



The Economic Activity Generated by the University of Maryland, Baltimore

FY 2011

Prepared by
Richard Clinch
Director of Economic Research
The Jacob France Institute

The Jacob
france
Institute

University of Baltimore
1420 N. Charles Street
Baltimore, Maryland 21201
(410) 837-4727
Website: www.ubalt.edu/jfi

February 2012

Executive Summary

The University of Maryland, Baltimore is the core public provider of health and professional educational services in Maryland. It impacts the State of Maryland in many ways. The University is a major source of economic activity through its purchases of goods and services from Maryland suppliers and the salaries that it pays to its Maryland workforce. It plays a vital role in providing a skilled and educated workforce; and is the only provider of educational services in several key areas, such as pharmacy and dentistry, in the State. Finally, the University supports economic development in the State through the commercialization of new technologies.

The economic activity generated by the University is presented in the Summary Table below. Total University spending of nearly \$1.4 billion generates nearly \$1.5 billion in Indirect Economic Impacts for a total impact on the Maryland economy of almost \$2.9 billion. Total direct university employment of 6,996 is augmented by an estimated 15,812 jobs supported or created through indirect impacts, for a total employment impact of 22,808 jobs. There is a total of over \$1.3 billion in salaries and wages associated with these 22,808 jobs. The combined state and local fiscal impact (State income and sales taxes and local income taxes) of the wages and salaries paid to University employees or the employees supported by the University's operations is \$70.5 million in fiscal 2011.

Summary Table
Economic Activity Generated by the University of Maryland, Baltimore
(FY 2011)

Item	Direct	Indirect	Total Impact
Economic Output (Mil. \$)	\$1,387.5	\$1,475.5	\$2,863.0
Employment (# of Jobs)	6,996	15,812	22,808
Earnings (Mil. \$)	\$657.7	\$671.6	\$1,329.3
State and Local Fiscal Impact (Mil. \$)	\$38.7	\$31.8	\$70.5

Source: University of Maryland, Baltimore and The Jacob France Institute

The fiscal impact of the University of Maryland, Baltimore can also be analyzed in terms of the level of economic activity leveraged by the State appropriation. Universities, unlike other State government activities, attract a substantial portion of their revenues from other sources. In fiscal 2011, State appropriations of \$184.5 million only accounted for only 19% of University funding, down from 23% in FY2004. This leveraging of State appropriations, combined with the economic impacts discussed above, leads to a high return on State expenditures. Dividing the total economic output activity generated by the University by the State appropriation provides an estimate of the economic returns on the State's investment in the University of Maryland, Baltimore. The University of Maryland, Baltimore generates \$15.52 in economic activity for each \$1.00 appropriated.

1.0 University of Maryland, Baltimore Expenditures, Employment, and Employee Earnings in Maryland

This report analyzes the economic activity generated in Maryland by the operation of the University of Maryland, Baltimore. An economic activity analysis examines the effects of an economic activity using input-output analysis. Input-output analysis is based on the use of multipliers, which describe the response of an economy to a change in demand or production. Multiplier effects occur as an initial round of spending is spent and re-spent in the State economy. For example, an industry pays a worker a salary, a portion of which is then spent on goods and services from local companies, which in turn becomes income for other workers and supplier firms. Thus, each dollar of spending creates more than one dollar in economic activity, as that spending is earned and, in turn, spent by others in the State. This economic activity report differs from a traditional economic impact report in that it does not adjust for the potential substitution effects by other universities for the educational services provided by University of Maryland, Baltimore.

This economic activity analysis uses economic multipliers, which describe the response of an economy to a change in demand or production.¹ The first step in the modeling process is to estimate the direct effects, or the changes in final demand, in the affected industries. In this analysis the direct effects are the spending associated with the educational, patient care, and research operations of the University of Maryland, Baltimore. Once these direct effects are estimated, they can be entered into an economic model to determine the change in output (a measure similar to business sales volume which measures the level of business and economic activity in a state or region), employment, and earnings attributable to the University of Maryland, Baltimore.

The University of Maryland, Baltimore impacts the Maryland economy through four primary spending flows:

- 1) The operating expenditures of the University and its affiliated institutions;
- 2) The spending of the University's students;
- 3) The spending of the visitors attracted into the State by the University; and
- 4) The capital expenditures of the University.

As presented in Table 1, in fiscal 2011, the University, its affiliated institutions, its students, and the out-of-state visitors attracted into Maryland by the University spent a total of \$1.4 billion.² The University and its affiliated institutions employed or supported 6,996 workers who earned \$729.1 million in salaries and wages. These expenditures represent the direct effects of the University of Maryland, Baltimore.

¹ The Jacob France Institute used the RIMS-II Economic Model developed by the Bureau of Economic Analysis.

² University of Maryland Faculty Physicians has changed the way it reports data to the JFI in fiscal 2011. It was determined that MSP-FPI under-reported its expenditures in past reports and starting with this report, is providing higher expenditure figures. As a result, the impacts for this year's report are higher than in previous years due to both the growth of the institution and the restatement of expenditures.

Table 1
Total Expenditures, Employment, and Payroll Associated with the
University of Maryland, Baltimore and its Affiliated Institutions
(Fiscal 2011)

Item	
Total Expenditures (Mil. \$)	<u>\$1,400.0</u>
Total Operating Expenditures	\$986.7
Student Expenditures	\$133.4
Visitor Expenditures	\$25.8
Capital Expenditures ¹	\$13.6
UMB Foundation	\$20.3
MSP/FPI	\$220.2
 Total Employment (Number of Jobs)	 6,996
 Total Payroll and Fringe (Mil. \$)	 \$729.1

(1) Capital Expenditures included purchases of equipment. It was assumed that these purchases were made at the wholesale level and only the local margin was included in the economic analysis below.

Source: University of Maryland, Baltimore

2.0 The Maryland Output Activity Supported by University of Maryland, Baltimore

The expenditures associated with the University of Maryland, Baltimore are circulated within the State's economy and become income for residents and businesses. As described above, this creates "spin-off" or "multiplier" effects as this money is spent and then re-spent in the State economy. Thus, each dollar of new spending creates more than one dollar in economic activity in Maryland, as that spending is earned and, in turn, spent by others in the State.

The estimated output, a figure similar to business sales volume, supported by the University of Maryland, Baltimore by expenditure category is presented in Table 2. Direct impacts are the changes in economic activity directly attributable to the University. Indirect impacts are the "spin-off" or "multiplier" effects caused by the introduction of a new spending stream into the local economy. Total direct University and associated student and visitor expenditures of \$1.4 billion are leveraged with an additional \$1.5 billion in indirect spending for a combined total impact of almost \$2.9 billion.

Table 2
Economic Output Impact of
The University of Maryland, Baltimore on the Maryland Economy
By Expenditure Category, Fiscal 2010
(Millions of Dollars)

Item	Direct	Indirect	Total Impact
Total Maryland Expenditures	<u>\$1,387.5</u>	<u>\$1,475.5</u>	<u>\$2,863.0</u>
	-	-	-
Total Operating Expenditures ¹	\$978.3	\$1,070.8	\$2,049.1
Student Expenditures	\$133.4	\$111.5	\$244.9
Visitor Expenditures	\$25.8	\$23.4	\$49.2
Capital Expenditures ²	\$9.5	\$9.5	\$19.0
University of Maryland Foundation	\$20.3	\$22.2	\$42.4
Medical Service Plan/University Physicians Inc.	\$220.2	\$238.1	\$458.3

(1) Operating expenditures were reduced by the \$8.3 million paid as salaries or stipends to students in order to avoid double counting.

(2) Capital expenditures were reduced to include only the local margin for purchases of capital equipment

Source: University of Maryland, Baltimore and The Jacob France Institute

Table 3 presents the output impact of the University of Maryland, Baltimore on the Maryland economy by School. The central operating expenditures of the overall University that cannot be allocated to an individual School are included in University Central Administration. Similarly, the expenditures of the University of Maryland Foundation to support both overall University and individual School operations are included in the University of Maryland Foundation expenditures. Thus, the actual impacts of each of the Schools would larger than presented in this Table if these centralized expenditures could be allocated to each School. The School of Medicine generates the largest economic impact, generating almost \$1.4 billion of economic activity the State economy, accounting for nearly half of the total impact of the University.

**Output Impact of
The University of Maryland, Baltimore on the Maryland Economy
By School, Fiscal 2011
(Millions of Dollars)**

Item	Direct (1)	Indirect	Total Impact
Total	<u>\$1,387.5</u>	<u>\$1,475.5</u>	<u>\$2,863.0</u>
School of Dentistry	\$84.7	\$86.3	\$171.0
School of Law	\$60.9	\$60.6	\$121.5
School of Medicine	\$668.5	\$720.9	\$1,389.4
School of Nursing	\$58.9	\$58.9	\$117.8
School of Pharmacy	\$57.5	\$57.7	\$115.2
School of Social Work	\$45.8	\$63.9	\$109.7
University Central Administration (2)	\$170.7	\$167.0	\$337.7
University of Maryland Foundation	\$20.3	\$22.2	\$42.4
MSP-FPI	\$220.2	\$238.1	\$458.3

(1) Operating expenditures were reduced by the \$8.3 million paid as salaries or stipends to students in order to avoid double counting.

(2) Central Administration includes all expenditures that can not be allocated directly to a School.

Source: University of Maryland, Baltimore and The Jacob France Institute

3.0 The Impact of the University of Maryland, Baltimore on Maryland Employment and Employee Earnings

The University of Maryland, Baltimore is one of the major employers in both Baltimore City and in the State. The University and its affiliated institutions directly employ or support 6,996 workers. However, the employment impact of the University, including the jobs supported by the multiplier effects, is much greater than this employment figure. The total Maryland employment supported by the University of Maryland, Baltimore is presented by major expenditure area in Table 4, employment by school is presented in Table 5, and the wage and salary impacts of the University of Maryland, Baltimore are presented by major expenditure area in Table 6 and by school in Table 7. The spending associated with the University, its students, and visitors support an additional 15,812 jobs in Maryland, for a total University employment impact of 22,808. As presented in Table 6 and Table 7, there is more than \$1.3 billion in salaries and wages associated with the 22,808 jobs at, or supported by, the University of Maryland, Baltimore. As presented in Table 5 and Table 7, the School of Medicine has the largest employment and employment compensation impact. The total of 22,808 jobs at or supported by UMB account for almost 1% of all jobs in Maryland.

Table 4
Employment Impact of
The University of Maryland, Baltimore on the Maryland Economy
By Expenditure Category, Fiscal 2011
(Number of Jobs)

Item	Direct	Indirect	Total Impact
Total Maryland Employment	<u>6,996</u>	<u>15,812</u>	<u>22,808</u>
Total Operating Expenditures	5,972	10,736	16,708
Student Expenditures	--	1,953	1,953
Visitor Expenditures	--	473	473
Capital Expenditures	--	124	124
UMB Foundation	--	346	346
MSP-FPI	1,024	2,180	3,204

Source: University of Maryland, Baltimore and The Jacob France Institute

Table 5
Employment Impact of
The University of Maryland, Baltimore on the Maryland Economy
By School, Fiscal 2011
(Number of Jobs)

Item	Direct	Indirect	Total Impact
Total	<u>6,996</u>	<u>15,812</u>	<u>22,808</u>
School of Dentistry	342	1,051	1,393
School of Law	242	749	991
School of Medicine	3,484	7,870	11,354
School of Nursing	273	689	962
School of Pharmacy	300	640	940
School of Social Work	217	523	740
University Central Administration ⁽¹⁾	1,114	1,763	2,877
UMB Foundation	--	346	346
MSP-FPI	1,024	2,180	3,204

(1) Central Administration includes all expenditures that can not be allocated directly to a School.

Source: University of Maryland, Baltimore and The Jacob France Institute

Table 6
Earnings Impact of
The University of Maryland, Baltimore on the Maryland Economy
By Expenditure Category, Fiscal 2011
(Millions of Dollars)

Item	Direct	Indirect	Total Impact
Total Employee Compensation	<u>\$729.1</u>	<u>\$600.2</u>	<u>\$1,329.3</u>
Total Operating Expenditures	\$609.5	\$417.3	\$1,026.8
Student Expenditures	--	\$61.8	\$61.8
Visitor Expenditures	--	\$13.9	\$13.9
Capital Expenditures	--	\$5.9	\$5.9
UMB Foundation	--	\$14.2	\$14.2
MSP-FPI	\$119.6	\$87.1	\$206.7

Source: University of Maryland, Baltimore and The Jacob France Institute

Table 7
Earnings Impact of
The University of Maryland on the Maryland, Baltimore Economy
By School, Fiscal 2011
(Millions of Dollars)

Item	Direct	Indirect	Total Impact
Total Employee Compensation	<u>\$729.1</u>	<u>\$600.2</u>	<u>\$1,329.3</u>
School of Dentistry	\$36.4	\$36.4	\$72.8
School of Law	\$27.1	\$29.8	\$56.9
School of Medicine	\$406.2	\$295.1	\$701.4
School of Nursing	\$28.2	\$29.6	\$57.8
School of Pharmacy	\$29.2	\$29.6	\$58.8
School of Social Work	\$18.8	\$22.6	\$41.4
University Central Administration (1)	\$63.5	\$55.8	\$119.2
UMB Foundation	--	\$14.2	\$14.2
MSP-FPI	\$119.6	\$87.1	\$206.7

(1) Central Administration includes all expenditures that can not be allocated directly to a School.

Source: University of Maryland, Baltimore and The Jacob France Institute

4.0 The Fiscal Impact of the University of Maryland, Baltimore

The University of Maryland, Baltimore also has an impact on fiscal conditions in the State of Maryland. The salaries earned by University employees and the jobs created and sustained through University spending are subject to State and local income taxes. Many of the purchases made by University employees or the persons directly or indirectly supported by the University are also subject to sales tax. The estimated income and sales tax impact of the University and its related economic impacts on the State is \$52.8 million, with \$29.0 million in State income taxes and \$23.8 million in sales taxes. The estimated local income tax revenues generated by the University are \$17.7 million.

Table 8
Selected Fiscal Impact of
The University of Maryland, Baltimore on the State of Maryland, Fiscal 2011
(Millions of Dollars)

Item	Direct	Indirect	Total Impact
Total State Government Revenues	<u>\$29.0</u>	<u>\$23.8</u>	<u>\$52.8</u>
State Income Tax (1)	\$15.9	\$13.1	\$29.0
Retail Sales Tax (2)	\$13.1	\$10.8	\$23.8
Estimated Local Income Tax Revenues (1)	\$9.7	\$8.0	\$17.7

(1) Calculated as the incremental increase in earnings multiplied by the effective state or local income tax rate.

(2) An average of 29.9% of income is spent on goods subject to sales taxes calculated using Maryland's 6% sales tax rate.

Source: University of Maryland, Baltimore and The Jacob France Institute

The fiscal impact of the University of Maryland, Baltimore can also be analyzed in terms of the level of economic activity leveraged by the State appropriation. Universities, unlike other State government activities, attract a substantial portion of their revenues from other sources. In Fiscal 2011, State appropriations of \$184.5 million only accounted for only 19% of University funding, down from 23% in FY2004. This leveraging of State appropriations, combined with the economic impacts discussed above, leads to a high return on State expenditures. Dividing the total output activity generated by the University by the State appropriation provides an estimate of the economic returns on the State's investment in the University of Maryland, Baltimore. The University of Maryland, Baltimore generates \$15.52 in economic activity for each \$1.00 appropriated.

Prepared by:

The Jacob
france
Institute

Merrick School of Business
The University of Baltimore
1420 N. Charles Street
Baltimore, Maryland 21201
www.ubalt.edu/jfi
(410) 837-4727