* graduates,
- 100 percent of the regional demand for *Accounting* graduates,
- 100 percent of the regional demand for *Speech Communication and Rhetoric* graduates,
- 100 percent of the regional demand for *General Studies* graduates,
- 100 percent of the regional demand for *Law* graduates,
- 100 percent of the regional demand for *Liberal Arts and Sciences/Liberal Studies* graduates,
- 100 percent of the regional demand for *Counselor Education/School Counseling and Guidance Services* graduates,
- 100 percent of the regional demand for *Psychology, General* graduates,
- 100 percent of the regional demand for *Counseling Psychology* graduates, and
- 100 percent of the regional demand for *Special Education and Teaching, General* graduates.
- 100 percent of the regional demand for *Counselor Education/School Counseling and Guidance Services* graduates,
- 100 percent of the regional demand for *Political Science and Government, General* graduates,
- 100 percent of the regional demand for *Public Health Education and Promotion* graduates, and
- 100 percent of the regional demand for *Management Information Systems, General* graduates.
- 100 percent of the regional demand for *Graphic Design* graduates.

Conclusion

This report assesses the economic contribution that Liberty University made to the Lynchburg MSA and the state of Virginia in fiscal year 2011-12. What that analysis has shown is that Liberty University is one of Virginia's most successful and fastest growing postsecondary education institutions. In academic year 2011-12, Liberty University had an unduplicated annual headcount of 95,753 students, making it the largest private or public college or university in the state of Virginia. Between 1992 and 2011, the university's fall enrollment increased from 8,500 to 65,955, an increase of 57,455 students or 676 percent. In contrast, over that same period Virginia's other four-year private non-profit colleges and universities grew by 37 percent, and Virginia's four-year public colleges and universities grew by 31 percent.

Moreover, Liberty University is not only the Lynchburg MSA's second largest employer, it is also one of its fastest growing employers. Between, 2001 and 2011, university employment increased by 3,327 jobs or 386 percent. This rapid employment growth has also played an important role in expanding the region's portfolio of high-growth, non-*Manufacturing* sectors, thereby providing a stabilizing influence on the Lynchburg MSA's employment picture. At the height of the 2007 recession, between fiscal year 2008 and fiscal year 2009, while the city of Lynchburg as a whole experienced a 4 percent decline in total employment, employment at Liberty University actually increased by 642 jobs or 25 percent.

In addition, Liberty University continues to invest in additional facilities and expand its program offerings. This year, Liberty broke ground on its new \$40 million Center for Health and Medical Sciences. This new 138,000 square foot four story facility will house a proposed College of Osteopathic Medicine and enable the university to expand its School of Health Sciences. Liberty also recently announced plans for the construction of a new 40,000 to 50,000 foot facility at Lynchburg Regional Airport that would include a new hanger and provide additional space for the university's flight school and aircraft mechanic training program. Finally, Liberty has also recently renovated its 19,200 seat football stadium to include luxury suites, entertainment rooms, and a state of the art press box built to accommodate nationally televised broadcasts, begun construction of a new 2,500 seat baseball stadium, initiated a \$2 million renovation of its outdoor track, started construction of a new Basketball Practice Facility, and is building a new Intramural Complex.

This remarkable growth has also had a demonstrable effect on the city of Lynchburg's own growth trajectory. According to data from the 2010 census, between 2000 and 2010 the population of Lynchburg grew by 15.8 percent. By comparison, the population of Virginia as a whole grew by only 13.0 percent over the decade, and population growth in all but six of Virginia's 39 independent cities was lower than that of Lynchburg (*e.g.*,

Charlottesville grew by 8.4 percent between 2000 and 2010, Norfolk by 3.6 percent, Richmond by 3.2 percent, Roanoke by 2.2 percent, and Virginia Beach by 3.0 percent).

Our analysis has also shown that Liberty University makes a major economic contribution to its community. In fiscal year 2011-12, direct spending in the Lynchburg MSA by the university, its associated enterprises, tenants, students, and visitors totaled \$342 million dollars. After accounting for expenditures on domestic and foreign imports, payroll deductions, savings, and other leakages from the regional economy, that \$342 million generated \$139 million in net regional spending. The economic ripple effects from those dollars ultimately generated \$443 million in overall economic activity within the Lynchburg MSA, which means that every \$1.00 of Liberty University's net local spending generated \$3.19 within the broader regional economy.

In addition, Liberty University's fiscal year 2011-12 net regional spending was also responsible for supporting a total of 6,896 jobs within the Lynchburg MSA and \$242 million in labor income. Given that most of those jobs were within the city of Lynchburg, and the city's total employment in 2011 is estimated to have been 50,552, this means that approximately one out of every seven jobs within the city of Lynchburg that year were either directly or indirectly attributable to Liberty University.

With regard to the fiscal contribution that Liberty University makes to its community, local taxes paid by the university itself, associated enterprises, tenants, employees, students, and visitors contributed over \$9 million in tax revenue to the Lynchburg MSA in fiscal year 2011-12. Focusing exclusively on the city of Lynchburg, where Liberty University's campus is physically located, the university generated approximately \$6 million in tax revenue for the city. More specifically, it accounted for approximately: 3 percent of the city's total *Real Property Tax* revenue, 8 percent of its *Personal Property Tax* revenue, 10 percent of its *Restaurant Food Tax* revenue, 19 percent of its *Hotel and Motel Room Tax* revenue, and 3 percent of its local *Sales Tax* revenue.

From the perspective of Virginia as a whole, in fiscal year 2011-12 Liberty University was responsible for contributing \$424 million dollars in direct spending to the state. Again accounting for leakages due to domestic and foreign imports, payroll deductions, and savings, that \$424 million generated \$177 million in net spending that stayed in the statewide economy. The economic ripple effects from those dollars then created a total of \$639 million in overall economic activity within Virginia, which means that every \$1.00 of Liberty University's net state spending ultimately generated \$3.61 in overall economic activity within the state. Those expenditures were responsible for supporting a total of 8,033 jobs in the state, creating \$325 million in labor income, and generating \$74 million in federal, state, and local tax revenue.

Our analysis has also shown that Liberty University makes a major contribution to growing Virginia's human capital. For Liberty University, as with any education institution, its primary economic contribution is the product it is in the business of creating – well educated and highly trained graduates. We estimate that the economic value of the enhanced labor productivity, or increased human capital, that Liberty University's 2010-11 graduates carried with them into the workforce was \$35 million. Moreover, the discounted present value of the stream of economic benefits that enhanced productivity will generate over the entire time that those graduates are likely to be active in the workforce is \$644 million.

In addition, Liberty University makes many other contributions to the Lynchburg MSA and to Virginia as a whole that go beyond simple economic impact. For example, Liberty students and employees provide approximately \$5.5 million worth of volunteer service hours within the Lynchburg MSA each year. In another example, in January of 2007 Liberty University embarked upon an agreement with the Greater Lynchburg Transit Company (GLTC) in which GLTC became the exclusive outside transportation vendor for the university. That arrangement has proved successful at reducing traffic and parking congestion in Lynchburg and has also provided GLTC with additional revenues – \$1.2 million in fiscal year 2011-12 – that enabled to upgrade its bus fleet and services.

Liberty University has also made significant property investments in the Lynchburg MSA that have aided in economic revitalization. After acquiring the Plaza shopping center in 2008, the university invested \$500,000 in improvements to the property. The Plaza is now home to Centra Health's Lynchburg Family Residency program and several other new tenants, and is positively contributing to the city of Lynchburg's tax base. Liberty University has also contributed to the region's recreational attractions, with investments in facilities such as the LaHaye Ice Center, which attracts more than 100,000 people per year to the region, and the Liberty Mountain Snowflex Center, North America's only Snowflex synthetic ski slope.

Moreover, through those recreational attractions, nationally recognized collegiate sporting events, and visitors to Liberty University students, employees, and events, the university also plays a major role in attracting tourists to the Lynchburg MSA. For example, in fiscal year 2011-12, Liberty University's out-of-town visitors generated approximately 82,553 hotel room nights in the Lynchburg MSA and those hotel room nights in turn were associated with approximately \$6.5 million in local hotel revenue.

Finally, Liberty University also makes a significant contribution to ensuring the Lynchburg MSA will have the trained graduates it needs to prosper in the future in key growth areas such as healthcare and education by meeting some or all of the region's demand for *Business Administration and Management, General; Business/Commerce, General; Accounting; Speech Communication and Rhetoric; Law; Counselor*

Education/School Counseling and Guidance Services; Counseling Psychology; Special Education and Teaching, General graduates.

In sum, Liberty University is a rapidly growing institution, that has a significant economic and fiscal impact on the Lynchburg MSA and the state of Virginia as a whole, and plays a very active and positive leadership role within its community and the state.