

THE ECONOMIC CONTRIBUTION THAT
**LIBERTY UNIVERSITY MADE TO THE LYNCHBURG MSA AND THE
STATE OF VIRGINIA IN ACADEMIC YEAR 2016-2017**



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Report prepared by



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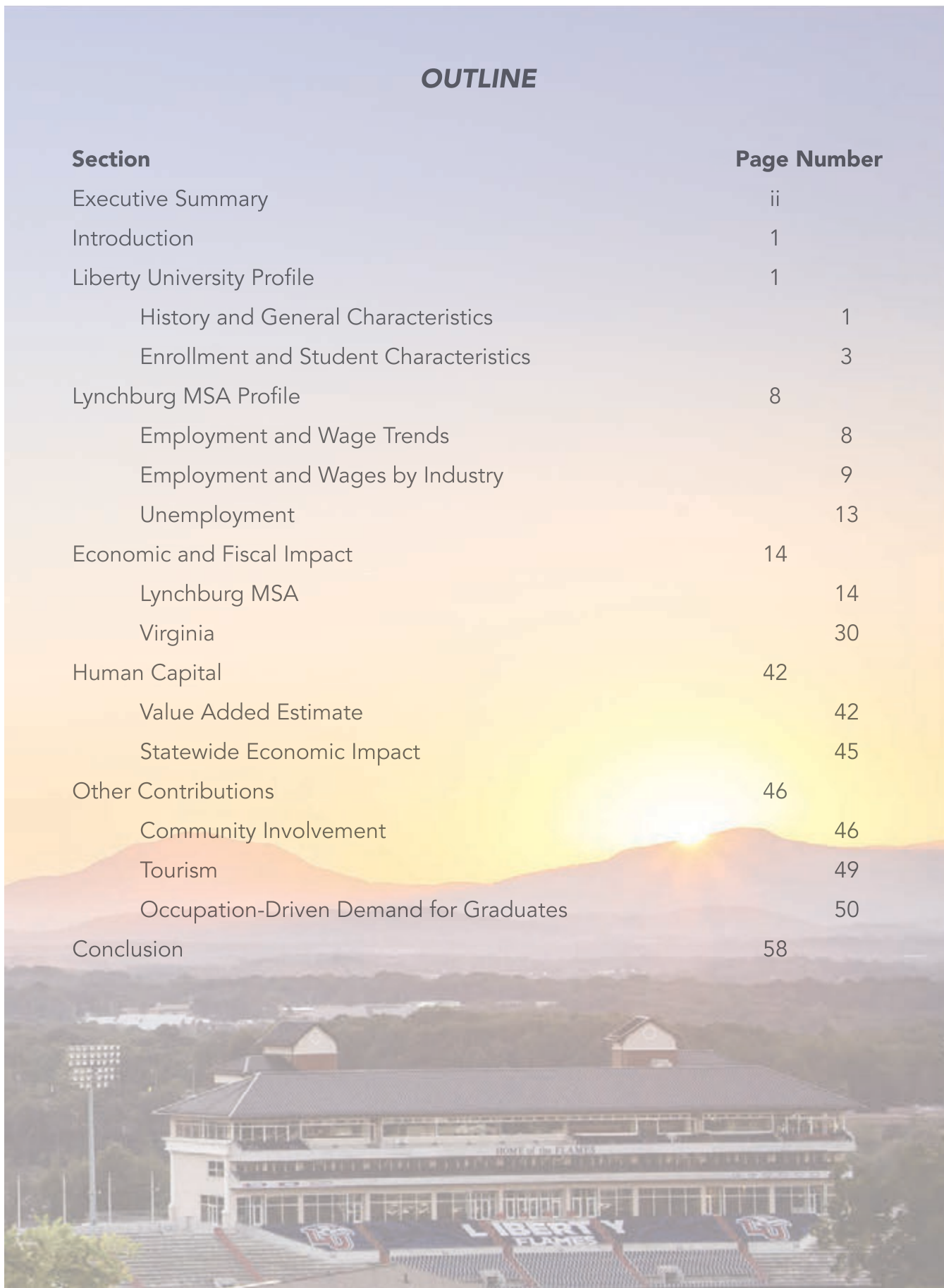
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EXECUTIVE SUMMARY

This report assesses the economic contribution that Liberty University made to the Lynchburg MSA and the state of Virginia in academic year 2016-17. 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 2016-17, Liberty had an unduplicated annual headcount of 101,951 students, making it the largest institution of higher education in Virginia and one of the largest in the country.
- Between 1992 and 2017, the university's fall enrollment increased from 8,500 to 75,044, an increase of 68,544 students or 783 percent. In contrast, over that same period Virginia's other four-year private non-profit colleges and universities grew by 42 percent, and Virginia's four-year public colleges and universities grew by 34 percent.
- In 2016-2017, Liberty University and its auxiliary enterprises were also Lynchburg's largest employer, providing jobs for 6,797 individuals in the Lynchburg MSA and over 9,210 worldwide.
- The university is currently engaged in an almost \$1 billion dollar expansion and renovation of its facilities. That building program has included construction of a new Center for Medical and Health Sciences building, the state of the art Jerry Falwell Library, the LaHaye Student Union, Residential Commons I, Science Hall, Kamphuis Field softball stadium, the Center for Music and Worship Arts, Demoss Campus Center, Residential Commons II, Indoor Track Complex, Natatorium, Liberty Athletics Center, Indoor Football Practice Facility, an expanded Equestrian Center, and the Freedom Tower.

2) Liberty University makes a major economic and fiscal contribution to the Lynchburg MSA:

- In 2016-17, direct spending in the Lynchburg MSA by the university, its associated enterprises, students, and visitors totaled \$618.3 million. Our analysis shows that regional spending was responsible for generating over \$1.0 billion in economic activity in the Lynchburg MSA, which means that every \$1.00 of Liberty University's net local spending generated \$1.67 within the broader regional economy.
- Liberty University's 2016-17 regional spending was also responsible for supporting a total of 11,919 jobs within the Lynchburg MSA and generating \$434.3 million in labor income. Given that the location of most of this employment was in the City of Lynchburg, and that total employment in the City of Lynchburg was 51,174 in 2017, this means that approximately one out of every four jobs in the City of Lynchburg that year was either directly or indirectly attributable to Liberty University.
- Local taxes paid by the university itself, associated enterprises, employees, students, and visitors contributed approximately \$15.2 million in tax revenue to the Lynchburg MSA in 2016-17. Focusing exclusively on the city of Lynchburg, where the majority of Liberty University's campus is physically located, the university directly or indirectly generated approximately \$10.0 million in tax revenue for the city, or 7 percent of the city's total Real Property Tax revenue, 12 percent of its Personal Property Tax revenue, 6 percent of its Motor Vehicle License Fee revenue, 10 percent of its Restaurant Food Tax revenue, 31 percent of its Hotel and Motel Room Tax revenue, and 4 percent of its local Sales Tax revenue.

3) Liberty University makes a major economic and fiscal contribution to the state of Virginia as a whole:

- In 2016-17 Liberty University, along with its associated enterprises, students, and visitors were responsible or contributing \$712.0 million dollars in direct spending to the state. Our analysis indicates that this \$712.0 million in statewide spending was responsible for generating over \$1.3 billion in economic activity, which means that every \$1.00 of Liberty University's state spending ultimately generated \$1.88 in overall economic activity within the state.
- Liberty University's 2016-17 statewide spending was also responsible for supporting a total of 13,019 jobs in the state, creating \$546.3 million in labor income, and generating \$105.9 million in federal, state, and local tax revenue.

4) 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 2016-17 graduates carried with them into Virginia's workforce was approximately \$50.5 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 approximately \$786.4 million.

5) Liberty University also makes many other contributions to the Lynchburg MSA and the state of Virginia:

- Its students and employees provide more than \$2.9 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 \$3.0 million in additional revenue in 2016-17.
- It has made significant regional investments in economic revitalization. In 2008, the university acquired the Plaza shopping center and invested \$500,000 to upgrade and improve the property. In 2010, it acquired Candler's Station shopping center and made similar improvements to that property. Then in 2017 it acquired the River Ridge Mall. The River Ridge Mall is the Lynchburg MSA's only mall and had deteriorated to the point that it was on the verge of closing. Liberty brought in a nationally recognized team of shopping center professionals and architects to redesign and repurpose the property and it is now anticipated that the River Ridge Mall will once again be a successful regional enterprise and a source of increased local tax revenue.
- It has enhanced the quality of life within the Lynchburg MSA by adding to the region's recreational opportunities through investments in facilities such as the LaHaye Ice Center, which attracts more than 100,000 people per year to the region; the Liberty Mountain Snowflex Center, North America's only Snowflex synthetic ski slope; the Tower Theater, and the Liberty Mountain Skate Park, all of which are open to the public.
- It plays a large role in attracting tourists to the Lynchburg MSA. In fiscal year 2016-17, Liberty University's out-of-town visitors generated approximately 156,496 hotel room nights in the Lynchburg MSA and those hotel room nights in turn were associated with approximately \$15.0 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 graduates in Psychology; Counseling; Registered Nursing; Elementary Education; Special Education and Teaching; Educational Leadership and Administration; Sports and Fitness Administration; Public Health; School Counseling and Guidance Service; and many other disciplines.

6) 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.



INTRODUCTION

This report assesses the economic contribution that Liberty University made to the Lynchburg MSA¹ and the state of Virginia in fiscal year (FY) 2016-17.² The remainder of the report is divided into six 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 that is home to Liberty University. 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 Human Capital section provides an estimate of the market value of the added human capital that Liberty University graduates carry with them into the workforce. 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.

LIBERTY UNIVERSITY PROFILE

History and General Characteristics

Liberty University was founded in 1971 as a private, non-profit, Evangelical Christian institution of higher education. Liberty is situated on over 7,000 acres in the City of Lynchburg and in the counties of Amherst, Bedford, Campbell, and Prince Edward. Approximately 700 acres are developed and used for campus operations, while 6,300 acres have been preserved in their natural state and are used for various recreational purposes. The campus includes 380 buildings with over 6.6 million square feet of building space, and Liberty currently maintains over 200 classrooms.

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

²July 1 of 2013 through June 31 of 2014.

Since its first class of 154 students, Liberty has experienced explosive enrollment growth. In academic year 2016-17, Liberty had an unduplicated annual headcount of 101,951 students, making it the third largest private four-year non-profit institution of higher education in the country, and the fifth largest four-year institution of higher education overall.³ In FY 2016-17, Liberty and its Auxiliary Enterprises were also Lynchburg's largest employer, providing jobs for 6,797 individuals in the Lynchburg MSA and over 9,210 worldwide.⁴ Moreover, Liberty's rapid employment growth has provided much needed stability to a regional economy that, as will be shown in a subsequent section, has experienced uneven employment growth in recent years. To cite one example of this stabilizing influence, had it not been for Liberty University, we estimate that the Lynchburg MSA's unemployment rate would have been approximately 9.9 percent in 2017, instead of 4.3 percent.

Liberty University is also undergoing a nearly \$1 billion dollar expansion and renovation. Since 2013, Liberty has completed the following partial list of new construction, renovations, and acquisitions:

- Center for Medical and Health Sciences building, a 140,000 square foot building, opened in 2014 and is home to the university's School of Health Sciences and new College of Osteopathic Medicine.
- Jerry Falwell Library, a 170,000 square foot, state of the art facility that ranks as the university's largest building investment.
- LaHaye Student Union, a 230,000 square foot facility that houses seven basketball courts, four volleyball courts, a pool, two astro-turfed soccer fields, and a 40 foot tall climbing tower.
- Residential Commons I, a new nine story residence hall that houses 1,200 students.
- A new 121,000 square foot Science Hall, which tripled the capacity of the university's science facilities.
- Liberty Baseball Stadium, a new 2,500 seat baseball stadium that opened in 2013.
- Kamphuis Field, a new 1,000 seat softball stadium.
- Center for Music and Worship Arts, a new four-story, 140,000 square foot facility that boasts 40 studios and a 1,600 seat concert hall.
- Demoss Campus Center, a 175,000 square foot expanded and renovated student center.
- Residential Commons II, a new residence hall similar to Residence Hall I.
- Indoor Track Complex, a 169,000 square foot facility situated on Liberty Mountain that includes a six-lane, 200-meter, hydraulically banked oval.
- Natatorium, a 75,000 square foot, state of the art aquatics center connected to the Indoor track Complex.
- Freedom Tower, a 275 foot structure that is the tallest building in Lynchburg and houses academic and event areas.
- Liberty Athletics Center, a 60,000 square foot athletic training and rehabilitation center.
- Indoor Football Practice Facility, a 95,000 square foot structure that houses a full-sized astro-turfed indoor football practice field.
- Center for Advanced Engineering and Research in Bedford County, which will serve as a catalyst in growing the university's research capacity and provide a vehicle for fostering linkages and new opportunities with the private sector.
- River Ridge Mall
- Expanded Equestrian Center, a 380 acre facility located on Liberty Mountain that features outdoor and indoor riding rings, a new barn, and locker room facilities.

Liberty University is accredited by the Southern Association of Colleges and Schools Commissions on Colleges (SACSCOC). Liberty's 17 schools and colleges currently offer more than 600 unique programs of study from the certificate to the doctoral level. Liberty was a pioneer in distance education and started offering distance education courses in 1985. The University currently serves 86,300 students through these programs world-wide, including over 30,000 men and women serving in the U.S. military.

Liberty University also boasts a mature NCAA Division 1 athletic program with 20 teams, as well as 41 intercollegiate Club Sports teams, and 20 intramural sports. Campus facilities used to support these programs are also frequently used by the community. These facilities include the recently renovated 19,200 seat Williams Stadium (football), 8,085 seat Vines Center (basketball), 2,700 seat LaHaye Ice Center, 2,500 seat Liberty Baseball Stadium, 1,000 seat Kamphuis Field at Liberty Softball Stadium, 1,200 seat lacrosse facility, 1,000 seat soccer stadium, year-round skiing and snowboarding at the Liberty Mountain Snowflex Centre, and the LaHaye Student Union.

Liberty’s athletic facilities also host the Virginia High School League’s Spring Jubilee, which serves as the state championship event for baseball, softball, soccer, tennis, and several state football and track championships. As well as the Commonwealth Games, an annual Olympic style event that attracted 11,000 amateur athletes to Lynchburg in 2017 to compete in 28 individual events.

Enrollment and Student Characteristics

Enrollment

Figure 1 provides a breakdown of Liberty’s fall 2017 enrollment by program level. As these data show, 45,754 or 61 percent of Liberty’s student body was comprised of undergraduates that fall, while 26,133 or 35 percent was comprised of graduate students, and 3,157 or 4 percent was comprised of first professional students (primarily law school students). These data indicate that Liberty’s program mix tends to be more heavily tilted toward graduate and first professional programs than is typical among Virginia’s other four-year institutions of higher education. For example, where 39 percent of Liberty’s student body was comprised of graduate or first professional students in fall 2017, the comparable average among other non-profit four-year colleges and universities in Virginia was 31 percent that fall, and among the state’s public colleges and universities 20 percent.

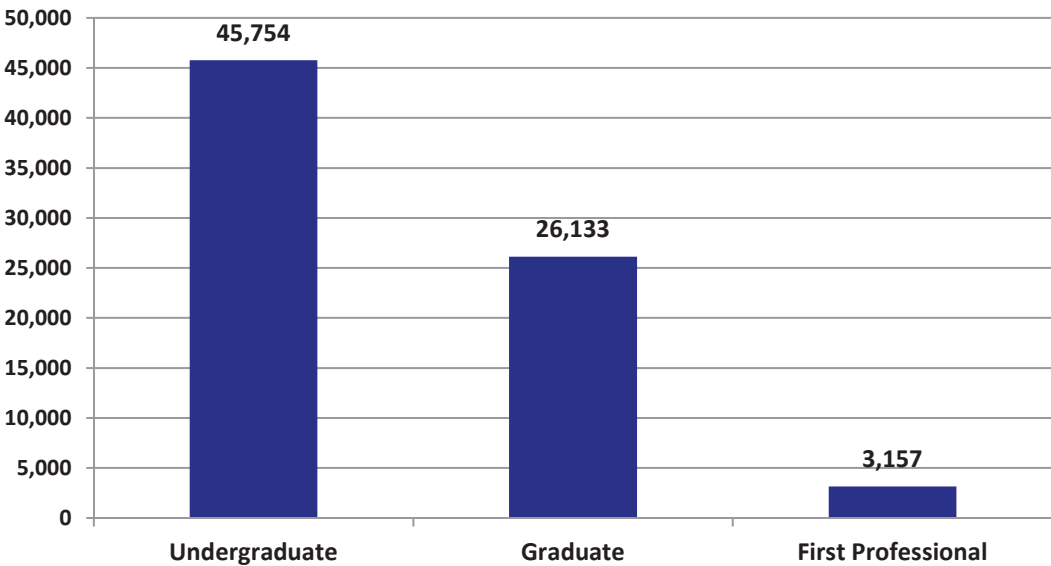


Figure 1: Liberty University Fall 2017 Headcount Enrollment⁵

⁵ Data Source: State Council of Higher Education for Virginia.

Figure 2 depicts the growth in Liberty University's total fall headcount enrollment between 1992 and 2017. Overall, headcount enrollment increased from 8,500 in fall 1992 to 75,044 in fall 2017, an increase of 68,544 students or 783 percent. Breaking this total down by undergraduate, graduate, and first professional enrollment shows that undergraduate enrollment increased by 38,879 students or 566 percent over this period, graduate enrollment increased by 24,565 students or 1,567 percent, and first professional enrollment increased by 3,100 students or 5,439 percent.

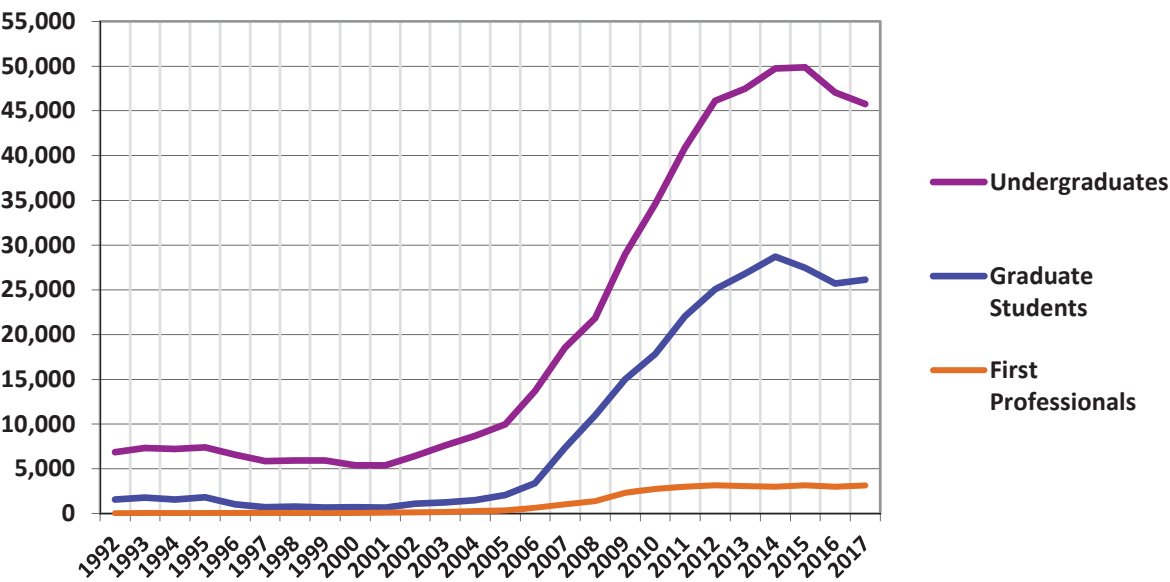


Figure 2: Fall Headcount Enrollment – 1992 to 2017⁶

Figure 3 puts these truly remarkable growth rates in perspective by comparing Liberty University's growth in total fall headcount enrollment between 1992 and 2017 to that of Virginia's other private non-profit colleges and universities, as well as the state's public four-year institutions. As this chart demonstrates, in contrast to Liberty's 783 percent increase in enrollment over this period, Virginia's other four-year private non-profit colleges and universities grew by 42 percent, and Virginia's four-year public colleges and universities grew by 34 percent.

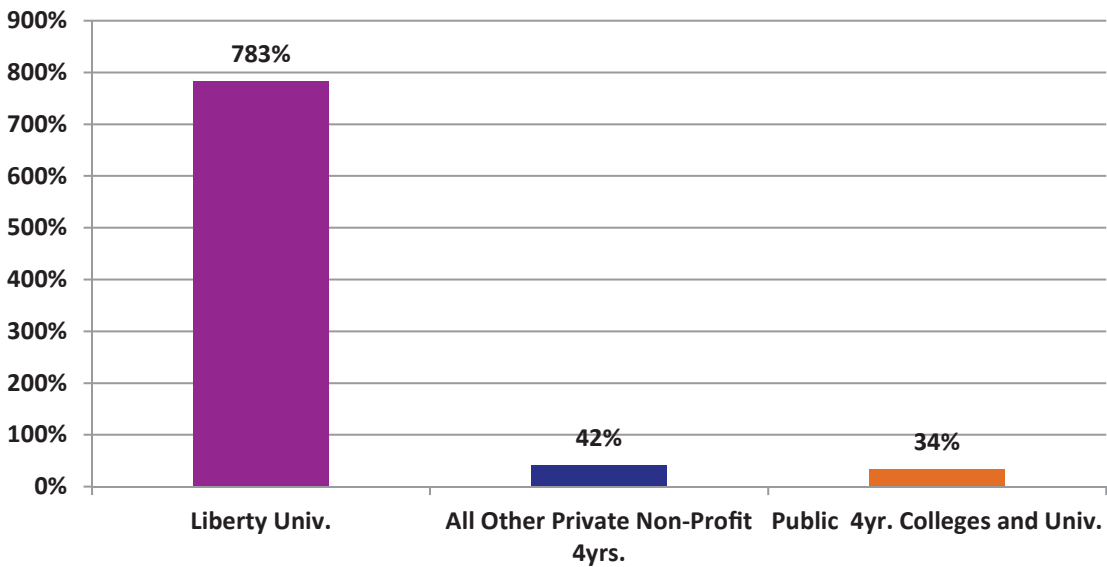


Figure 3: Total Enrollment Growth – Fall 1992 to Fall 2017⁷

^{6,7} 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 enrollment, Liberty tends to serve a greater proportion of adult or non-traditional students (i.e., students 25 years of age or older) than is typical among Virginia's other four-year colleges and universities. In fall 2017, non-traditional students comprised 68 percent of Liberty's headcount enrollment, as compared to 35 percent in Virginia's other private non-profit colleges and universities, and 24 percent in the state's public four-year institutions.

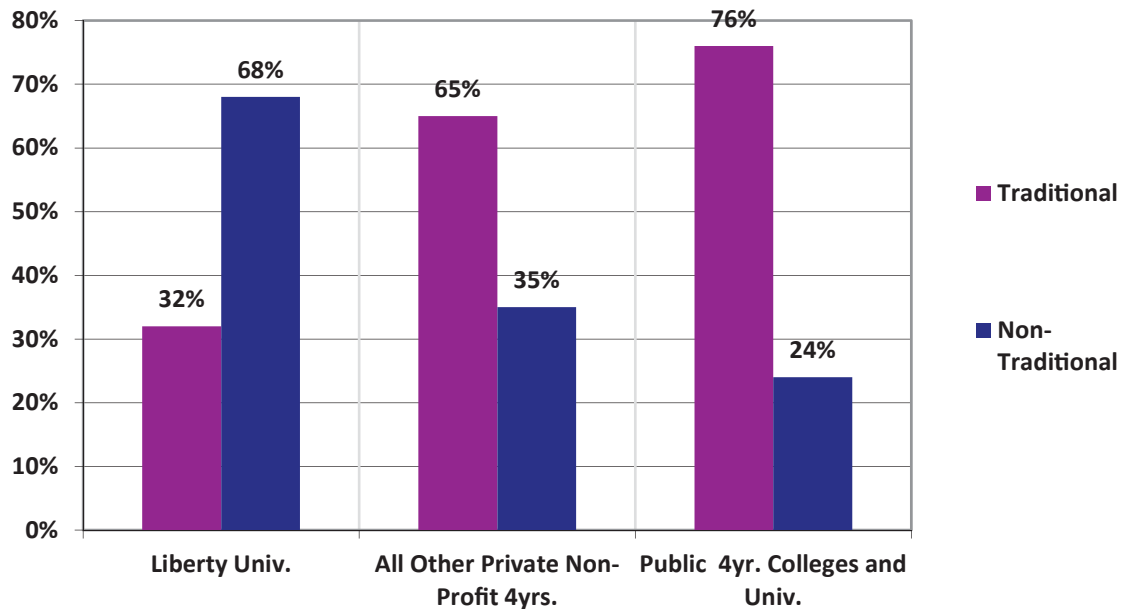


Figure 4: 2017 Fall Headcount Enrollment – Traditional and Non-Traditional Students⁸

Figure 5 details the race/ethnicity distribution of Liberty University's student body and compares that distribution to the norm for other four-year colleges and universities in Virginia.⁹ As these data show, the distributions are quite comparable. In fall 2017, minority and foreign students comprised 32 percent of Liberty's enrollment, 41 percent of enrollment at other Virginia four-year non-profit colleges, and 39 percent of enrollment in the state's four year public colleges and universities.

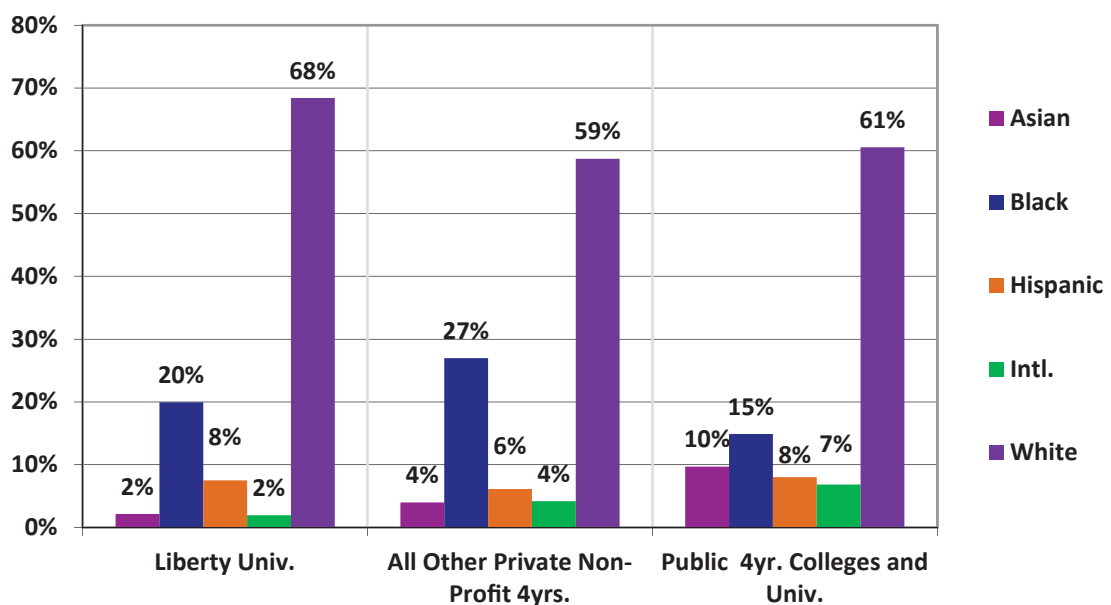


Figure 5: 2017 Fall Headcount Enrollment by Race/Ethnicity¹⁰

^{8,10} Data Source: State Council of Higher Education for Virginia.

⁹ Data are only for those students for whom race/ethnicity was reported.

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's enrollment tends to be much more heavily comprised of out-of-state students (77 percent in fall 2017) than is typical for other Virginia non-profit colleges and universities (64 percent in fall 2017), or the state's public four-year institutions (23 percent in fall 2017). From an economic perspective, this means that Liberty 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.

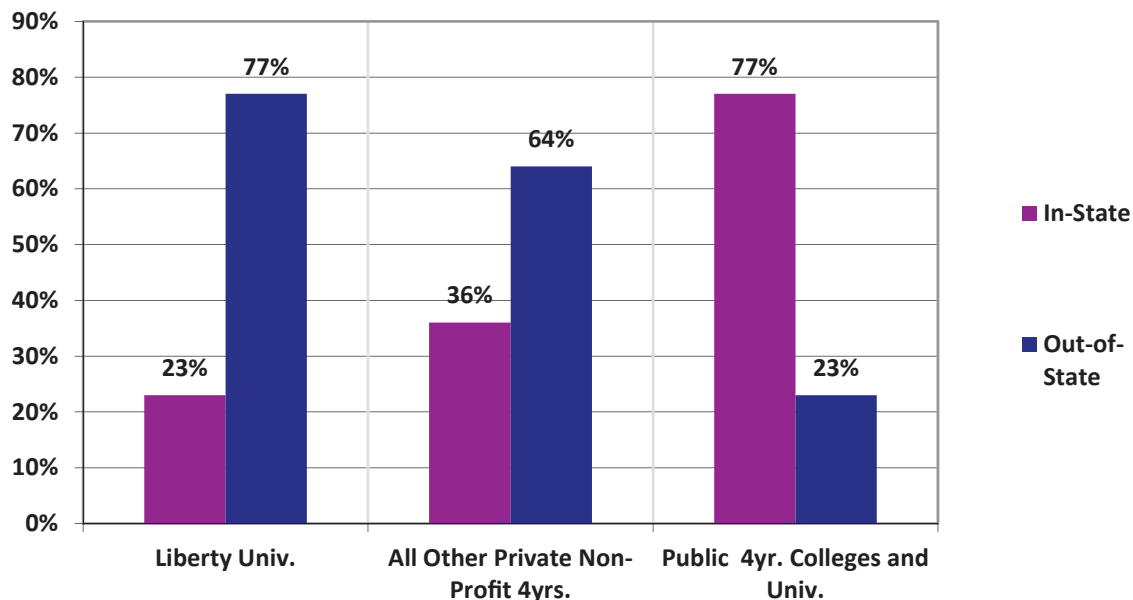


Figure 6: 2017 Fall Headcount Enrollment – In-State and Out-of-State Students¹¹

Completions

Figure 7 depicts the number of graduates that Liberty University produced in academic year 2016-17 by degree level. As these data indicate, the largest number of completions were at the bachelor's level (8,214), followed closely by master's (7,564), then two-year associate's (1,273), certificates (906), doctoral (602), and first professional (552). Figure 8 further breaks these totals down according to major program. As this chart shows, the top five programs were: Business, Management, Marketing and Related Support Services (3,616 awards), Education (2,900 awards), Health Professions and Related Programs (2,645), Psychology (2,180 awards), and Theology and Religious Vocations (2,065 awards).

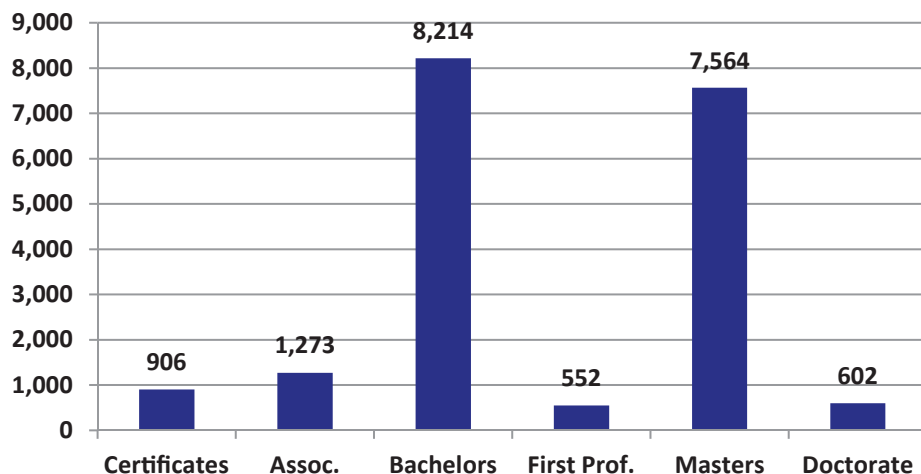


Figure 7: Liberty University 2016-17 Completions by Degree Level¹²

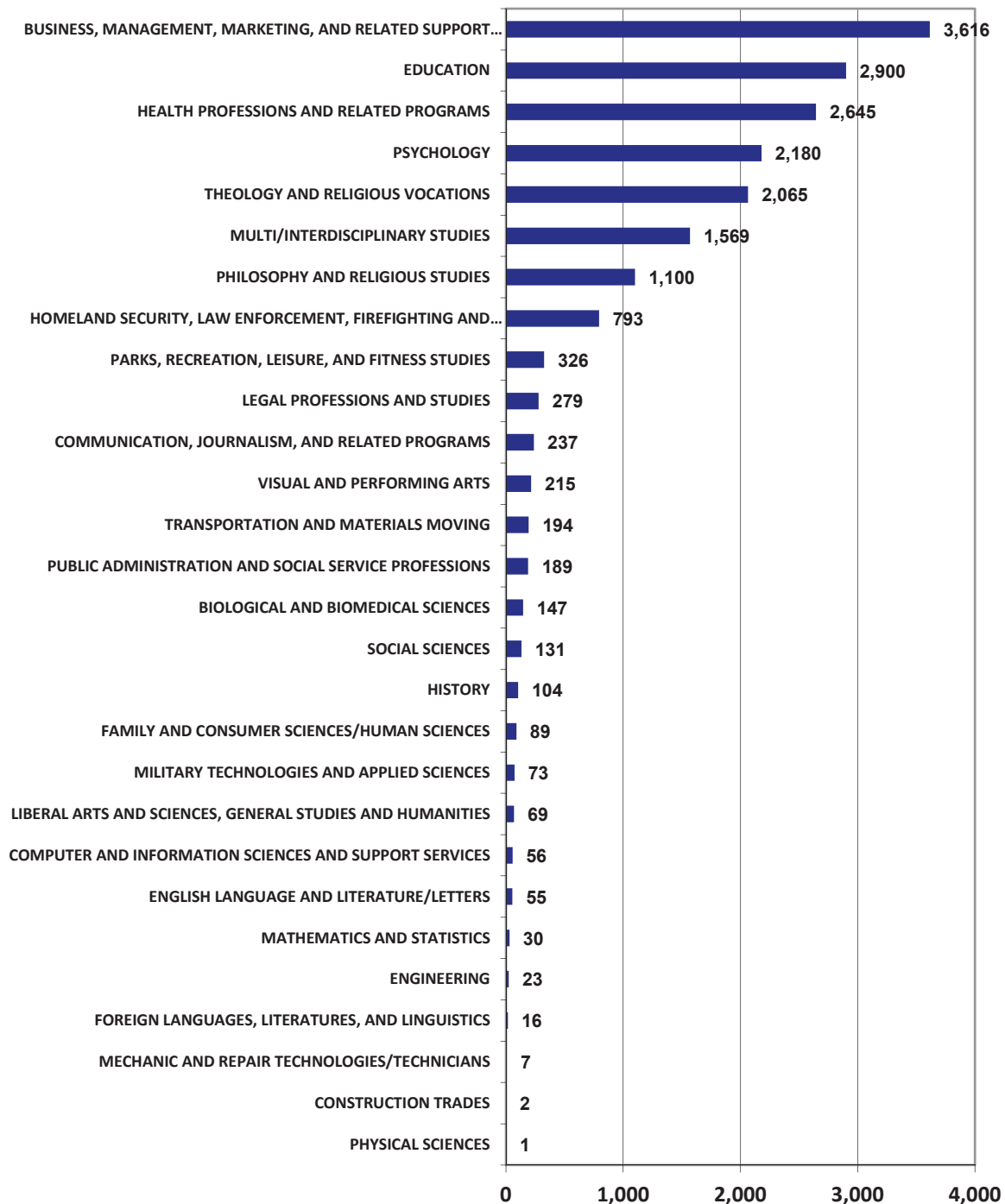


Figure 8: Liberty University 2016-17 Completions by Program¹³

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



LYNCHBURG MSA PROFILE¹⁴

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 Trends

Figure 9 plots the change in total employment in the Lynchburg MSA between the 4th quarter of 2012 and the 4th quarter of 2017. As these data indicate, total employment increased gradually throughout the period. Overall between the 4th quarter of 2012 and the 4th quarter of 2017, the Lynchburg MSA experienced an increase of 2,227 jobs, or a 2.3 percent increase in total employment. To place this number in context, over this same period the state of Virginia as a whole experienced a 5.9 percent increase in total employment.

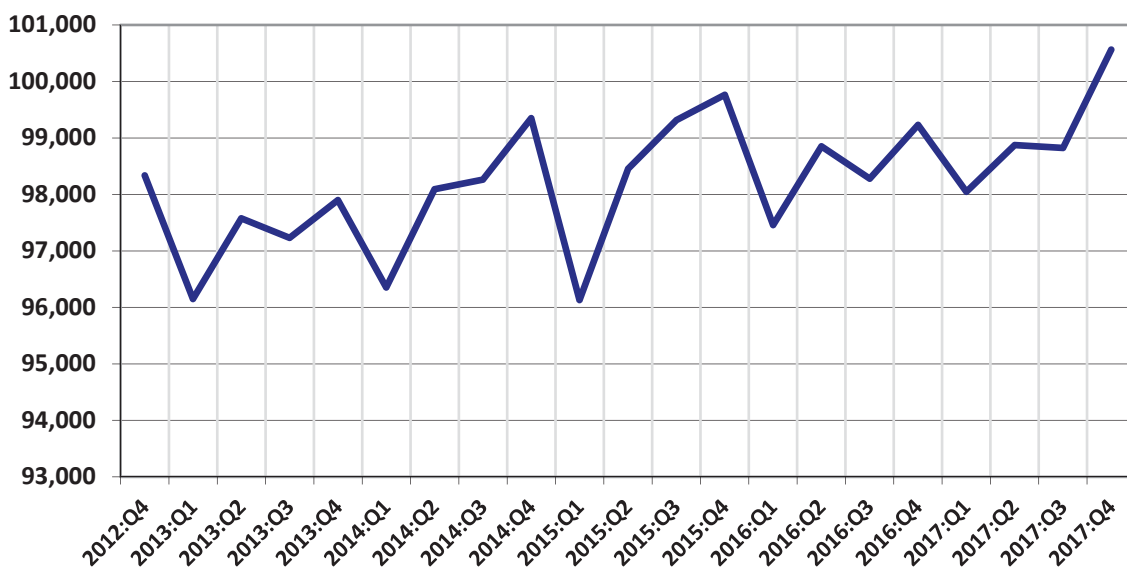


Figure 9: Lynchburg MSA Total Employment – 2012:Q4 to 2017:Q4¹⁵

To provide a relative benchmark for the data presented in Figure 9 and to control for seasonality, Figure 10 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. Any observation above the zero line in this graph denotes a year-over-year increase in employment, while any observation below the zero line denotes a year-over-year decline in employment. As these data indicate, the Lynchburg MSA generally under-performed the state of Virginia throughout the period. However, starting in mid-2017 employment growth in the Lynchburg MSA began to accelerate and in the 4th quarter of 2017 the region overtook the statewide norm. As of the 4th quarter of 2017, year-over-year employment growth stood at 1.3 percent in the Lynchburg MSA and 1.2 percent in Virginia statewide.

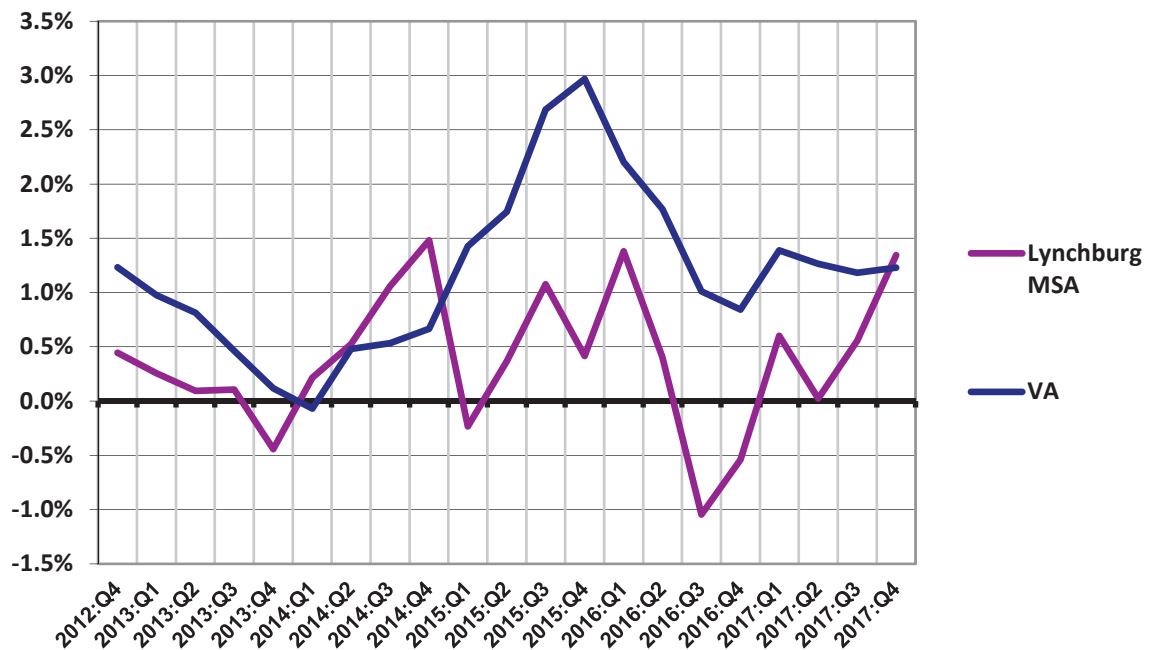


Figure 10: Year-Over-Year Change in Employment – 2012:Q4 to 2017:Q4¹⁶

Employment and Wages by Industry

To provide a better understanding of the factors motivating the overall employment trends depicted in Figures 9 and 10, Figures 11 through 13 provide additional detail on regional employment by major industry sector. Figure 11 depicts employment in the Lynchburg MSA by major industry sector in the 4th quarter of 2017. As these data show, the five largest industry sectors in the region that quarter were: 1) Healthcare and Social Assistance (16,651 jobs), 2) Manufacturing (14,793 jobs), 3) Retail Trade (13,336 jobs), 4) Education Services (9,605 jobs), and 5) Accommodation and Food Services (9,219 jobs).¹⁷

Figure 12 provides comparable data on average weekly wages in the Lynchburg MSA by major industry sector in the 4th quarter of 2017. In this case, the five highest paying industry sectors in the region that quarter were: 1) Wholesale Trade (\$1,627 per week), 2) Professional and Technical Services (\$1,457 per week), 3) Management of Companies and Enterprises (\$1,175 per week), 4) Manufacturing (\$1,171 per week), and Finance and Insurance (\$1,148 per week).

One of the more striking characteristics of these data is the heavy dependence that the region has on the Manufacturing sector, both in terms of employment (Manufacturing comprises 15 percent of total employment in the region as compared to 6 percent statewide) and wages (Manufacturing is the region's 4th highest paying industry sector, with average weekly wages that are 40 percent above the overall average for the region).

¹⁶ Data Source: Virginia Employment Commission.

¹⁷ 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.

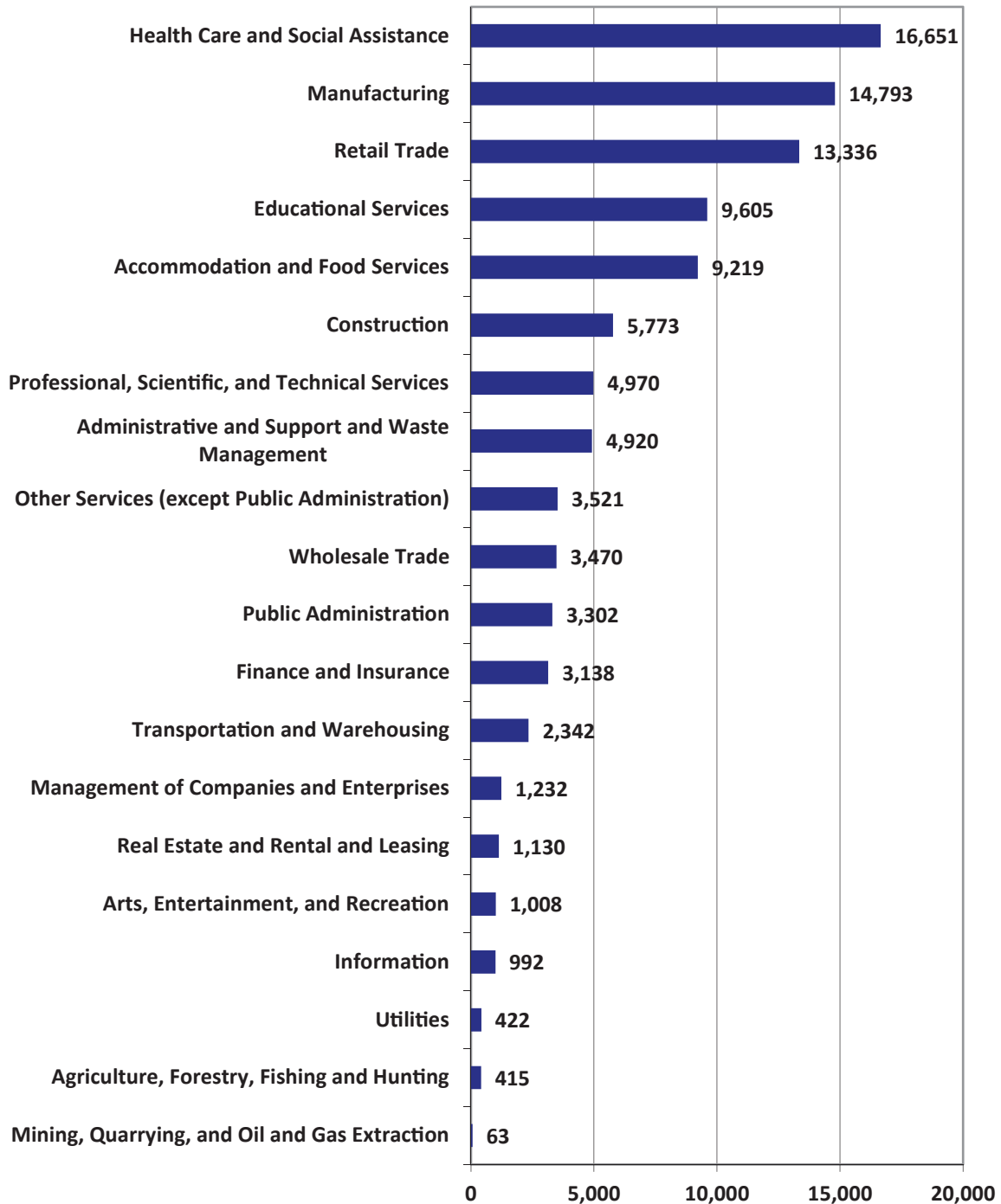


Figure 11: Lynchburg MSA Employment by Major Industry Category – 4th Quarter 2017¹⁸

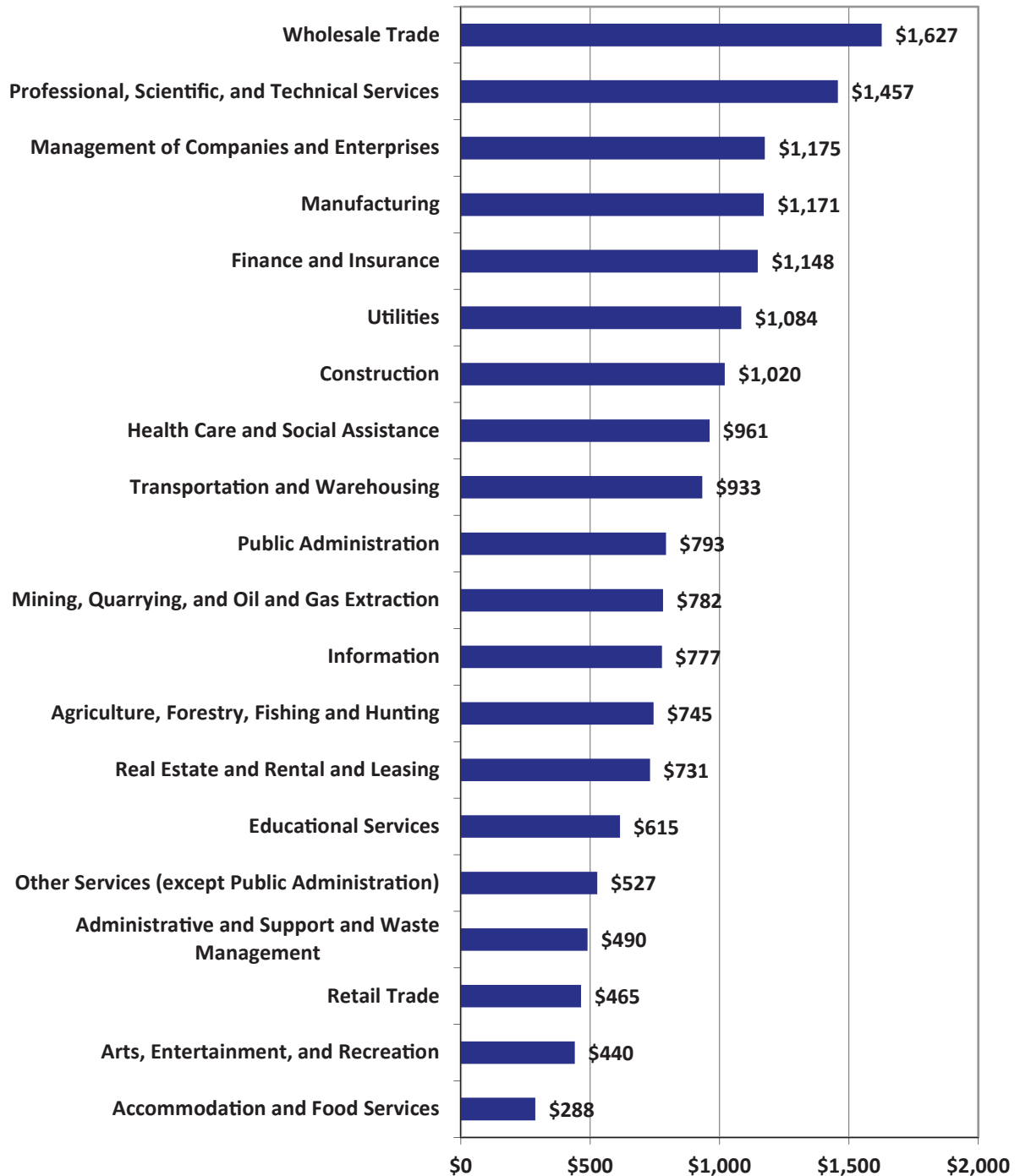


Figure 12: Lynchburg MSA Average Weekly Wages by Major Industry Category – 4th Quarter 2017¹⁹

¹⁹ Data Source: Virginia Employment Commission.

Lastly, Figure 13 takes a look at the most recent year-over-year employment changes in the Lynchburg MSA by major industry sector. Overall, in the one-year period between the 4th quarter of 2016 and the 4th quarter of 2017 the Lynchburg MSA gained a total of 1,335 jobs. Breaking this number down according to major industry sector shows that the largest gainers over this period were: 1) Educational Services (up 556 jobs), 2) Healthcare and Social Assistance (up 434 jobs), and 3) Other Services (up 295 jobs). At the other end of the spectrum, the largest losers were: 1) Transportation and Warehousing (down 253 jobs), 2) Retail Trade (down 215 jobs), and 3) Professional and Technical Services (down 98 jobs).

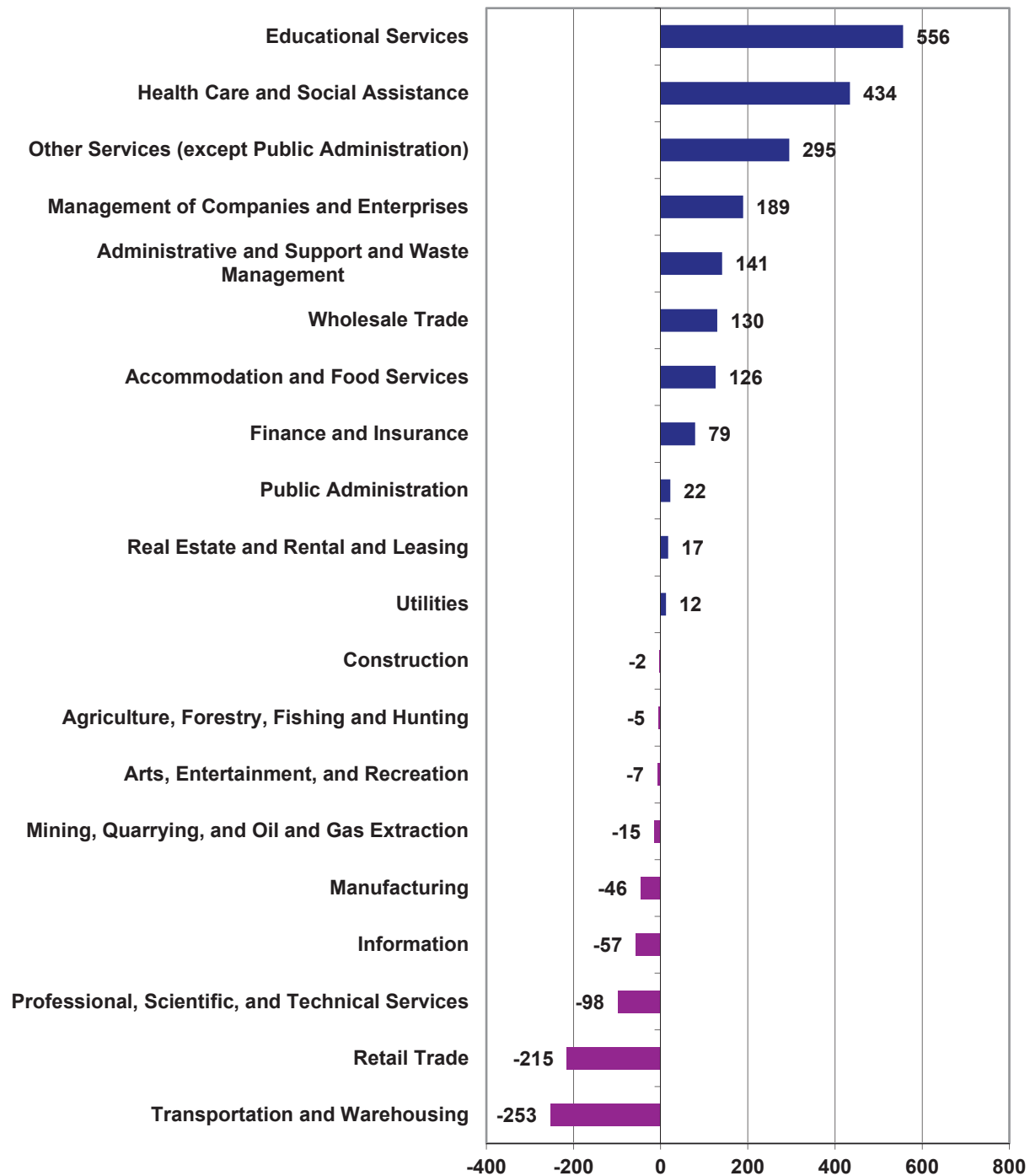


Figure 13: Lynchburg MSA Change in Employment by Major Industry Category – 4th Quarter 2016 to 4th Quarter 2017²⁰



Unemployment

Finally, Figure 14 compares the unemployment rate in the Lynchburg MSA to that of Virginia statewide for the period between April 2013 and April 2019. As these data show, throughout this period unemployment trended downward in both jurisdictions. However, the unemployment rate in the Lynchburg MSA has generally been about one-half of a percentage point above the statewide norm. As of April 2018, the unemployment rate stood at 3.2 percent in the Lynchburg MSA and 2.8 percent statewide.

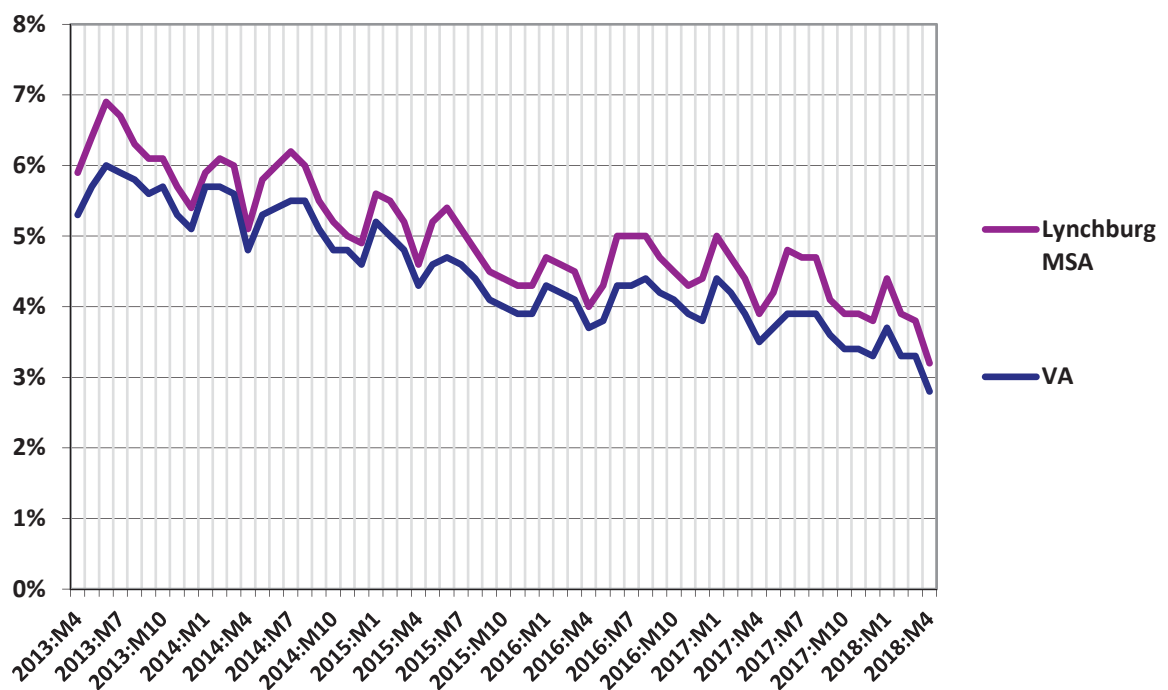


Figure 14: Lynchburg MSA Unemployment Rate – April 2013 to April 2018²¹

In sum, the data presented in this section depict a region that is heavily dependent on the Manufacturing sector and until recently was under-performing the statewide norm with regard to employment growth. 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 overall employment picture.

²¹ Data Source: Virginia Employment Commission.

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 (FY) 2016-17.²² To accomplish this task, we employ a commonly used regional economic impact model called IMPLAN.²³ The IMPLAN model uses regional and national data on 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. While the third is economic output, or the total amount of economic activity that is generated in the economy.

Lynchburg MSA²⁴

Regional Spending

In FY 2016-17, Liberty University was directly responsible for contributing \$618.3 million in spending to the Lynchburg MSA. As shown in Figure 15:

- Liberty expenditures on goods and services accounted for 9 percent of that total (\$54.8 million),²⁵
- Liberty expenditures on salaries and wages accounted for 39 percent (\$240.6 million),²⁶
- Liberty expenditures on capital construction projects accounted for 28 percent (\$176.1 million),²⁷
- Expenditures on goods and services by enterprises associated with Liberty accounted for 1 percent (\$5.8 million),²⁸
- Expenditures on salaries and wages by enterprises associated with Liberty accounted for 2 percent (\$9.9 million),²⁹
- Employer expenditures for employee healthcare accounted for 3 percent (\$17.3 million),³⁰
- Student spending accounted for 13 percent (\$82.6 million),³¹ and
- Visitor spending accounted for 5 percent (\$31.2 million),³²

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

²² July 1 of 2016 through June 31 of 2017.

²³ IMPLAN v.3 is produced by Minnesota IMPLAN Group, Inc.

²⁴ The Lynchburg MSA is comprised of the counties of Amherst, Appomattox, Bedford, and Campbell, and the City of Lynchburg.

²⁵–³¹ Data source: Liberty University.

³² 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 2017 Leisure Travel Profile to Virginia," Virginia Tourism Corporation).

\$618 Million in Regional Spending

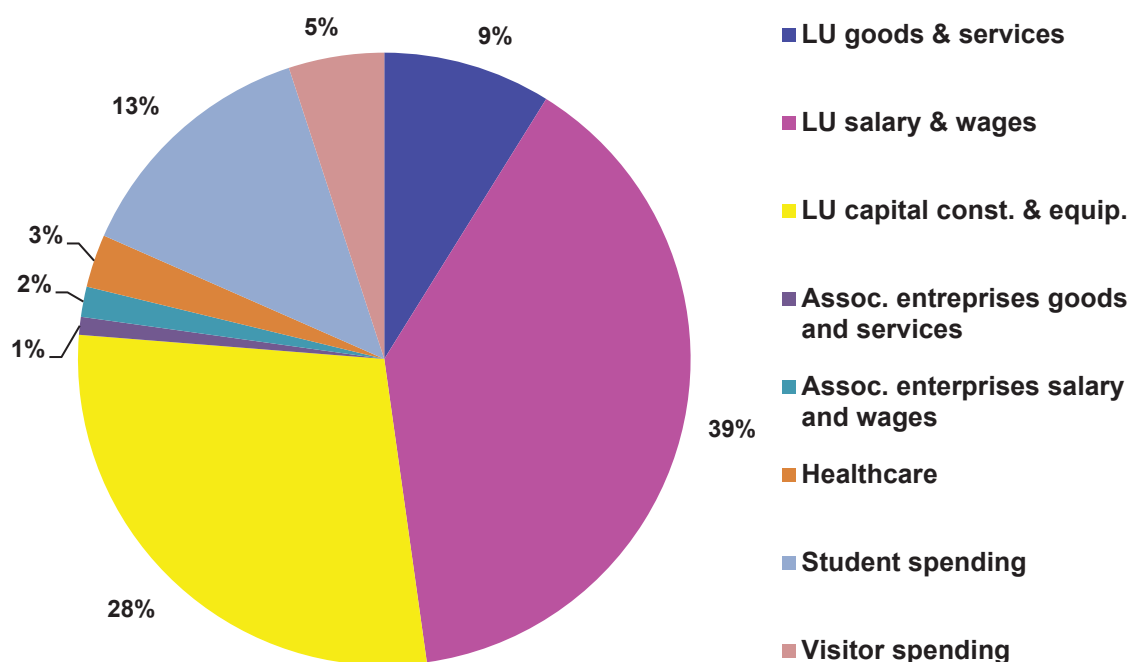


Figure 15: Distribution of Liberty University 2016-17 Spending within the Lynchburg MSA

Regional Economic Impact

As shown in Table 1, our analysis indicates that this \$618.3 million in regional spending was responsible for generating:

- **Regional Employment:** In addition to directly providing 8,510 full time equivalent jobs within the region, economic activity associated with Liberty University also supported 3,410 full time equivalent jobs through second round effects, for a total regional employment impact of 11,919 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$312.1 million in regional labor income, economic activity associated with Liberty University also created \$122.2 million in additional regional labor income through second round effects, for a total regional labor income impact of \$434.3 million.
- **Economic Output:** In addition to directly generating \$611.0 in regional economic output, economic activity associated with Liberty University also generated \$419.6 million in regional economic activity through second round effects, for a total regional economic output impact of over \$1.0 billion.

	Employment	Labor Income	Output
<i>First Round Direct Economic Activity</i>	8,510	\$312,119,657	\$610,957,863
<i>Second Round Indirect and Induced Economic Activity</i>	3,410	\$122,160,576	\$419,605,386
<i>Total, Direct, Indirect, and Induced Economic Activity</i>	11,919	\$434,280,231	\$1,030,563,250

Table 1: Estimated Total Economic Impact of Liberty University on the Lynchburg MSA in FY 2016-17



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 the Lynchburg MSA in fiscal year 2016-17, we employ the following assumption:

- Total university expenditures for goods and services within the Lynchburg MSA were \$54.8 million in fiscal year 2016-17.³³

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 571 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 \$17.5 million in additional labor income within the region.
- **Economic Output:** In addition to directly generating \$54.8 million in economic activity, Liberty University's expenditures on goods and services also generated \$79.0 million in regional activity through second round effects, for a total regional output impact of \$133.8 million.

	Employment	Labor Income	Output
<i>First Round Direct Economic Activity</i>	0	\$0	\$54,831,242
<i>Second Round Indirect and Induced Economic Activity</i>	571	\$17,538,499	\$78,969,488
<i>Total, Direct, Indirect, and Induced Economic Activity</i>	571	\$17,538,499	\$133,800,730

Table 2: Estimated Economic Impact of Liberty University Expenditures on Goods and Services on the Lynchburg MSA in FY 2016-17



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 2016-17:

- Total university expenditures on salaries and wages within the Lynchburg MSA were \$240.6 million in fiscal year 2016-17.³⁴

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 6,436 full time equivalent jobs, Liberty University's expenditures on salaries and wages also supported 1,323 full time equivalent jobs through second round effects, for a total regional employment impact of 7,759 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$240.6 million in labor income, Liberty University's expenditures on salaries and wages also created \$46.4 million in additional regional labor income through second round effects, for a total regional labor income impact of \$287.0 million.
- **Economic Output:** In addition to directly generating \$240.6 million in economic activity, Liberty University's expenditures on salaries and wages also generated \$153.8 million in regional activity through second round effects, for a total regional output impact of \$394.4 million.

	Employment	Labor Income	Output
<i>First Round Direct Economic Activity</i>	6,436	\$240,600,975	\$240,600,975
<i>Second Round Indirect and Induced Economic Activity</i>	1,323	\$46,435,430	\$153,758,076
<i>Total, Direct, Indirect, and Induced Economic Activity</i>	7,759	\$287,036,405	\$394,359,051

Table 3: Estimated Economic Impact of Liberty University Expenditures on Salaries and Wages on the Lynchburg MSA in FY 2016-17

³⁴ Data Source: Liberty University.



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 2016-17, we employ the following assumption:

- Total university expenditures on capital construction and equipment within the Lynchburg MSA were \$176.1 million in fiscal year 2016-17.³⁵

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 1,110 full time equivalent jobs, Liberty University's expenditures on capital construction and equipment also supported 577 full time equivalent jobs through second round effects, for a total regional employment impact of 1,687 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$40.0 million in labor income, Liberty University's expenditures on capital construction and equipment also created \$25.0 million in additional regional labor income through second round effects, for a total regional labor income impact of \$65.0 million.
- **Economic Output:** In addition to directly generating \$176.1 in economic activity, Liberty University's expenditures on capital construction and equipment also generated \$79.6 million in regional activity through second round effects, for a total regional output impact of \$255.7 million.

	Employment	Labor Income	Output
<i>First Round Direct Economic Activity</i>	1,110	\$39,962,871	\$176,096,292
<i>Second Round Indirect and Induced Economic Activity</i>	577	\$25,003,862	\$79,644,790
<i>Total, Direct, Indirect, and Induced Economic Activity</i>	1,687	\$64,966,733	\$255,741,083

Table 4: Estimated Economic Impact of Liberty University Expenditures on Capital Construction and Equipment on the Lynchburg MSA in FY 2016-17



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 2016-17 by enterprises associated with Liberty University,³⁶ we employ the following assumption:

- Total associated enterprise expenditures for goods and services within the Lynchburg MSA were \$5.8 million in fiscal year 2016-17³⁷

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

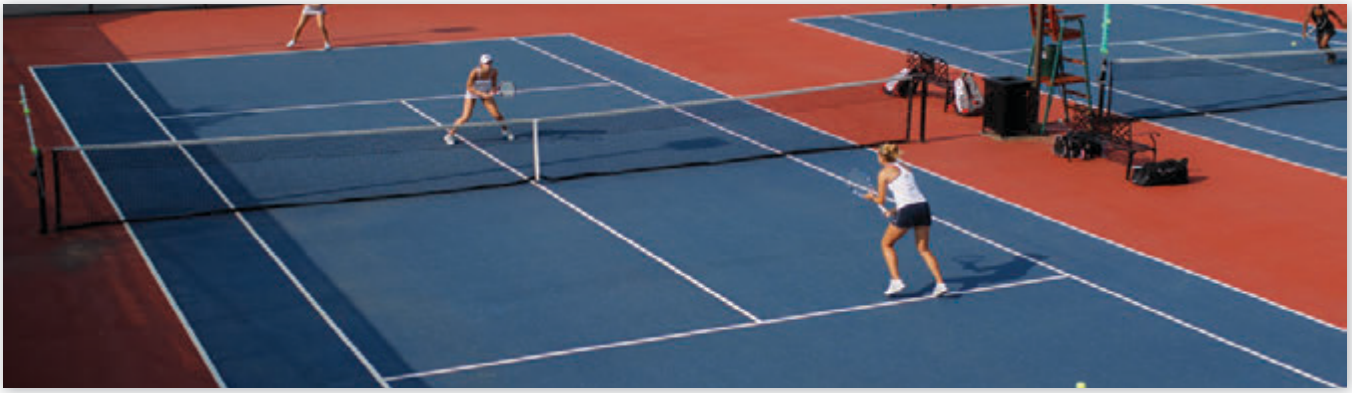
- **Regional Employment:** Second round effects attributable to associated enterprise expenditures on goods and services were responsible for supporting an additional 63 full time equivalent jobs in the region.
- **Labor Income:** Second round effects attributable to associated enterprise expenditures on goods and services were responsible for generating \$2.3 million in additional labor income within the region.
- **Economic Output:** In addition to directly generating \$5.8 million in economic activity, associated enterprise expenditures on goods and services also generated \$7.9 million in regional activity through second round effects, for a total regional output impact of \$13.7 million.

	Employment	Labor Income	Output
<i>First Round Direct Economic Activity</i>	0	\$0	\$5,814,094
<i>Second Round Indirect and Induced Economic Activity</i>	63	\$2,325,165	\$7,924,934
<i>Total, Direct, Indirect, and Induced Economic Activity</i>	63	\$2,325,165	\$13,739,028

Table 5: Estimated Economic Impact of Associated Enterprise Expenditures on Goods and Services on the Lynchburg MSA in FY 2016-17

³⁶ These enterprises include Airport Plaza Holdings, LLC; Burton Properties; Candler Station Holdings; Crossroads; Fairfield Inn and Suites; Freedom Aviation; Liberty Christian Academy; Liberty Health Services; Liberty Motion Pictures; Liberty Mountain Conference Center; Liberty Mountain Medical Group; Morningstar Broadcasting; Plaza Holdings; Red Tie Music; and Virginia Aviation.

³⁷ Data Source: Liberty University.



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 2016-17 by enterprises associated with Liberty University³⁸:

- Total associated enterprise expenditures on salaries and wages within the Lynchburg MSA were \$9.9 million in fiscal year 2016-17.³⁹

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

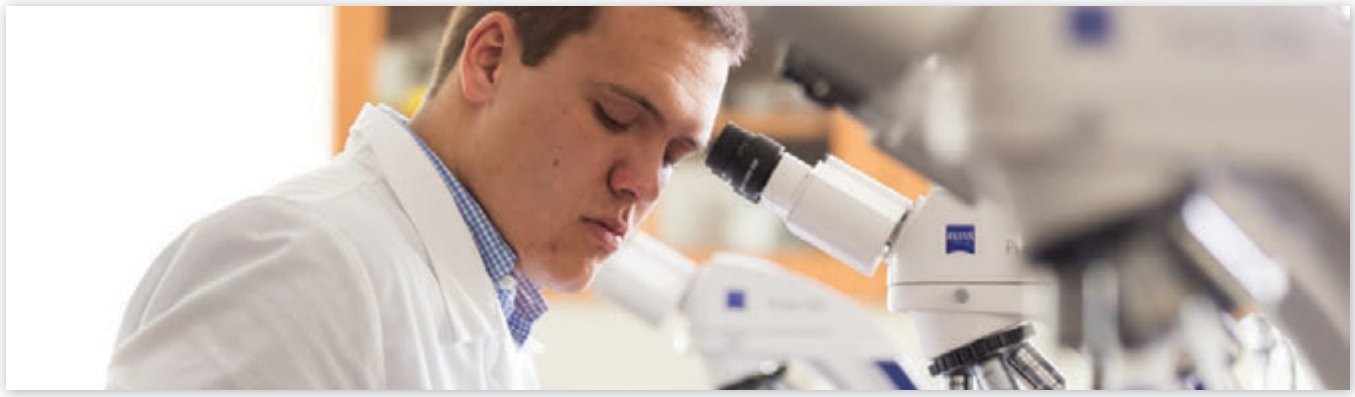
- **Regional Employment:** In addition to directly providing 361 full time equivalent jobs, associated enterprise expenditures on salaries and wages also supported 54 full time equivalent jobs through second round effects, for a total regional employment impact of 415 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$9.9 million in labor income, associated enterprise expenditures on salaries and wages also created \$1.9 million in additional regional labor income through second round effects, for a total regional labor income impact of \$11.8 million.
- **Economic Output:** In addition to directly generating \$9.9 million in economic activity, associated enterprise expenditures on salaries and wages also generated \$6.3 million in regional activity through second round effects, for a total regional output impact of \$16.2 million.

	Employment	Labor Income	Output
<i>First Round Direct Economic Activity</i>	361	\$9,881,399	\$9,881,399
<i>Second Round Indirect and Induced Economic Activity</i>	54	\$1,907,087	\$6,314,791
<i>Total, Direct, Indirect, and Induced Economic Activity</i>	415	\$11,788,486	\$16,196,190

Table 6: Estimated Economic Impact of Associated Enterprise Expenditures on Salaries and Wages on the Lynchburg MSA in FY 2016-17

³⁸ These enterprises include Airport Plaza Holdings, LLC; Burton Properties; Candler Station Holdings; Crossroads; Fairfield Inn and Suites; Freedom Aviation; Liberty Christian Academy; Liberty Health Services; Liberty Motion Pictures; Liberty Mountain Conference Center; Liberty Mountain Medical Group; Morningstar Broadcasting; Plaza Holdings; Red Tie Music; and Virginia Aviation.

³⁹ Data Source: Liberty University.



6. Employee Related Healthcare Expenditures:

In assessing the likely economic impact attributable to healthcare expenditures within the Lynchburg MSA in fiscal year 2016-17 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 \$17.3 million in fiscal year 2016-17.⁴⁰

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 106 full time equivalent jobs, employee related healthcare expenditures also supported 98 full time equivalent jobs through second round effects, for a total regional employment impact of 205 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$12.3 million in labor income, employee related healthcare expenditures also created \$3.5 million in additional regional labor income through second round effects, for a total regional labor income impact of \$15.8 million.
- **Economic Output:** In addition to directly generating \$17.3 in economic activity, employee related healthcare expenditures also generated \$11.5 million in regional activity through second round effects, for a total regional output impact of \$28.8 million.

	Employment	Labor Income	Output
<i>First Round Direct Economic Activity</i>	106	12,297,378	\$17,303,204
<i>Second Round Indirect and Induced Economic Activity</i>	98	3,521,157	\$11,460,645
<i>Total, Direct, Indirect, and Induced Economic Activity</i>	205	15,818,535	\$28,763,849

Table 7: Estimated Economic Impact of Employee Related Healthcare Expenditures on the Lynchburg MSA in FY 2016-17

⁴⁰ Data Source: Liberty University.

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 2016-17 is predicated on the following assumptions:

- Liberty University students spent an average of \$540.28 per month in the Lynchburg MSA in fiscal year 2016-17.⁴¹
- On average, Liberty University students reside in the Lynchburg MSA for 9.4 months out of the year.⁴²
- There are an estimated 15,333 Liberty University residential, commuter, or online students who reside in the Lynchburg MSA for at least a portion of the year.⁴³
- In addition to those residential, commuter, and online students who reside in the Lynchburg MSA, in fiscal year 2016-17 an additional 7,364 intensive online students physically attended classes for some number of days at Liberty University's campus.⁴⁴
- On average, these intensive online students made 2.8 visits to the campus in fiscal year 2016-17 and stayed 5.2 days each visit.⁴⁵
- Liberty University intensive online students spent an average of \$230.84 per visit in the Lynchburg MSA in fiscal year 2016-17.⁴⁶
- The distribution of Liberty University intensive online student's expenditures on various goods and services in fiscal year 2016-17 is comparable to tourism spending data developed by the Virginia Tourism Corporation for fiscal year 2016.⁴⁷
- 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 have been \$82.6 million in fiscal year 2016-17.

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 55 full time equivalent jobs, spending by Liberty University students also supported 610 full time equivalent jobs through second round effects, for a total regional employment impact of 664 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$1.0 million in labor income, spending by Liberty University students also created \$21.3 million in additional regional labor income through second round effects, for a total regional labor income impact of \$22.3 million.
- **Economic Output:** In addition to directly generating \$81.0 in economic activity, spending by Liberty University students also generated \$67.7 million in regional activity through second round effects, for a total regional output impact of \$148.7 million.



^{41, 42, 45, 46} Data Source: Based on the findings from surveys of Liberty University students conducted in March 2010 and October 2015.

⁴³ Data Source: Liberty University. 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.

⁴⁴ Data Source: Liberty University.

⁴⁷ Data Source: "FY 2016 Leisure Travel Profile to Virginia," Virginia Tourism Corporation.

	Employment	Labor Income	Output
First Round Direct Economic Activity	55	\$1,032,132	\$81,011,821
Second Round Indirect and Induced Economic Activity	610	\$21,305,604	\$67,713,877
Total, Direct, Indirect, and Induced Economic Activity	664	\$22,337,735	\$148,725,698

Table 8: Estimated Economic Impact of Liberty University Student Spending on the Lynchburg MSA in FY 2016-17

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 2016-17, is predicated on the following assumptions:

- Visitors to Liberty University students spent an average of \$215.04 per visit in the Lynchburg MSA in fiscal year 2016-17.⁴⁸
- 78 percent of Liberty University students had out-of-town visitors in fiscal year 2016-17.⁴⁹
- 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.⁵⁰
- Visitors to Liberty University employees spent an average of \$192.92 per visit in the Lynchburg MSA in fiscal year 2016-17.⁵¹
- 85 percent of Liberty University employees had out-of-town visitors in fiscal year 2016-17.⁵²
- On average, each employee receiving visitors had 3.7 visits during the year, each visit lasted 3.0 days, and involved 2.5 out-of-town visitors.⁵³
- There were 105,807 out-of-town visitors to Liberty University events in fiscal year 2016-17 and it is estimated that these visitors spent \$219.63 per person per over-night visit.⁵⁴
- The distribution of Liberty University visitor expenditures on various goods and services in fiscal year 2016-17 is comparable to tourism spending data developed by the Virginia Tourism Corporation for fiscal year 2016.⁵⁵
- Total expenditures by visitors to Liberty University students, employees, and events are estimated to be \$31.2 million in fiscal year 2016-17.⁵⁶



⁴⁸ – ⁵⁰, ⁵², ⁵³ Data Source: Based on the findings from surveys of Liberty University students conducted in March 2010 and October 2015.

⁵¹ Data Source: Based on the findings from surveys of Liberty University employees conducted in March 2010 and October 2015.

⁵⁴ Data Source: Event visitor data were provided by Liberty University and spending estimates were taken from "FY 2017 Leisure Travel Profile to Virginia," Virginia Tourism Corporation.

⁵⁵ Data Source: "FY 2016 Leisure Travel Profile to Virginia," Virginia Tourism Corporation.

⁵⁶ Data Source: Derived from the student and employee surveys, as well as event information provided by Liberty University.

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 442 full time equivalent jobs, spending by visitors to Liberty University also supported 114 full time equivalent jobs through second round effects, for a total regional employment impact of 556 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$8.3 million in labor income, spending by visitors to Liberty University also created \$4.1 million in additional regional labor income through second round effects, for a total regional labor income impact of \$12.5 million.
- **Economic Output:** In addition to directly generating \$25.4 in economic activity, spending by visitors to Liberty University also generated \$13.8 million in regional activity through second round effects, for a total regional output impact of \$39.2 million.

	Employment	Labor Income	Output
<i>First Round Direct Economic Activity</i>	442	\$8,344,902	\$25,418,836
<i>Second Round Indirect and Induced Economic Activity</i>	114	\$4,123,772	\$13,818,785
<i>Total, Direct, Indirect, and Induced Economic Activity</i>	556	\$12,468,673	\$39,237,621

Table 9: Estimated Economic Impact of Liberty University Visitor Spending on the Lynchburg MSA in FY 2016-17

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 2016-17. 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,⁵⁷ 2) information on out-of-town attendees to Liberty University events,⁵⁸ and 3) information on the economic activities of enterprises associated with Liberty University.⁵⁹ As shown in Table 10, based on these data we estimate that Liberty University and its associated enterprises, in combination with its employees, students, and visitors directly contributed a total of approximately \$15.2 million in local tax revenue to the Lynchburg MSA in fiscal year 2016-17.

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 2016-17 Liberty University generated approximately \$10.0 million in tax revenue for the city. More specifically, Liberty University was directly or indirectly responsible for generating approximately:

- 7 percent of the city of Lynchburg's total Real Property Tax revenue,
- 12 percent of its Personal Property Tax revenue,
- 6 percent of its Motor Vehicle License Fee revenue,
- 10 percent of its Restaurant Food Tax revenue,
- 31 percent of its Hotel and Motel Room Tax revenue, and
- 4 percent of its local Sales Tax revenue.⁶⁰

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

	Amherst Co.	Appomattox Co.	Bedford Co.	Campbell Co.	Lynchburg City	TOTAL
Real Property⁶¹	\$332,169	\$184,430	\$1,437,506	\$969,608	\$3,801,686	\$6,725,399
Personal Property⁶²	\$158,993	\$46,120	\$578,806	\$867,035	\$1,636,612	\$3,287,567
Motor Vehicle License Fee⁶³	\$11,374	\$6,566		\$60,950	\$109,896	\$188,785
Restaurant Food Tax⁶⁴	\$29,252	\$15,767	\$122,638		\$1,387,642	\$1,555,299
Hotel and Motel Room Tax⁶⁵	\$5,669	\$3,156	\$30,242	\$12,667	\$684,118	\$735,853
Local Sales Tax⁶⁶	\$29,549	\$10,995	\$127,048	\$142,424	\$622,271	\$932,287
Other Local Taxes⁶⁷			\$797	\$24,094	\$1,759,914	\$1,784,805
TOTAL	\$567,006	\$267,035	\$2,297,039	\$2,076,777	\$10,002,138	\$15,209,995

Table 10: Estimated Total Fiscal Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2016-17

⁵⁷ The employee and student surveys were administered in an online format in March 2010 and October 2015. Respondents were asked to provide detailed information on their local spending habits, home ownership, vehicle ownership, and out-of-town visitors.

⁵⁸ Data Source: Liberty University. According to university data, in fiscal year 2016-17 there were at least 105,807 out-of-town attendees at university sponsored events. Estimates of out-of-town visitor spending were based on data from the Virginia Tourism Corporation's FY 2016 and FY 2017 "Profile of Leisure Travel in Virginia."

⁵⁹ Data Source: Liberty University.

⁶⁰ 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, 2013," Virginia Auditor of Public Accounts.

⁶¹ 2012 Real Property Tax Rates: Amherst County – \$0.61 per \$100 of assessed value, Appomattox County – \$0.65, Bedford County – \$0.52, Campbell County – \$0.52, and Lynchburg City – \$1.11.

⁶² 2012 Personal Property Tax Rates: Amherst County – \$3.45 per \$100 of assessed value, Appomattox County – \$3.35, 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.

⁶³ 2012 Motor Vehicle License Fees: Amherst County – \$25.00, Appomattox County – \$35.00, 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.

⁶⁴ 2012 Restaurant and Food Tax: Amherst County – 4.0%, Appomattox County – 8.0%, Bedford County – 4.0%, Campbell County – none, and Lynchburg City – 6.5%.

⁶⁵ 2009 Hotel and Motel Room Tax: Amherst County – 5.0%, Appomattox County – 5.0%, Bedford County – 7.0%, Campbell County – 2.0%, and Lynchburg City – 6.5%.

⁶⁶ One percent of retail sales in all localities.

⁶⁷ Comprised of water and sewer fees paid by Liberty University and its associated enterprises.

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.

	Amherst Co.	Appomattox Co.	Bedford Co.	Campbell Co.	Lynchburg City	TOTAL
University and Associated Enterprises	\$369		\$27,827	\$70,257	\$1,445,406	\$1,543,859
Employees	\$159,820	\$61,818	\$1,029,237	\$613,006	\$1,602,855	\$3,466,735
Students	\$171,981	\$122,612	\$380,443	\$286,345	\$753,425	\$1,714,805
TOTAL	\$332,169	\$184,430	\$1,437,506	\$969,608	\$3,801,686	\$6,725,399

Table 11: Estimated Real Property Tax Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2016-17

2. Personal Property Tax:

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

	Amherst Co.	Appomattox Co.	Bedford Co.	Campbell Co.	Lynchburg City	TOTAL
University and Associated Enterprises					\$306,512	\$306,512
Employees	\$146,138	\$40,245	\$555,761	\$803,041	\$1,119,629	\$2,664,814
Students	\$12,855	\$5,876	\$23,046	\$63,994	\$210,470	\$316,241
TOTAL	\$158,993	\$46,120	\$578,806	\$867,035	\$1,636,612	\$3,287,567

Table 12: Estimated Personal Property Tax Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2016-17

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.

	Amherst Co.	Appomattox Co.	Bedford Co.	Campbell Co.	Lynchburg City	TOTAL
Employees	\$10,304	\$6,027		\$56,919	\$93,987	\$167,237
Students	\$1,070	\$539		\$4,031	\$15,909	\$21,549
TOTAL	\$11,374	\$6,566		\$60,950	\$109,896	\$188,785

Table 13: Estimated Motor Vehicle License Fee Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2016-17

4. Restaurant Food Tax:

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

	Amherst Co.	Appomattox Co.	Bedford Co.	Campbell Co.	Lynchburg City	TOTAL
Employees	\$8,800	\$4,654	\$67,536		\$352,687	\$433,677
Students	\$16,633	\$7,790	\$41,434		\$640,161	\$706,019
Intensive Students	\$1,235	\$578	\$3,076		\$47,531	\$52,421
Visitors (employees)	\$823	\$561	\$5,141		\$14,131	\$20,656
Visitors (students)	\$1,760	\$2,184	\$5,451		\$74,808	\$84,203
Events					\$258,324	\$258,324
TOTAL	\$29,252	\$15,767	\$122,638		\$1,387,642	\$1,555,299

Table 14: Estimated Restaurant Food Tax Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2016-17



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.

	Amherst Co.	Appomattox Co.	Bedford Co.	Campbell Co.	Lynchburg City	TOTAL
Intensive Students	\$1,632	\$1,012	\$7,074	\$3,650	\$65,201	\$78,569
Visitors (employees)	\$1,287	\$438	\$11,245	\$2,864	\$20,760	\$36,595
Visitors (students)	\$2,751	\$1,706	\$11,923	\$6,153	\$109,900	\$132,433
Events					\$488,256	\$488,256
TOTAL	\$5,669	\$3,156	\$30,242	\$12,667	\$684,118	\$735,853

Table 15: Estimated Hotel and Motel Room Tax Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2016-17

6. Local Sales Tax:

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

	Amherst Co.	Appomattox Co.	Bedford Co.	Campbell Co.	Lynchburg City	TOTAL
Employees	\$12,953	\$5,574	\$86,013	\$77,145	\$168,322	\$350,007
Students	\$14,901	\$4,644	\$35,072	\$56,814	\$328,089	\$439,521
Intensive Students	\$565	\$176	\$1,329	\$2,153	\$12,436	\$16,659
Visitors (employees)	\$360	\$123	\$2,249	\$2,005	\$3,805	\$8,542
Visitors (students)	\$770	\$478	\$2,385	\$4,307	\$20,141	\$28,080
Events					\$89,479	\$89,479
TOTAL	\$29,549	\$10,995	\$127,048	\$142,424	\$622,271	\$932,287

Table 16: Estimated Local Sales Tax Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2016-17

7. Other Local Taxes:

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

	Amherst Co.	Appomattox Co.	Bedford Co.	Campbell Co.	Lynchburg City	TOTAL
University and Associated Enterprises			\$797	\$24,094	\$1,759,914	\$1,784,805
TOTAL			\$797	\$24,094	\$1,759,914	\$1,784,805

Table 17: Estimated Other Local Tax Revenue Impact of Liberty University on the Lynchburg MSA in Fiscal Year 2016-17

VIRGINIA

State Spending

In fiscal year 2016-17, Liberty University was directly responsible for contributing \$712.0 million in spending to Virginia's economy. As shown in Figure 16:

- Liberty expenditures on goods and services accounted for 9 percent of that total (\$67.3 million),⁶⁸
- Liberty expenditures on salaries and wages accounted for 36 percent (\$256.3 million),⁶⁹
- Liberty expenditures on capital construction projects accounted for 26 percent (\$186.9 million),⁷⁰
- Expenditures on goods and services by enterprises associated with Liberty accounted for 1 percent (\$6.9 million),⁷¹
- Expenditures on salaries and wages by enterprises associated with Liberty accounted for 2 percent (\$10.5 million),⁷²
- Employer expenditures for employee healthcare accounted for 3 percent (\$21.2 million),⁷³
- Student spending accounted for 18 percent (\$130.3 million),⁷⁴ and
- Visitor spending accounted for 5 percent (\$32.7 million),⁷⁵

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

\$712 Million in State Spending

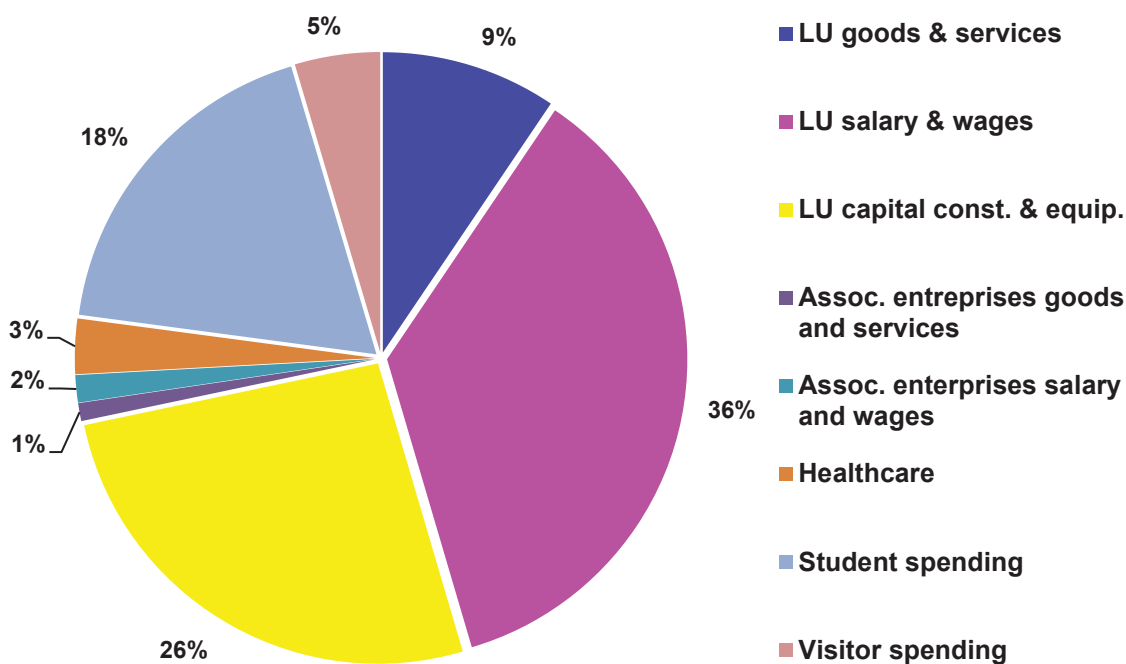


Figure 16: Distribution of Liberty University 2016-17 Spending within Virginia

⁶⁸⁻⁷⁴ Data source: Liberty University.

⁷⁵ 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 2017 Leisure Travel Profile to Virginia," Virginia Tourism Corporation).



Statewide Economic Impact

As shown in Table 18, our analysis indicates that this \$712.0 million in statewide spending was responsible for generating:

- **Statewide Employment:** In addition to directly providing 8,889 full time equivalent jobs within the state, economic activity associated with Liberty University also supported 4,130 full time equivalent jobs through second round effects, for a total statewide employment impact of 13,019 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$347.7 million in statewide labor income, economic activity associated with Liberty University also created \$198.6 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$546.3 million.
- **Economic Output:** In addition to directly generating \$705.1 million in statewide economic output, economic activity associated with Liberty University also generated \$634.2 million in statewide economic activity through second round effects, for a total statewide economic output impact of \$1.3 billion.
- **Fiscal Impact:** Economic activity attributable to Liberty University generated \$39.0 million in additional state and local tax revenue, and \$66.9 million in additional federal tax revenue, for a total fiscal impact of \$105.9 million.

Economic Impact:			
	Employment	Labor Income	Output
<i>First Round Direct Economic Activity</i>	8,889	\$347,651,272	\$705,067,650
<i>Second Round Indirect and Induced Economic Activity</i>	4,130	\$198,647,283	\$634,171,989
<i>Total, Direct, Indirect, and Induced Economic Activity*</i>	13,019	\$546,298,555	\$1,339,239,639
Fiscal Impact:			
	State and Local	Federal	Total
<i>Tax Revenue Generated</i>	\$38,995,869	\$66,914,021	\$105,909,890

Table 18: Estimated Total Economic Impact of Liberty University on Virginia in FY 2016-17

In the subsections that follow, we provide detailed analysis for each of the spending components listed in Figure 16.

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 2016-17, we employ the following assumption:

- Total university expenditures for goods and services within Virginia were \$67.3 million in fiscal year 2016-17.⁷⁶

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 582 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 \$27.9 million in additional labor income within the state.
- **Economic Output:** In addition to directly generating \$67.3 in economic activity, Liberty University's expenditures on goods and services also generated \$107.3 million in statewide activity through second round effects, for a total statewide output impact of \$174.5 million.
- **Fiscal Impact:** Liberty University's expenditures on goods and services generated \$4.6 million in additional state and local tax revenue, and \$7.6 million in additional federal tax revenue, for a total fiscal impact of \$12.2 million.

Economic Impact:			
	Employment	Labor Income	Output
<i>First Round Direct Economic Activity</i>	0	\$0	\$67,286,097
<i>Second Round Indirect and Induced Economic Activity</i>	582	\$27,855,553	\$107,255,184
<i>Total, Direct, Indirect, and Induced Economic Activity*</i>	582	\$27,855,553	\$174,541,281
Fiscal Impact:			
	State and Local	Federal	Total
<i>Tax Revenue Generated</i>	\$4,629,772	\$7,605,263	\$12,235,035

Table 19: Estimated Economic Impact of Liberty University Expenditures on Goods and Services on Virginia in FY 2016-17

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 2016-17:

- Total university expenditures on salaries and wages within Virginia were \$256.3 million in fiscal year 2016-17.⁷⁷

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 6,871 full time equivalent jobs, Liberty University's expenditures on salaries and wages also supported 1,396 full time equivalent jobs through second round effects, for a total statewide employment impact of 8,267 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$256.3 million in labor income, Liberty University's expenditures on salaries and wages also created \$64.0 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$320.3 million.
- **Economic Output:** In addition to directly generating \$256.3 in economic activity, Liberty University's expenditures on salaries and wages also generated \$199.7 million in statewide activity through second round effects, for a total statewide output impact of \$455.9 million.
- **Fiscal Impact:** Liberty University's expenditures on salaries and wages generated \$11.4 million in additional state and local tax revenue, and \$16.3 million in additional federal tax revenue, for a total fiscal impact of \$27.8 million.

Economic Impact:			
	Employment	Labor Income	Output
First Round Direct Economic Activity	6,871	\$256,258,600	\$256,258,600
Second Round Indirect and Induced Economic Activity	1,396	\$64,035,592	\$199,686,154
Total, Direct, Indirect, and Induced Economic Activity*	8,267	\$320,294,192	\$455,944,754
Fiscal Impact:			
	State and Local	Federal	Total
Tax Revenue Generated	\$11,426,129	\$16,347,896	\$27,774,025

Table 20: Estimated Economic Impact of Liberty University Expenditures on Salaries and Wages on Virginia in FY 2016-17

⁷⁷ Data Source: Liberty University.

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 2016-17, we employ the following assumption:

- Total university expenditures on capital construction and equipment within Virginia were \$186.9 million in fiscal year 2016-17.⁷⁸

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 1,023 full time equivalent jobs, Liberty University's expenditures on capital construction and equipment also supported 739 full time equivalent jobs through second round effects, for a total statewide employment impact of 1,762 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$54.8 million in labor income, Liberty University's expenditures on capital construction and equipment also created \$39.9 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$94.7 million.
- **Economic Output:** In addition to directly generating \$186.9 in economic activity, Liberty University's expenditures on capital construction and equipment also generated \$121.5 million in statewide activity through second round effects, for a total statewide output impact of \$308.5 million.
- **Fiscal Impact:** Liberty University's expenditures on capital construction and equipment generated \$8.9 million in additional state and local tax revenue, and \$20.8 million in additional federal tax revenue, for a total fiscal impact of \$29.7 million.

Economic Impact:			
	Employment	Labor Income	Output
First Round Direct Economic Activity	1,023	\$54,768,181	\$186,947,718
Second Round Indirect and Induced Economic Activity	739	\$39,949,037	\$121,527,289
Total, Direct, Indirect, and Induced Economic Activity*	1,762	\$94,717,219	\$308,475,008
Fiscal Impact:			
	State and Local	Federal	Total
Tax Revenue Generated	\$8,909,319	\$20,781,502	\$29,690,821

Table 21: Estimated Economic Impact of Liberty University Expenditures on Capital Construction Projects on Virginia in FY 2016-17

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 2016-17 by enterprises associated with Liberty University,⁷⁹ we employ the following assumption:

- Total associated enterprise expenditures for goods and services within Virginia were \$6.9 million in fiscal year 2016-17.⁸⁰

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 62 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 \$3.4 million in additional labor income within the state.
- **Economic Output:** In addition to directly generating \$6.9 million in economic activity, associated enterprise expenditures on goods and services also generated \$10.7 million in statewide activity through second round effects, for a total statewide output impact of \$17.6 million.
- **Fiscal Impact:** Expenditures on goods and services by enterprises associated with Liberty University generated \$0.5 million in additional state and local tax revenue, and \$0.8 million in additional federal tax revenue, for a total fiscal impact of \$1.2 million.

Economic Impact:			
	Employment	Labor Income	Output
First Round Direct Economic Activity	0	0	\$6,870,125
Second Round Indirect and Induced Economic Activity	62	3,394,728	\$10,732,002
Total, Direct, Indirect, and Induced Economic Activity*	62	3,394,728	\$17,602,127
Fiscal Impact:			
	State and Local	Federal	Total
Tax Revenue Generated	\$456,009	\$782,168	\$1,238,177

Table 22: Estimated Economic Impact of Associated Enterprise Expenditures on Goods and Services on Virginia in FY 2016-17

⁷⁹ 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; Ivy Hill, LLC; G & J Thomas, LLC; Morningstar, LLC; and Racquet Sports, LLC.

⁸⁰ Data Source: Liberty University.

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 2016-17 by enterprises associated with Liberty University⁸¹:

- Total associated enterprise expenditures on salaries and wages within Virginia were \$10.5 million in fiscal year 2016-17.⁸²

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 386 full time equivalent jobs, associated enterprise expenditures on salaries and wages also supported 57 full time equivalent jobs through second round effects, for a total statewide employment impact of 443 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$10.5 million in labor income, associated enterprise expenditures on salaries and wages also created \$2.6 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$13.1 million.
- **Economic Output:** In addition to directly generating \$10.5 million in economic activity, associated enterprise expenditures on salaries and wages also generated \$8.2 million in statewide activity through second round effects, for a total statewide output impact of \$18.7 million.
- **Fiscal Impact:** Expenditures on salaries and wages by enterprises associated with Liberty University generated \$0.4 million in additional state and local tax revenue, and \$0.5 million in additional federal tax revenue, for a total fiscal impact of \$0.9 million.

Economic Impact:			
	Employment	Labor Income	Output
First Round Direct Economic Activity	386	\$10,483,633	\$10,483,633
Second Round Indirect and Induced Economic Activity	57	\$2,619,719	\$8,169,233
Total, Direct, Indirect, and Induced Economic Activity*	443	\$13,103,352	\$18,652,866
Fiscal Impact:			
	State and Local	Federal	Total
Tax Revenue Generated	\$385,934	\$496,818	\$882,752

Table 23: Estimated Economic Impact of Associated Enterprise Expenditures on Salaries and Wages on Virginia in FY 2016-17

6. Employee Related Healthcare Expenditures:

In assessing the likely economic impact attributable to healthcare expenditures within Virginia in fiscal year 2016-17 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 \$21.2 million in fiscal year 2016-17.⁸³

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

- **Statewide Employment:** In addition to directly providing 139 full time equivalent jobs, employee related healthcare expenditures also supported 132 full time equivalent jobs through second round effects, for a total statewide employment impact of 271 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$14.6 million in labor income, employee related healthcare expenditures also created \$6.7 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$21.2 million.
- **Economic Output:** In addition to directly generating \$21.2 in economic activity, employee related healthcare expenditures also generated \$19.7 million in statewide activity through second round effects, for a total statewide output impact of \$40.9 million.
- **Fiscal Impact:** Employee related healthcare expenditures generated \$1.6 million in additional state and local tax revenue, and \$4.5 million in additional federal tax revenue, for a total fiscal impact of \$6.1 million.

Economic Impact:			
	Employment	Labor Income	Output
First Round Direct Economic Activity	139	14,556,983	\$21,158,124
Second Round Indirect and Induced Economic Activity	132	6,673,975	\$19,741,945
Total, Direct, Indirect, and Induced Economic Activity*	271	21,230,957	\$40,900,069
Fiscal Impact:			
	State and Local	Federal	Total
Tax Revenue Generated	\$1,615,447	\$4,458,522	\$6,073,969

Table 24: Estimated Economic Impact of Employee Related Healthcare Expenditures on Virginia in FY 2016-17

⁸³ Data Source: Liberty University.



7. Liberty University Student Spending:

Our assessment of the economic impact that spending by Liberty University students had on Virginia in fiscal year 2016-17 is predicated on the following assumptions:

- Liberty University students spent an average of \$732.25 per month in Virginia in fiscal year 2016-17.⁸⁴
- On average, Liberty University students reside in and around the Lynchburg MSA for 9.4 months out of the year.⁸⁵
- There are an estimated 18,241 Liberty University residential, commuter, or online students who reside in and around the Lynchburg MSA for at least a portion of the year.⁸⁶
- In addition to those residential, commuter, and online students who reside in and around the Lynchburg MSA, in fiscal year 2016-17 an additional 7,364 intensive online students physically attended classes for some number of days at Liberty University's campus.⁸⁷
- On average, these intensive online students made 2.8 visits to the campus in fiscal year 2016-17 and stayed 5.2 days each visit.
- Liberty University intensive online students spent an average of \$230.84 per visit in the Lynchburg MSA in fiscal year 2016-17.⁸⁸
- The distribution of Liberty University intensive online student's expenditures on various goods and services in fiscal year 2016-17 is comparable to tourism spending data developed by the Virginia Tourism Corporation for fiscal year 2016.⁸⁹
- 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 \$130.3 million in fiscal year 2016-17.

^{84, 85, 88} Data Source: Based on the findings from surveys of Liberty University students conducted in March 2010 and October 2015.

⁸⁶ Data Source: Liberty University. 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.

⁸⁷ Data Source: Liberty University.

⁸⁹ Data Source: "FY 2016 Leisure Travel Profile to Virginia," Virginia Tourism Corporation.



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 60 full time equivalent jobs, spending by Liberty University students also supported 1,029 full time equivalent jobs through second round effects, for a total statewide employment impact of 1,089 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$1.5 million in labor income, spending by Liberty University students also created \$47.3 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$48.7 million.
- **Economic Output:** In addition to directly generating \$129.4 in economic activity, spending by Liberty University students also generated \$146.1 million in statewide activity through second round effects, for a total statewide output impact of \$275.5 million.
- **Fiscal Impact:** Spending by Liberty University students generated \$8.3 million in additional state and local tax revenue, and \$12.4 million in additional federal tax revenue, for a total fiscal impact of \$20.7 million.

Economic Impact:			
	Employment	Labor Income	Output
<i>First Round Direct Economic Activity</i>	60	\$1,472,888	\$129,433,333
<i>Second Round Indirect and Induced Economic Activity</i>	1,029	\$47,255,086	\$146,069,003
<i>Total, Direct, Indirect, and Induced Economic Activity*</i>	1,089	\$48,727,974	\$275,502,335
Fiscal Impact:			
	State and Local	Federal	Total
<i>Tax Revenue Generated</i>	\$8,315,030	\$12,352,700	\$20,667,730

Table 25: Estimated Economic Impact of Liberty University Student Spending on Virginia in FY 2016-17



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 2016-17, is predicated on the following assumptions:

- Visitors to Liberty University students spent an average of \$215.03 per visit in and around the Lynchburg MSA in fiscal year 2016-17.⁹⁰
- 78 percent of Liberty University students had out-of-town visitors in fiscal year 2016-17.⁹¹
- 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.⁹²
- Visitors to Liberty University employees spent an average of \$190.86 per visit in and around the Lynchburg MSA in fiscal year 2016-17.⁹³
- 85 percent of Liberty University employees had out-of-town visitors in fiscal year 2016-17.⁹⁴
- On average, each employee receiving visitors had 3.7 visits during the year, each visit lasted 3.0 days, and involved 2.5 out-of-town visitors.⁹⁵
- There were 105,807 out-of-town visitors to Liberty University events in fiscal year 2016-17 and it is estimated that these visitors spent \$219.63 per person per over-night visit.⁹⁶
- The distribution of Liberty University visitor expenditures on various goods and services in fiscal year 2016-17 is comparable to tourism spending data developed by the Virginia Tourism Corporation for fiscal year 2014.⁹⁷
- Total expenditures by visitors to Liberty University students, employees, and events are estimated to be \$32.7 million in fiscal year 2016-17.

⁹⁰⁻⁹² Data Source: Based on the findings from surveys of Liberty University students conducted in March 2010 and October 2015.

⁹³⁻⁹⁵ Data Source: Based on the findings from surveys of Liberty University employees conducted in March 2010 and October 2015.

⁹⁶ Data Source: Event visitor data were provided by Liberty University and spending estimates were taken from "FY 2017 Leisure Travel Profile to Virginia," Virginia Tourism Corporation.

⁹⁷ Data Source: "FY 2016 Leisure Travel Profile to Virginia," Virginia Tourism Corporation.



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 411 full time equivalent jobs, spending by visitors to Liberty University also supported 133 full time equivalent jobs through second round effects, for a total statewide employment impact of 544 full time equivalent jobs.
- **Labor Income:** In addition to directly providing \$10.1 million in labor income, spending by visitors to Liberty University also created \$6.9 million in additional statewide labor income through second round effects, for a total statewide labor income impact of \$17.0 million.
- **Economic Output:** In addition to directly generating \$26.6 in economic activity, spending by visitors to Liberty University also generated \$21.0 million in statewide activity through second round effects, for a total statewide output impact of \$47.6 million.
- **Fiscal Impact:** Spending by visitors to Liberty University generated \$3.3 million in additional state and local tax revenue, and \$4.1 million in additional federal tax revenue, for a total fiscal impact of \$7.3 million.

Economic Impact:			
	Employment	Labor Income	Output
First Round Direct Economic Activity	411	\$10,110,987	\$26,630,020
Second Round Indirect and Induced Economic Activity	133	\$6,863,593	\$20,991,179
Total, Direct, Indirect, and Induced Economic Activity*	544	\$16,974,580	\$47,621,199
Fiscal Impact:			
	State and Local	Federal	Total
Tax Revenue Generated	\$3,258,229	\$4,089,152	\$7,347,381

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

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 generally recognized that 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 average 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 average annual wages across all Virginia occupations.⁹⁸ 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, based on their program of study. 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.⁹⁹ Using this tool, we are able to identify those occupations that Liberty University graduates are likely to enter, and restrict the second set of average wage estimates to encompass only those occupations.

⁹⁸ Data Source: Derived using 2016 occupational wage data from the Virginia Employment Commission.

⁹⁹ 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).

	High School	Associate	BA	Masters	Doctoral or Professional
Average Annual Virginia Wage: All Occupations	\$42,092	\$60,157	\$75,285	\$69,740	\$115,307
Average Annual Virginia Wage: Liberty U. Specific Occupations	N/A	\$69,208	\$78,271	\$80,122	\$95,712

Table 27: Median Annual Wages in Virginia by Degree Level

Table 28 provides additional data on the number of students that Liberty University graduated at each degree level in academic year 2016-17, and the number of those graduates who were in-state residents of Virginia.¹⁰⁰

	Associate	BA	Masters	Doctoral or Professional
All Graduates	1,273	8,214	7,564	1,154
In-State Graduates	205	2,132	1,715	199

Table 28: Liberty University 2016-17 Graduates by Degree Level

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 2016-17 graduates. The first three rows of Table 29, compare likely average wages for Liberty University graduates against the benchmark wage across all Virginia occupations for that degree level, and compute the difference (i.e., comparing average wages for Liberty University Associate and BA degree graduates to the average wage for high school graduates, and comparing average wages for Liberty University Master's and Doctoral degree graduates to the average 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 number of in-state graduates from Liberty University in 2016-17 to determine the "Total Annual Value of Increased Labor Productivity."¹⁰¹ We then further adjusted that figure to account for: 1) average labor force participation rates by degree level,¹⁰² and 2) selectivity bias, or the fact that individuals who pursue education tend to have higher than average innate abilities to start with,¹⁰³ 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 2016-17 is \$50.5 million.

¹⁰⁰ Data Source: State Council of Higher Education for Virginia.

¹⁰¹ Data Source: State Council of Higher Education for Virginia. Virginia residents are used instead of all graduates because of the greater probability that these graduates will live and work in Virginia after graduation.

¹⁰² Data Source: U.S. Bureau of Labor Statistics.

¹⁰³ 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.

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 2016-17 are active in the workforce. Based on analysis of the typical “work-life” of American men and women,¹⁰⁴ 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 2016-17 graduates. As shown in the bottom row of Table 29, that present value is estimated to be \$786.4 million.¹⁰⁵

	Associate	BA	Masters	PhD	Total
Average Annual Virginia Wage: Liberty U. Specific Occupations	\$69,208	\$78,271	\$80,122	\$95,712	
Benchmark Average Virginia Wage – All Occupations	\$42,092	\$42,092	\$75,285	\$75,285	
Differential	\$27,116	\$36,179	\$4,837	\$20,427	
Estimated Liberty In-State 2016-17 Graduates	205	2,132	1,715	199	
Total Annual Value of Increased Labor Productivity	\$5,558,780	\$77,133,628	\$1,715	\$4,064,973	\$86,759,096
Labor Force Participation	0.69	0.74	0.74	0.74	
Selectivity Bias	0.79	0.79	0.79	0.79	
Adjusted Total Annual Value of Increased Labor Productivity	\$3,030,091	\$45,092,319	\$1,003	\$2,376,383	\$50,499,796
Typical Work-life	26 years	26 years	21 years	21 years	
Discounted Present Value	\$46,834,574	\$696,969,018	\$17,965	\$42,580,769	\$786,402,325

Table 29: Value of Increased Labor Productivity Associated with Liberty University’s Graduates in 2016-17

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.

¹⁰⁴ See James Ciecka, 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.

¹⁰⁵ The discount rate used for this calculation was 3 percent and is a rounded approximation of the United States 30 Year Bond Yield.



Statewide Economic Impact

We employ the following assumption in assessing the likely economic impact attributable to the human capital embodied in Liberty University's 2016-17 Virginia resident graduates:

- The economic value of the human capital that Liberty University produced in 2016-17 was \$50.5 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 2016-17 graduates would generate 361 full time equivalent jobs in the Virginia.
- **Labor Income:** Second round effects attributable to the increased labor productivity embodied in Liberty University's 2016-17 graduates would generate \$16.8 million in additional labor income in the Virginia.
- **Economic Output:** In addition to the \$50.5 million in increased human capital, second round effects attributable to the increased labor productivity embodied in Liberty University's 2016-17 graduates would generate \$52.6 million in additional economic output in the state, for a total increase of \$103.1 million.
- **Fiscal Impact:** Second round effects attributable to the increased labor productivity embodied in Liberty University's 2016-17 graduates would generate \$2.9 million in additional state and local tax revenue, and \$4.3 million in additional federal tax revenue, for a total fiscal impact of \$7.2 million.

Economic Impact:			
	Employment	Labor Income	Output
First Round Direct Economic Activity	0	\$0	\$50,499,796
Second Round Indirect and Induced Economic Activity	361	\$16,757,789	\$52,569,819
Total, Direct, Indirect, and Induced Economic Activity*	361	\$16,757,789	\$103,069,615
Fiscal Impact:			
	State and Local	Federal	Total
Tax Revenue Generated	\$2,942,061	\$4,281,808	\$7,223,869

Table 30: Estimated Economic Impact of the Increased Labor Productivity Associated with Liberty University's Graduates in 2016-17

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.

Service and Volunteerism

Consistent with its core mission, Liberty University is a very service oriented institution. In 2016-17 through its LU Send Now program, among other efforts it deployed teams of students and faculty to Louisiana to help flood victims, to North Carolina and South Carolina to aid in cleanup efforts in the wake of Hurricane Mathew, to Georgia to assist storm victims, to Mississippi to aid in cleanup efforts in the wake of a major tornado, and to Peru to help distribute food, water, and other supplies to flood victims. Liberty University students also raised \$75,000 to construct 25 wells and provide clean water to Gran Kru County in Liberia. And students from Liberty University's School of Aeronautics' Aviation Maintenance Technician program traveled to Florida to assist in repairing aircraft for Missionary Flights International.

Closer to home, in September 2016 Liberty University partnered with the American Red Cross to host the largest one-day blood drive in central Virginia in honor of the victims of the Pulse Nightclub shooting in Orlando Florida. In April 2017, 1,600 Liberty University Students participated in the university's first Serve Lynchburg event where students provided a day of service to cleaning up local parks and cemeteries, helping out at daycare centers, and assisting at a variety of nonprofit organization. While in July 2017 the Liberty College of Osteopathic Medicine class of 2021 participated in LUCOM Service Day where they hosted 120 children from the local Boys and Girls Club and Jubilee Family Center for a day of intramural sports events.

More generally, 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 local community 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. In 2016-17 alone, Liberty University students provided 228,723 hours of volunteer service to the Greater Lynchburg community.¹⁰⁶ Furthermore, this spirit of volunteerism also extends to Liberty University's faculty and staff. In 2016-17, Liberty University faculty and staff also provided an estimated 168,134 hours of volunteer service to the Lynchburg community.¹⁰⁷

If one were to quantify the value of this volunteer service by Liberty University students, faculty, and staff at simply the current minimum wage, their total annual contribution to the Lynchburg MSA would be approximately \$2.9 million in 2016-17.

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."¹⁰⁸ Second, it has provided GLTC with additional resources that have enabled it to upgrade its bus fleet and services. In fiscal year 2016-17, Liberty University paid GLTC nearly \$3.0 million for transportation services.¹⁰⁹

Economic Revitalization

In an effort to grow its endowment fund, Liberty University has also made significant property investments in the Lynchburg MSA and among these are two shopping centers and one regional mall. In 2008, Liberty acquired the Plaza shopping center and invested \$500,000 to upgrade and improve the property.¹¹⁰ In 2010, Liberty acquired Candler's Station shopping center, and after similar improvements it is anticipated that Candler's Station will provide the university with double digit annual return on its investment, while also providing a continuing stream of tax revenue for the city.¹¹¹ Then, in 2017 Liberty University acquired the River Ridge Mall. The River Ridge Mall is the Lynchburg MSA's only mall and had deteriorated to the point that it was on the verge of closing. Liberty brought in a nationally recognized team of shopping center professionals and architects to redesign and repurpose the property to create a cohesive shopping, dining and entertainment destination and it is now anticipated that property will also appreciate in value and generate an increase in local sales tax revenue.

Freedom Aviation

Like the Plaza and Candler's Station shopping centers, Freedom Aviation is a private enterprise that is associated with Liberty University. Freedom Aviation is the Fixed Base Operator (FBO) at the Lynchburg Regional Airport where it provides a broad range of services to the general aviation community that include hangar services, maintenance, flight instruction, charter flights, aircraft rentals, and fuel sales. In addition to generally contributing to the economic stability and growth of Lynchburg's only commercial airport, Freedom Aviation also enjoys the unique advantage of being associated with Liberty University's School of Aeronautics. Liberty's School of Aeronautics plays a critical role in meeting Virginia's demand for aviation personnel. In academic year



2016-17, there were a total of 217 degree-level graduates from aviation programs in Virginia colleges and universities.¹¹² Of that total, Liberty University's School of Aeronautics accounted for 201, or 93 percent.¹¹³ This association also better positions Freedom Aviation to attract aeronautical conferences and events to Lynchburg, such as the 2016 Lynchburg Regional Airshow, which featured the Navy's Blue Angels and drew a large number of out-of-town spectators.

¹⁰⁸ "GLTC looking to expand service to more areas," Lynchburg News and Advance, November 1, 2007.

¹⁰⁹ Data Source: Liberty University.

^{110, 111} "At Liberty, the future is in land," Valley Business Front, April 2010.

^{112, 113} Data Source: State Council of Higher Education for Virginia.

Recreational and Cultural Facilities

Liberty University has also contributed to the Lynchburg MSA's quality of life by significantly enhancing its recreational and cultural opportunities. The university's LaHaye Ice Center, Liberty Mountain Snowflex Center, Tower Theater, Liberty Mountain Skate Park, and the Center for Music and Worship Arts' Concert Hall are all open to the public.



The LaHaye Ice Center, which was newly renovated in 2015, attracts more than 100,000 people per year through a variety of different events and is often in use up to 19 hours a day. In addition to providing a home for Liberty's figure skating, synchronized skating, and men's and women's hockey teams, the LaHaye Ice Center is also used to host a variety of community events such as youth hockey leagues, figure skating programs, public sessions, private events, and Winterfest (a nationally acclaimed youth event held at Liberty University each year). In describing the positive impact the facility has had on the community, 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 have existed, of course, had not Liberty constructed its rink and opened it to the public.¹¹⁴

The Liberty Mountain Snowflex Center opened in August of 2009 and is North America's only Snowflex synthetic ski slope. In 2013, the university also installed a separate 525 foot long tubing slope at the facility to accommodate the growing popularity of this alternative winter sport. The Snowflex Center 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.¹¹⁵

Echoing this perspective, a post on PennLive even went so far as to advise northeastern residents to "head south to Lynchburg, Virginia" to get a jump on the ski season when their own regional resorts do not yet have snow.¹¹⁶



¹¹⁴ "Hockey hopefuls heat up Hill City Ice," Lynchburg News and Advance, March 17, 2010.

¹¹⁵ See <http://www.virginia.org/site/description.asp?AttrID=60682>

¹¹⁶ See http://www.pennlive.com/entertainment/index.ssf/2014/10/head_south_to_ski_sooner_in_ly.html



The Tower Theater opened in 2010 and by 2014 was voted the number one entertainment venue in the Readers Choice 2014 Best of the Lynchburg Area awards. It is home to the Alluvian Stage Company and Liberty University's Department of Theater Arts. The Tower Theater is a 640 seat facility that boasts a Broadway-style fly tower and professional rigging system. The Tower Theater routinely stages productions such as *Hair Spray*, *Mary Poppins*, *Peter Pan*, and *Les Miserables*, and is also used to host summer youth and high school drama camps.

In 2011 Liberty University also opened an 8,600 square foot skate park in the Candler's Station Shopping Center. The facility is available to the public and features a foam pit for learning aerials, a half pipe, rails, boxes and an observation deck. The park can be used for skateboards, BMX bicycles, and rollerblades.

Finally, the Center for Music and Worship Arts' Concert Hall opened in 2016. The Concert hall has just under 1,600 seats, and boasts a retractable telescoping choir loft that can also be used to provide an additional 300 seats, while the orchestra pit can be raised to serve as an extension of the stage. The Concert Hall is also equipped with the Meyer Sound Constellation Acoustic System that can be used to stage both acoustic and electronic presentations. This allows the Concert Hall to be used for a wide variety of performances, including classical orchestras, praise and worship, jazz and pop music shows, musical theater, and opera.

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,¹¹⁷ along with data provided by Liberty University on out-of-town attendees to university events,¹¹⁸ we estimate that in fiscal year 2016-17, Liberty University:

- employees had approximately 31,626 overnight out-of-town visitors,
- resident and commuter students had approximately 89,540 overnight out-of-town visitors,
- intensive online students visited Liberty University's Lynchburg campus approximately 20,619 times, and
- facilities and events attracted 105,807 overnight out-of-town visitors.

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 2016-17 out-of-town visitors to Liberty University employees, students, facilities, and events generated approximately 156,496 hotel room nights in the Lynchburg MSA. Those hotel room nights in turn were associated with approximately \$15.0 million in hotel revenue within the Lynchburg MSA.¹¹⁹

¹¹⁷ Data Source: Based on the findings from surveys of Liberty University students and employees conducted in March 2010 and October 2015.

¹¹⁸ Data Source: Liberty University.

¹¹⁹ Data Source: Data on 2017 room rates are taken from "FY 2018 Annual Lodging Report," Virginia Tourism Corporation.

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.¹²⁰

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 2012 and 2022 the region will experience approximately 3,707 job openings each year.¹²¹ 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 Office and Administrative Support (463 per year), Sales (449 per year), Food Preparation and Serving (393 per year), Production (259 per year), and Healthcare Practitioners and Technical (250 per year) occupations.



¹²⁰ 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.

¹²¹ Data Source: Virginia Employment Commission. The Lynchburg MSA is comprised of the counties of Amherst, Appomattox, Bedford, and Campbell, and the City of Lynchburg.

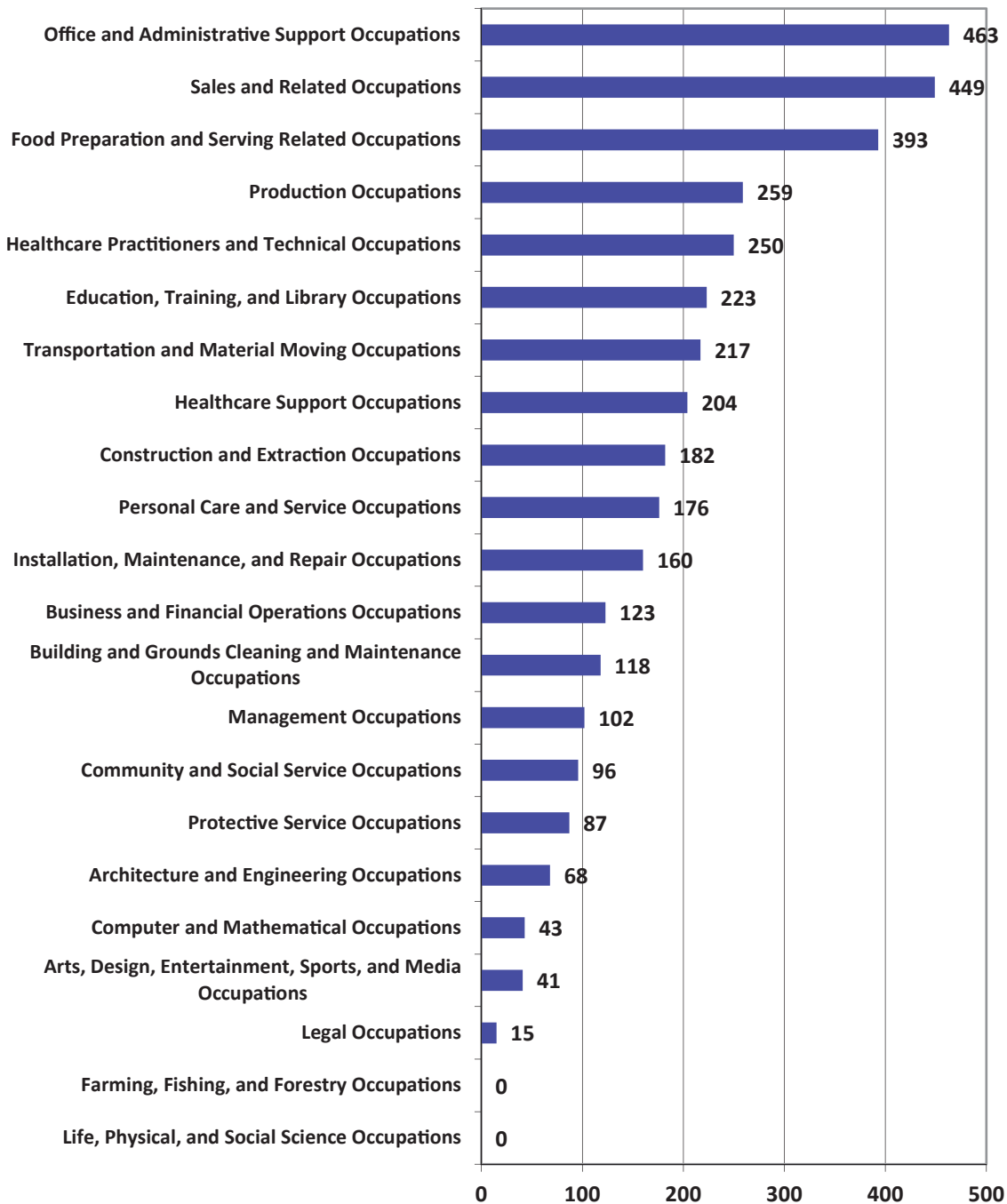


Figure 17: Projected Average Annual Openings in the Lynchburg MSA by Major Occupation Category – 2012 to 2022¹²²

¹²² Data Source: Virginia Employment Commission. The Lynchburg MSA is comprised of the counties of Amherst, Appomattox, Bedford, and Campbell, and the City of Lynchburg.



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.¹²³ 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.¹²⁴

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 2015-16 by detailed program area. For purposes of this analysis, however, we restrict that dataset to only the proportion of graduates that were reported to be in-state Virginia residents.

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, Liberty University is meeting a very substantial portion of the Lynchburg MSA’s critical workforce needs.

¹²³ 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.

¹²⁴ More formally, the demand for education and training programs is calculated as:
 $DCIP_i = \sum DCipji$

Where,

$$DCipji = (SOC_j)(GCIP_i / \sum GCipij)$$

and,

$DCIP_i$ = the annual demand for instructional program i

$\sum DCipji$ = the annual demand for instructional program i across all occupation(s) j

SOC_j = the projected annual openings for occupation j

$GCIP_i$ = Liberty University graduates from instructional program i

$\sum GCipij$ = Liberty University graduates from all instructional program(s) i related to occupation j



Academic Program	Estimated Annual Supply of In-State Graduates in 2015-16	Estimated Annual Occupation-Driven Demand for Graduates 2012-2022	% of Demand Met
Business Administration and Management, General.	636	79	100%
Psychology, General.	421	6	100%
Counseling Psychology.	185	6	100%
Registered Nursing/Registered Nurse.	153	63	100%
Elementary Education and Teaching.	148	37	100%
Accounting.	117	20	100%
Special Education and Teaching, General.	72	9	100%
Educational Leadership and Administration, General.	63	7	100%
Sport and Fitness Administration/Management.	45	12	100%
Public Health, General.	37	7	100%

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

Academic Program	Estimated Annual Supply of In-State Graduates in 2015-16	Estimated Annual Occupation-Driven Demand for Graduates 2012-2022	% of Demand Met
Counselor Education/School Counseling and Guidance Services.	36	5	100%
Legal Assistant/Paralegal.	35	4	100%
Speech Communication and Rhetoric.	33	3	100%
Management Information Systems, General.	31	4	100%
Graphic Design.	21	4	100%
Political Science and Government, General.	14	6	100%
Law.	10	10	100%
International Relations and Affairs.	8	6	100%
Student Counseling and Personnel Services, Other.	8	5	100%
Electrical and Electronics Engineering	6	4	100%

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

Academic Program	Estimated Annual Supply of In-State Graduates in 2015-16	Estimated Annual Occupation-Driven Demand for Graduates 2012-2022	% of Demand Met
Kindergarten/Preschool Education and Teaching.	6	5	100%
Secondary Education and Teaching.	23	26	87%
Computer and Information Sciences, General.	7	10	66%
Business/Commerce, General.	48	79	61%
Digital Communication and Media/Multimedia.	4	6	61%
English Language and Literature, General.	13	26	51%
History, General.	12	32	36%
Biology/Biological Sciences, General.	7	26	28%
Music, General.	6	26	23%
History Teacher Education.	9	43	21%

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

Academic Program	Estimated Annual Supply of In-State Graduates in 2015-16	Estimated Annual Occupation-Driven Demand for Graduates 2012-2022	% of Demand Met
Computer and Information Systems Security/Information Assurance.	1	5	19%
Marketing/Marketing Management, General.	3	16	17%
Information Technology.	2	14	17%
Computer Software Engineering.	2	13	14%
Social Sciences, General.	4	32	12%
Family and Consumer Sciences/Human Sciences, General.	3	26	12%
Industrial Engineering.	2	13	12%
Mathematics, General.	3	26	11%
Spanish Language and Literature.	3	26	10%
Teaching English as a Second or Foreign Language/ESL Language Instructor.	7	85	9%

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

Academic Program	Estimated Annual Supply of In-State Graduates in 2015-16	Estimated Annual Occupation-Driven Demand for Graduates 2012-2022	% of Demand Met
Computer Engineering, General.	1	13	8%
Junior High/Intermediate/Middle School Education and Teaching.	2	43	5%
Chemistry, General.	1	26	3%

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



CONCLUSION

This report assesses the economic contribution that Liberty University made to the Lynchburg MSA and the state of Virginia in academic year 2016-17. What that analysis has shown is that Liberty University is one of Virginia's most successful and fastest growing institutions of higher education. In 2016-17, Liberty had an unduplicated annual headcount of 101,951 students, making it the largest institution of higher education in Virginia and one of the largest in the country. Between 1992 and 2017, the university's fall enrollment increased from 8,500 to 75,044, an increase of 68,544 students or 783 percent. In contrast, over that same period Virginia's other four-year private non-profit colleges and universities grew by 42 percent, and Virginia's four-year public colleges and universities grew by 34 percent.

In 2016-2017, Liberty University and its auxiliary enterprises were also Lynchburg's largest employer, providing jobs for 6,797 individuals in the Lynchburg MSA and over 9,210 worldwide.¹²⁵ Moreover, Liberty's rapid employment growth has provided much needed stability to a regional economy that has experienced uneven employment growth in recent years. To cite one example of this stabilizing influence, had it not been for Liberty University, we estimate that the Lynchburg MSA's unemployment rate would have been approximately 9.9 percent in 2017, instead of 4.3 percent.

In addition, Liberty University continues to invest in additional facilities and expand its program offerings. The university is currently engaged in an almost \$1 billion dollar expansion and renovation of its facilities. That building program has included construction of a new Center for Medical and Health Sciences building, the state of the art Jerry Falwell Library, the LaHaye Student Union, Residential Commons I, Science Hall, Kamphuis Field softball stadium, the Center for Music and Worship Arts, Demoss Campus Center, Residential Commons II, Indoor Track Complex, Natatorium, Liberty Athletics Center, Indoor Football Practice Facility, an expanded Equestrian Center, and the Freedom Tower.



Our analysis has also shown that Liberty University makes a major economic contribution to its community. In 2016-17, direct spending in the Lynchburg MSA by the university, its associated enterprises, students, and visitors totaled \$618.3 million. Our analysis shows that this \$618.3 million in regional spending was responsible for generating over \$1 billion in economic activity in the Lynchburg MSA, which means that every \$1.00 of Liberty University's net local spending generated \$1.67 within the broader regional economy.

In addition, Liberty University's 2016-17 regional spending was also responsible for supporting a total of 11,919 jobs within the Lynchburg MSA and generating \$434.3 million in labor income. Given that the location of most of this employment was in the City of Lynchburg, and that total employment in the City of Lynchburg was 51,174 in 2017, this means that approximately one out of every four jobs in the City of Lynchburg that year was 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, employees, students, and visitors contributed approximately \$15.2 million in tax revenue to the Lynchburg MSA in 2016-17. Focusing exclusively on the city of Lynchburg, where the majority of Liberty University's campus is physically located, the university directly or indirectly generated approximately \$10.0 million in tax revenue for the city. More specifically, Liberty University directly or indirectly accounted for approximately: 7 percent of the city's total Real Property Tax revenue, 12 percent of its Personal Property Tax revenue, 6 percent of its Motor Vehicle License Fee revenue, 10 percent of its Restaurant Food Tax revenue, 31 percent of its Hotel and Motel Room Tax revenue, and 4 percent of its local Sales Tax revenue.

From the perspective of Virginia as a whole, in 2016-17 Liberty University, along with its associated enterprises, students, and visitors were responsible for contributing \$712.0 million dollars in direct spending to the state. Our analysis indicates that this \$712.0 million in statewide spending was responsible for generating over \$1.3 billion in economic activity, which means that every \$1.00 of Liberty University's state spending ultimately generated \$1.88 in overall economic activity within the state. In addition, those expenditures were responsible for supporting a total of 13,019 jobs in the state, creating \$546.3 million in labor income, and generating \$105.9 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 2016-17 graduates carried with them into Virginia's workforce was approximately \$50.5 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 approximately \$786.4 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, in 2016-17 Liberty partnered with the American Red Cross to host the largest one-day blood drive in central Virginia, held its first Serve Lynchburg event where 1,600 students cleaned up local parks and cemeteries, helped out at daycare centers, and assisted at a variety of nonprofit organization, and the Liberty College of Osteopathic Medicine class of 2021 participated in LUCOM Service Day where they hosted 120 children from the local Boys and Girls Club and Jubilee Family Center for a day of intramural sports events. In total, Liberty students, faculty, and staff contributed at least \$2.9 million in volunteer services to the Lynchburg MSA in 2016-17.



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. This agreement has provided GLTC with additional resources -- \$3.0 million in 2016-71 alone -- that have enabled it 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. In 2010, it acquired Candler's Station shopping center and made similar improvements to that property. Then in 2017 it acquired the River Ridge Mall. The River Ridge Mall is the Lynchburg MSA's only mall and had deteriorated to the point that it was on the verge of closing. Liberty brought in a nationally recognized team of shopping center professionals and architects to redesign and repurpose the property and it is now anticipated that the River Ridge Mall will once again be a successful regional enterprise and a source of increased local tax revenue.

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; the Liberty Mountain Snowflex Center, North America's only Snowflex synthetic ski slope; the Tower Theater, and the Liberty Mountain Skate Park, all of which are open to the public.

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 2016-17, Liberty University's out-of-town visitors generated approximately 156,496 hotel room nights in the Lynchburg MSA and those hotel room nights in turn were associated with approximately \$15.0 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 graduates in Psychology; Counseling; Registered Nursing; Elementary Education; Special Education and Teaching; Educational Leadership and Administration; Sports and Fitness Administration; Public Health; and School Counseling and Guidance Service, along with many other disciplines.

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 Virginia.