

OFFICE OF INSTITUTIONAL RESEARCH

THE ECONOMIC IMPACT OF  
JAMES MADISON UNIVERSITY  
ON THE  
CITY OF HARRISONBURG AND  
ROCKINGHAM COUNTY

September 2002



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# **THE ECONOMIC IMPACT OF JAMES MADISON UNIVERSITY ON THE CITY OF HARRISONBURG AND ROCKINGHAM COUNTY**

## **EXECUTIVE SUMMARY**

James Madison University continues its significant economic and cultural presence within the City of Harrisonburg and Rockingham County. In the 2000-01 academic year, JMU enrolled around 15,000 students, employed over 2,000 people in full-time positions, and had a total operating budget of \$211 million. With analytical support from the Virginia Employment Commission, a study of spending in the local community by students, staff and the institution found that:

- Over \$278 million dollars in the local economy were related to spending by students, employees, and University operations. Over \$195 million in direct expenditures generated an additional \$83 million that was respent in the community by businesses and their employees. These conservative estimates do not include dollars generated by almost \$28 million in construction expenditures per year. The analysis also could not include spending by parents and visitors that fill local hotels and restaurants for events like Homecoming, Parents Day, and December and May Commencements.
- Total employment related to the University, including its employees, was between 4,422 and 5,382 full-time equivalent jobs. This represents between roughly seven and nine percent of all employment in the area. Between 1,763 and 2,723 jobs outside the institution were attributed to this spending. For every \$1 million spent by students, employees and the institution, between 12.5 and 17.4 jobs were created in the community.

JMU could receive an additional \$99.9 million over the next six years for construction of three new buildings, two major renovations, and two infrastructure projects. This fall voters will decide if bonds for these projects will be issued. Bonds approval will have significant impact on the City of Harrisonburg and Rockingham County.

The University also had significant cultural and other impact upon the community in ways that are difficult to quantify. While not the focus of this report, other benefits to the community include:

- Public events of culture, art, music and education.
- Volunteer labor of students engaged in field placement and practicum with local schools, health care centers, human service agencies and businesses.
- The quality of the local labor pool created by college students available for employment.

Economic impact on the community depends in part upon how much local vendors and their employees can also meet their purchasing needs within the community. Economic benefits related to James Madison University can also grow if local businesses can find local suppliers. Respending dollars within the City of Harrisonburg and Rockingham County means more jobs for the community.

# **THE ECONOMIC IMPACT OF JAMES MADISON UNIVERSITY ON THE CITY OF HARRISONBURG AND ROCKINGHAM COUNTY**

## **INTRODUCTION**

James Madison University (JMU) enjoys a significant presence within the City of Harrisonburg and Rockingham County. Around 15,000 students attend this major institution of higher education. JMU enriches the local community through its educational, cultural, research, and public service activities. Since 1908, it has been a stable source of jobs and income for thousands of people and hundreds of businesses.

This study describes some of the economic benefits generated in the local community by JMU. It estimates dollars spent in the community and employment generated by this spending for the fiscal year ending June 30, 2001 (FY2001). Only operating and student expenditures are used in the analysis. Capital expenses and expenses by parents and other visitors are not included.

This study is one of several approaches to examining community impact. It is quantitative and does not address contributions to the community from JMU's research, cultural and public service activities. Likewise, the demand created for public services and the additional tax revenues generated to pay for them are not addressed here. The University does recognize that its presence creates challenges as well as opportunities to the City of Harrisonburg and Rockingham County.

The Office of Institutional Research published the last significant study of JMU's economic impact in June 1996. Today's study employs essentially the same methodology. Expenditure patterns have been updated with the most current data and spending data reconcile with official University financial statements.

To review a history of economic impact studies at JMU since 1975, be sure to see "The Economic Impact of James Madison University on the Harrisonburg/Rockingham County Area and the Commonwealth of Virginia." Published by the Office of Institutional Research in June 1996, this study may be found on-line at:

<http://www.jmu.edu/instresrch/resrchstud/economic/econimpt.htm>

## **METHODOLOGY**

A wide variety of methodologies could be used to analyze the economic impact of an institution like JMU. Methods vary in complexity and objectivity. The Office of Institutional Research decided that the methodology for this study should, within reason and available resources:

- Maximize use of existing data and objective external resources;
- Use data that reconcile with official University financial statements;
- Minimize complexity to enable replication; and
- Minimize change from past studies to enable historical comparisons.

During Spring 2002, the Office of Institutional Research (OIR) reviewed economic impact analyses by other higher education institutions. Twenty out-of 22 reviews included an input/output model similar to the method used by OIR studies in 1992 and 1996. Several institutions specifically noted the IMPLAN (Impact Analysis for Planning) model that OIR also used for its last two analyses. The Virginia Employment Commission (VEC) provided IMPLAN services in the past and the same free service was still available. Based upon IMPLAN's credibility, availability and past use, the decision to use it again was made. Inputs for the model were determined by guidelines similar to those used in the past (the New York Model). These inputs were:

- spending by the institution,
- employees, and
- students.

### **IMPLAN**

The IMPLAN model receives input about spending within a specific geographic area by the institution. Then, the model outputs how much additional spending and jobs are created through the multiplier effect. For example, this model takes the dollars spent by employees at the local grocery store, calculates how much money is respent by store employees in the community from their wages, and calculates how many jobs this respending creates. While this may seem simple on the surface, the IMPLAN tool is built upon an array of econometric data at the county level. IMPLAN can also receive input from many different kinds of spending, e.g., large industry, small business, or people of high or low income. In past studies as well as this one, the Virginia Employment Commission provided IMPLAN services to the University for this part of the project; receiving data from the University and generating results in terms of dollars and jobs multiplied by the spending.

### **The New York Model**

OIR studies in 1992 and 1996 also used the "New York Model" as a guide for categorizing University spending into the IMPLAN model. This model was developed and tested by several colleges in New York, and had a very sensible method for collecting data on the expenditures of students, employees, and the University. With few exceptions, the same guidelines for transforming University data into these three spending categories were used for this study. Once determined, the spending data was sent to the VEC for final analysis.

### **Auxiliary Expenditures and Student Spending**

University operating expenses are split between educational and general (E&G) and auxiliary enterprises. E&G expenditures directly support the academic mission of the institution. Auxiliary enterprises support the academic mission by providing students with convenient access to housing, dining, books, supplies and other basic goods and services. If auxiliary services were not provided by the University, students would need to look to the community for them. In varying degrees, all students split their expenses between the community and JMU auxiliaries. For example, 43 percent of Fall 2000 full-time undergraduates lived on campus. They spent through University auxiliary enterprises for housing and dining. But they also spent some unknown amount in the community for food, transportation, entertainment, clothing and etc. Student spending is so dynamically diverse that splitting student expenditures between auxiliaries (as a University expense into IMPLAN) and the community (as a student expense into IMPLAN) is extremely complex and fraught with potential for error.

The New York model resolves this complexity by treating all student non-educational spending (food, books, housing, entertainment, and etc.) as if they were provided by the community, even if these items were purchased on the campus. Non-educational items from the student financial aid budget are used to estimate total student expenditures. This student expenditure estimate is entered into the IMPLAN model to generate a total estimate of full-time equivalent (FTE) jobs in the community, including JMU employees in auxiliary enterprises. Then, the actual number of JMU auxiliary FTE employees is subtracted from the IMPLAN total FTE employees to yield the number of non-JMU jobs created in the community.

## **EXPENDITURES**

### **Total University Related Expenditures**

Total direct expenditures in the City of Harrisonburg and Rockingham County by students, employees and the University were \$195,006,479 in FY2001. Table 1 shows these estimates. These are the figures sent to the Virginia Employment Commission (VEC) for input to the IMPLAN model.

**Table 1**  
**University Related Direct Expenditures in the**  
**City of Harrisonburg and Rockingham County**  
**Fiscal Year 2001**

Students	\$146,789,522
Employees E&G	\$34,690,617
University Non-personal E&G	\$13,526,340
<b>Total</b>	<b>\$195,006,479</b>

### **Student Expenditures**

The student budget multiplied by the number of full-time equivalent (FTE) students produced the amount of student expenditures. The student budget is used by the Office of Financial Aid and outlines how much each student needs for tuition, fees, room, board, books, transportation, and miscellaneous items. Tuition and academic fees were removed from the budget. A portion of non-academic student fees are used to support auxiliary scholarships and to pay overhead to the institution for auxiliary enterprises, a.k.a., indirect costs. Money for both of these items eventually pass through to E&G expenditures. So, they were also subtracted from the total expenses of non-academic student spending to prevent their double counting.

The Fall 2000 term census found a total of 14,961 students enrolled in classes on the JMU campus. This included 13,765 FTE undergraduates and 523 FTE graduate students. The non-academic budgets were \$10,978 for undergraduates and \$9,140 for graduate students. Total student spending, less auxiliary scholarships and indirect costs, came to \$146,789,522.

### **Employee Expenditures**

Only expenditures of non-student employees paid through educational and general (E&G) funds were included. As noted in the methodology, above, all auxiliary employee spending was removed

from the IMPLAN input. Payroll for students was also removed from employee expenditures because it was already captured in student expenditures. The portion of employee disposable income spent locally on non-housing items (64.6%) was determined as in past years from "*Sales & Marketing Management*, September 2001, Part Two, 2001 Survey of Buying Power and Media Markets." Also consistent with past analyses, expenditures for home mortgages were considered non-local and rental expenditures were local. The portion of employees renting (35.3%) and the average amount of rent (\$517 per month) were obtained from the U.S. Census Bureau. Because retirement related fringe benefits are eventually spent, a conservative estimate of these benefits spent in the community was also included. About 60 percent of University employees retire locally. This study included 50 percent of retirement related fringe benefits and did not include any estimate of return on the retirement investment. Consistent with past analyses, \$1,000 per year was estimated for local expenditures made by employees not living in the community.

In fall 2000, JMU had 2,017 full-time employees. An additional 642 full-time equivalent (FTE) employees were paid through part-time work for a total FTE of 2,659 employees. The expenditures of 1,483 full-time employees and 319 FTE employees working part-time were included; a total FTE of 1,802 E&G, non-student employees. 1,429 of these FTE employees lived within the community. These local residents and University retirees spent an estimated \$31,187,229 within the community on retail goods and services, housing not included. Rental expenses by local employees were estimated to be \$3,130,838. Employees not living locally spent an estimated \$372,550 within the community. Total employee spending in the community was estimated at \$34,690,617.

### **Institutional Expenditures**

Vendor payment data from the University's financial system was used to determine the percentage of payments made to local vendors. Only education and general expenditures for non-personal costs were included. Also, according to Trigon the University's health insurance company, 85 percent of all premiums return as payments to health care providers. This study assumed that 75 percent of employee insurance premiums return to local health care providers.

An estimated \$9,494,434 was spent by the University purchasing goods and services in the community. An additional \$4,031,906 passed through to local health care providers from insurance premiums paid by the institution. Total institutional spending in the local economy was estimated at \$13,526,340.

## **RESULTS**

Over \$278 million dollars in the local economy were related to spending by students, employees, and University operations. Over \$195 million in direct expenditures generated an additional \$83 million that was respent in the community by businesses and their employees. These conservative estimates do not include dollars generated by almost \$28 million in construction expenditures per year. The analysis also could not include spending by parents and visitors that fill local hotels and restaurants for events like Homecoming, Parents Day, and December and May Commencements.

Total employment related to the University, including its employees, was between 4,422 and 5,382 full-time equivalent jobs. This represents between roughly seven and nine percent of all employment in the area. Between 1,763 and 2,723 jobs outside the institution were attributed to this spending.

For every \$1 million spent by students, employees and the institution, between 12.5 and 17.4 jobs were created in the community.

**Direct, Indirect and Induced Benefits**

Table 2 shows direct, indirect and induced benefits of University related spending. The values in the column “Direct” are total University related expenditures (from Table 1) and University employment. The figure of 2,659 direct FTE jobs created includes 675 JMU auxiliary employees. Indirect benefits are generated when dollars spent with a local business are used by that business to purchase goods or services from another local business. Induced benefits include indirect benefits plus those benefits generated when the employees of local businesses respense some portion of their wages within the local economy to support their households. Induced benefits are more difficult to determine than indirect benefits. Because indirect benefits do not include any induced benefits, indirect benefits tend to be very conservative estimates.

**Table 2  
Economic Benefits and Multipliers Fiscal Year 2001**

	Direct	Indirect	Induced
Total Expenditures	\$195,006,479	\$215,291,318	\$278,684,033
FTE Jobs Created (1)	2,659	1,763	2,723
Expenditure Multiplier		1.10	1.43
Job Multiplier		12.50	17.43

(1) “Direct” FTE Jobs Created is the FTE employed by JMU including 675 auxiliary employees. The number of jobs in columns “Indirect” and “Induced” have been reduced by 675 as discussed in the methodology of this report. The unadjusted jobs generated by the Job Multipliers are 2,438 and 3,398 respectively.

For every dollar of University related local spending, ten cents was respense with local businesses. In other words, the indirect multiplier was 1.10. This multiplier is relatively small due to the structure of the local economy. The local economy leans toward retail and service establishments which tend to purchase supplies from businesses outside of the community. Therefore, dollars tend to leave the community more quickly than in larger and more diverse communities that can better supply the same kinds of businesses.

Twelve and one-half jobs were indirectly created for every one million dollars of direct expenditure (\$195 million times 12.5 equals 2,438). The “FTE Jobs Created” in Table 2 has been adjusted by the fact that this analysis removed auxiliary spending and employees, allowing student spending to regenerate them through the IMPLAN model. There were 675 Auxiliary employees for this study. The model produced an indirect job total of 2,438. The total created indirectly outside of University employment was 1,763 (2,438 minus 675). Again, the number of indirect jobs created is a conservative estimate because induced benefits are not included.

The induced job multiplier generated by the VEC’s IMPLAN model was 17.43. Again, the IMPLAN output of 3,398 jobs was adjusted for the 675 FTE auxiliary employees of the University to yield 2,723 jobs created through indirect and induced effects combined.

## SUMMARY

James Madison University continues its significant economic and cultural presence within the City of Harrisonburg and Rockingham County. In the 2000-01 academic year, JMU enrolled around 15,000 students, employed over 2,000 people in full-time positions, and had a total operating budget of \$211 million. During this same year, over \$278 million dollars in the local economy were related to spending by students, employees, and University operations. Between seven and nine percent of local employment (between 4,422 and 5,382 full-time equivalent jobs) were attributed to this spending. Between 1,763 and 2,723 of these jobs were outside the institution.

This study is but one view of the impact of an institution like JMU and these results are conservative. The methodology did not include the impact of almost \$28 million in capital expenditures per year or the spending by thousands of parents and visitors who come to town for University sponsored events. Likewise, benefits even more difficult to quantify deserve recognition. These include contributions via public service activities, research, cultural events, and volunteer student labor.

JMU could also receive an additional \$99.9 million over the next six years for construction of three new buildings, two major renovations, and two infrastructure projects. This fall voters will decide if bonds for these projects will be issued. Bonds approval will have significant impact on the City of Harrisonburg and Rockingham County.

Although enrollment is leveling, economic impact could also increase with the University's research and public service activities. Between FY1996 and FY2001, research expenditures grew from \$1.0 million to \$1.4 million (41 percent) and public service grew from \$2.6 million to \$8.0 million (208 percent). JMU continues to seek innovative opportunities for integrating research and public service activities into its academic mission.

Economic impact on the community depends in part upon how much local vendors and their employees can also meet their purchasing needs within the community. Economic benefits related to James Madison University can also grow if local businesses can find local suppliers. Respending dollars within the City of Harrisonburg and Rockingham County means more jobs for the community.